REPUBLIC OF RWANDA

MINISTRY OF HEALTH

National Guidelines for Prevention and Management of HIV

Edition 2018

RWANDA
BIOMEDICAL
CENTER

A Healthy People . A Wealthy Nation

PREFACE

Despite many advances in the fight against and control of HIV/AIDS in the last decades, HIV/AIDS still remains a major health problem in developing countries. Even though Rwanda is among a few countries at the forefront of reaching the three 90s and thereby paving the way to achieve HIV epidemic control in the near future, it still counting more than 220,000 people living with HIV/AIDS with a treatment coverage of more than 80%. Identification of the remaining population infected by HIV, reducing new HIV infections and the expansion of antiretroviral treatment to reach all identified positive are top priorities of the Ministry of Health.

There is evidence that starting ART early to HIV-infected patients can reduce devastating impact of HIV pandemic, to maximize early initiation, Rwanda adopted
"Treat All", HIV positive patients since July 2016. While this was another golden opportunity to increase the number of new patients on treatment and put the national HIV program in the right direction towards attainment of the 90-90-90 targets, strategies for identification of those hard to reach population initiate and keep them on treatment with good adherence for better outcome.

However, the journey towards epidemic control can only be reached through active participation and engagement of all stakeholders, both national and international for technical and financial support.

Cost effective innovative strategies should be prioritized in all interventions.
Human capacity strengthening should occupy an important place during the process through guideline to support implementation of services for quality of services.
These are National Guidelines for Prevention and Management of HIV, 2018 Edition, in accordance with the most updated scientific evidences and adapted to the Rwandan national context. It thus responds to the need by the Ministry of Health to improve skills of actors in the health sector as well as the quality of HIV services offered in both public and private health facilities countrywide.
We are fully aware that in spite of the progress made, there is still a lot to be done in prevention and management of HIV towards a healthy people and wealthy nation.
May this publication contribute to improve the knowledge on HIV/AIDS of all actors in the health sector and in improving the living conditions of our population.

Dr Diane Gashumba
Minister of Health

ACKNOWLEDGEMENT

The Rwanda Biomedical Center (RBC/IHDPC/HIV Division) is grateful to all the organizations and persons who contributed to the development and revision of the 2018 National Guidelines for Prevention and Management of HIV Infection.

These guidelines would not have been finalized without the usual support of all the stakeholders who are involved in HIV response in Rwanda. We give our sincere thanks and appreciation to the following organizations, for their technical and/or financial support:

- To the US government, mainly Centers for Disease Control and Prevention (CDC) – and USAID RWANDA;
- To the University of Maryland, School of Medicine, Institute of Human Virology for their technical support;
- To the UN family, mainly WHO and UNICEF
- To AIDS Health Foundation
- To the Global Community
- To Partners in Health
- To CHAI
- TO MOH-RBC staff, mainly HIV Division staff
- To all HIV Experts (Members of Technical Working Groups, Clinicians, Researchers and other Stakeholders) who participated actively in writing the different chapters.

Our appreciation also goes towards all persons, who, from near or far, contributed to the realization of these guidelines; please accept our heartfelt gratitude.

_____

Dr Sabin NSANZIMANA
HIV/AIDS, STIs
and OBBI Division Manager

MAIN ACCRONYMS AND ABBREVIATIONS

3TC	Lamivudine
ABC	Abacavir
AES	Accident d'exposition au sang
APRI	Aminotransferase Platelets Ratio Index
ARV	Antiretroviral
AZT	Azidothymidine
CD4	Cluster of Differentiation 4 (Stands for T4 Lymphocytes)
CDC	Centre for Diseases Control and Prevention
CMV	Cytomegalovirus
CTM	Cotrimoxazole
ddI	Didanosine
DNA	Deoxyribonucleic Acid
EFV	Efavirenz
FTC	Emtricitabine
HBe Ag	Hepatitis B Envelop Antigens
HBs Ag	Hepatitis B Surface Antigens
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HTS	HIV Testing Services
IDR	Intradermal Reaction
IDV	Indinavir
LDV	Ledipasvir
NFV	Nelfinavir
NNRTI	Non Nucleoside Reverse Transcriptase Inhibitor
NRTI	Nucleoside Reverse Transcriptase Inhibitor
NVP	Nevirapine
OI	Opportunistic Infection
PCR	Polymerase Chain Reaction
PEG-INF	Pegylated Interferon
PI	Protease inhibitor
PLHIV	Person living with HIV
PMTCT	Prevention of mother to child transmission
RNA	Ribonucleic Acid
RTV	Ritonavir
TDF	Tenofovir
UNAIDS	Joint United Nations Programme on HIV/AIDS
VZV	Varicella zoster virus
WHO	World Health Organization

CONTENTS

PREFACE 3
ACKNOWLEDGEMENT 4
MAIN ACCRONYMS AND ABBREVIATIONS 5
CONTENTS 7
DEFINITION OF KEY TERMS 11
SECTION I : HIV PREVENTION 12
I.0. Summary of recommendations on HIV prevention 12
I.1. Introduction 13
I.2. Requirements for HIV Prevention services delivery 13
I.2.1. Modalities of services provision 13
I.2.2. Opening prevention services 13
I.2.2.1. Training of the Personnel 14
I.2.2.2. Required Physical Infrastructure 14
I.2.2.3. Required Materials and Equipment 14
I. 2.3. Ethical Considerations for Operating HIV Prevention Services 15
I. 2.3.1. Consent for HIV Testing 15
I. 2.3.2. Confidentiality 16
I.3. HIV Diagnosis 17
I.3.0 Key messages 17
I.3.1. HIV Testing and Counselling (HTS) 18
I.3.1.1. HTS Guiding Principles 18
I.3.1.2. HTS Procedures 19
I.3.1.3. Approaches for HIV Testing Services (HTS) 24
I.4. Prevention of mother to child transmission (PMTCT) 34
I.4.0 Key recommendations on PMTCT 34
I.4.1. General Overview 36
I.4.2. PMTCT Pillars 36
I.4.2.1. Prevention of unwanted pregnancies 37
I.4.2.2. Pregnancy Desire 37
I.4.2.3. Antenatal and during delivery follow up 39
I.4.2.4. The use of ART drugs in PMTCT 40
I.4.2.4. Postnatal follow up for the Mother-Child Pair 43
I.5. HIV prevention among discordant couples 49
I.6. Pre-exposure prophylaxis 50
I.6.1. PrEP in PMTCT context 50
I.6.2. PrEP for safer pregnancy 52
1.6.3 Syphilis screening and treatment for pregnant women 53
I.7. ART for Post-Exposure Prophylaxis (PEP) 53
I.7.1. Special Considerations in Cases of Accidental Exposure to Blood (AEB) or Other Biological Fluids 54
I.7.2. Special Considerations in Cases of Sexual Assault or Rape 55
I.7.3. ART Prophylaxis 56
I.8. HIV prevention among Key Populations 58
I.8.1. Services for all key populations 58
I.8.2. HIV Testing and Counseling 59
I.8.3. Referrals to HIV care and treatment 59
I.9. Combination of HIV prevention 61
I.9.1. Biomedical Prevention 61
I.9.1.1. Condoms 61

I.9.1.2. Voluntary Medical Male Circumcision (VMMC) 62
I.9.2. Prevention with People Living with HIV 65
I.9.3. Behavioral Interventions 66
I.9.4. Structural and Supportive Interventions 66
I.10. Linkage to Care and Treatment 67
I.10.1. Linkages to Care and Treatment for Individuals testing HIV Positive 67
I.10.2. Recommendations for Retesting Individuals Prior to ART Initiation 68
I.10.3. Linkage to Further HIV Prevention for Individuals Testing HIV Negative 69
I.10.4. Recommendations for Retesting for Individuals WHO Test HIV-Negative 70
SECTION II: HIV CARE AND TREATMENT 71
I.0. Summary of recommendations on HIV care and treatment 72
II.1. Introduction 73
II.2. PSYCHOSOCIAL CARE 73
II.2.1. Key message on psychosocial care 73
- 0-4 years old: No disclosure yet 74
- 5-7 years Old: Early disclosure 74
- 8-10 years: Partial disclosure 74
- 11-14 years old: Full disclosure 74
II.2.1. Definition 74
II.2.2. Rationale 74
II.2.3. Key activities of psychosocial support of PLHIV? 75
II.2.3.1. Psychosocial assessment of HIV positive clients 75
II.2.3.2. Preparation to ART initiation 81
II.2.3.3. HIV counseling 83
0-4 years old: No disclosure yet 89
II.2.2.4. Adherence and retention to HIV care and treatment 95
II.2.2.5. Psychosocial support groups 101
II.2.2.7. Community support of people living with HIV 107
II.3. NUTRITION ASSESMENT, CARE AND SUPPORT(NACS) 117
II.3.1. Introduction 117
II.3.2. Components of NACS 117
II.3.2.1. Nutrition Assessment 117
II.3.2.2. Nutritional counseling 118
II.3.2.3. Nutritional Support 119
II.4. CARE AND TREATMENT 125
II.4.1. Goals of Antiretroviral Therapy (ART) 125
II.4.2. Differentiated Service Delivery Model (DSDM) 125
II.4.2. HIV CARE AND TREATMENT FOR CHILDREN UNDER 10 YEARS 127
II.4.2. 1. Initial clinical and laboratory evaluation 128
II.4.2. 2. ART regimen for children younger than 10 years of age 129
II.4.2.HIV CARE AND TREATMENT FOR ADOLESCENTS & ADULTS 130
II.4.2.2. ART Regimen 135
*Lamivudine can be substituted by Emitricitabine (FTC) 140
II.4.2.3.HIV-TB co-infection 141
II.4.2.3.1. Screening and diagnosis of TB-HIV co-infection 147
II.4.2.3.2. Treatment of TB-HIV Co-infection 150
II.4.2.3.7. Dosing of Third Line Drugs 155
Annex. II: Management of side effects 160
1. Evaluation of Dermatological Toxicity 165
2. Evaluation of Hepatotoxicity 185

DEFINITION OF KEY TERMS

The following definitions are used to ensure consistency within these guidelines :

- **A child:** is a person younger than 10 years old.
- **An adolescent:** is a person 10–19 years old inclusive
- **An adult:** is a person older than 19 years.
- **Differentiated service Delivery Model:** A patient-centered approach to HIV care and treatment categorizes patients on ART into two groups, stable and unstable according to the pre-defined criteria and based on pharmacy refill and clinical follow-up period.
- **Viral load suppression:** Viral suppression is defined as, literally, suppressing or reducing the function and replication of a virus. According to WHO someone is considered as having suppressed, when s/he has 1000 copies/ml. In Rwandan context as per the current HIV guidelines, Patients are considered to have suppressed when their VL is 200 HIV RNA copies/ml
- **Undetectable viral load:** ART can reduce a person's viral load to the point it becomes so low. The current guidelines consider a patient with undetectable VL when it is under 20 copies/ml. It does not fully clear the virus from the body or cure someone of HIV. Excellence adherence, or taking ART as prescribed, is important to maintain an undetectable viral load.
- **Treatment failure:** Treatment failure refers to the current WHO virological criteria for treatment failure, which is two consecutive viral load tests ≥1000 HIV RNA copies/ml.
- **Advanced diseases:** In accordance with WHO: (i) All children with HIV younger than five years old should be considered as having advanced disease at presentation; (ii) adults, adolescents, and children ≥five years, advanced HIV disease is defined as a CD4 cell count ≤ 200mm3 or a WHO clinical stage 3 or 4 event at presentation for care.

SECTION I: HIV PREVENTION

I.0. Summary of recommendations on HIV prevention

Recommendation 1.

The voluntary testing of HIV is a personal decision. For people aged 12 years and above, their verbal consent is required. For children under 12 years old, the consent from a parent or a legal guardian is required.

Recommendation 2.

The initial HIV testing is performed using finger prick method. All clients identified HIV positive will be retested for verification by a laboratory technician on the same day, using a new blood draw.

Recommendation 3.

The HIV rapid testing algorithm comprises 2 stage tests using Alere HIV Combo as first screening test and Stat Pak as second screening test.
A retesting procedure for verification is recommended for all identified positive cases.

Recommendation 4.

HIV Self-Testing is done by the client him/herself when he/she is aged 18 years and above. Each positive result must be confirmed by a trained healthcare provider using usual HIV testing methods.

Recommendation 5.

All HIV positive clients who will be identified at health facilities will be enrolled in index testing and partner notification process as part of active HIV case finding.

Recommendation 6.

Pregnant women attending ANC services should receive HIV testing services together with their male partners, preferably within the first trimester of pregnancy.

Recommendation 7.

Each pregnant woman whose previous HIV status is unknown or negative during ANC, will be retested for HIV in maternity at the beginning of labor.

Recommendation 8.

Each HIV pregnant and breastfeeding woman tested HIV positive will start immediate ART or as early as possible. The starting ART regimen is Tenofovir + Lamivudine + Dolutegravir

Recommendation 9.

A Child born to a known HIV positive mother will receive ART prophylaxis, Zidovudine and Nevirapine starting in the first 72 hours post-partum until the age of six weeks of life. The HIV testing services will include the PCR/-DBS at 6weeks and serological tests at 9, 18 and 24 months.

Recommendation 10.
A pre exposure prophylaxis is offered to an HIV negative partner in SDC couple whose partner is not enrolled on ART or enrolled on ART who are not virally suppressed. PreP is also offered to HIV negative female sex workers who are not consistently using condoms for the entire period they still exposed

Recommendation 11.
A tetanus vaccine will be administered prior to each VMMC procedure. Two doses before a non-surgical procedure (PrePex device) respecting a four-week interval, and a single tetanus vaccine dose will be administered at the beginning of each surgical procedure.

I.1. Introduction

This chapter offers background, definitions objectives, and a description of the package of services for each prevention component.

Components of HIV Prevention are part of the package of health services offered at health facilities and any other recognized organization providing health services, to include community mobilization, HIV Testing Services (HTS), Prevention of Mother-to-Child Transmission (PMTCT), Voluntary Medical Male Circumcision (VMMC), Pre and Post Exposure Prophylaxis (PrEP and PEP), Prevention services for Key and priority populations and condom programming.

This chapter describes requirements for HIV prevention services delivery in Rwanda. They include, among others, the location of activities and the conditions for opening HIV prevention services in a health facility.

I.2. Requirements for HIV Prevention services delivery

I.2.1. Modalities of services provision

HIV prevention services must be integrated into the package of services offered by all public health facilities and be included in outreach activities in the community.

Upon fulfilling accreditation requirements by RBC, private health facilities and any other recognized organization providing health services may also carry out prevention services under supervision of the district Hospital.

I.2.2. Opening prevention services

Site accreditation to provide HIV prevention services will be given through the district hospital to any health facility or any other recognized organization providing health services. The authorization will be offered by the Rwanda Biomedical Centre, after an assessment of the facility to ensure requirements are met.

During the assessment of the health facility and any other recognized organization providing health services, the district hospital must ensure that acceptance criteria are met, including the existence of trained personnel, required infrastructures, and equipment as further detailed below.

I.2.2.1. Training of the Personnel

To provide HIV prevention services, the health facility should have certified staff with relevant trainings. Healthcare providers are trained using standard training modules validated by the Rwanda Biomedical Centre.

These trainings are integrated and must combine all HIV prevention components. Refresher trainings of personnel should be organized at least every two years to ensure continuity of training of staff.

Every healthcare provider should be able to provide HIV prevention services.

These include doctors, nurses, social workers, nutritionists, clinical psychologists, laboratory technicians, and pharmacists. The specific services provided will vary according to the professional's area of expertise.

I.2.2.2. Required Physical Infrastructure

The infrastructure must enable the provision of high-quality services and be designed in such a way as to respect confidentiality and allow for easy dialogue. In order to offer HIV prevention services, a health facility and any other recognized organization providing health services must have at least one reception room, a counselling office, and a laboratory.

PMTCT services must be offered by a health facility with a maternity ward built and equipped according to MOH standards. For details regarding the required infrastructure, refer to the "Health Facility Evaluation Form" available in annex.

I.2.2.3. Required Materials and Equipment

To provide clinical HIV prevention services, a health facility must have the suitable material and equipment according to the MoH standards.
Apart from office equipment, the health facility must have national guiding documents for reference :

- Current National guidelines for prevention and management of HIV and STIs
- Health care provider training manuals and job aides
- Standards operating procedures (SOP) for all HIV prevention services
- IEC materials and demonstration tools

For details regarding the required materials and equipment, refer to the "Health Facility Evaluation Form" in annex.

I. 2.3. Ethical Considerations for Operating HIV Prevention Services

I. 2.3.1. Consent for HIV Testing

The decision to be tested must be made by the person concerned. This person has the right to receive all the information related to HIV testing and all the possible outcomes prior to giving consent to be tested and counselled. Verbal consent is sufficient and written consent is not required.

Any person aged 12 years and above may provide his or her own verbal consent for an HIV test.
The counsellor, however, should assess each child's ability to consent to HTS, according to the following:

- Understanding information about the benefits, risks and social implications of HIV testing
- React accordingly (i.e., agree or refuse to test) based to the child's understanding of the information received
- Cope with his or her HIV test outcome.

Due to the current age at sexual debut in Rwanda and children's vulnerability to HIV and other STIs, an exception can be made for specific cases such as

- For children under 12 years of age, the consent of a parent or a legal guardian is required
- Key populations including sex workers, men who have sex with men, people who inject drugs, or for girls who are pregnant, may not require consent.
- If the person does not have all of his mental faculties to make an informed decision about the test, the procedure will be performed only when it is certified to be in his or her medical interest or the decision to test should be made by a family member or a legal guardian.

I. 2.3.2. Confidentiality

Confidentiality is the client's right and an obligation of the provider. Confidentiality means to keep the client's information private. Patient information can only be shared with others when the patient has given consent to release the information. Confidentiality must be guaranteed at all stages of the counselling process. The client's confidentiality is protected by ensuring the following :

- Files and records of clients must be kept confidential.
- System of archiving and storing client files must be designed in a way that guarantees confidentiality.
- All personnel with access to medical records or test results are bound to confidentiality.
- In case of referrals, it is mandatory to observe the rules of shared confidentiality.

I.3. HIV Diagnosis

I.3.0 Key messages

* The voluntary testing of HIV is a personal decision. For people aged 12 years and above, their verbal consent is required. For children under 12 years old, the consent from a parent or a legal guardian is required.
* The goal of HTS is to identify people living with HIV as early as possible and link them in a timely manner to appropriate prevention, care, and treatment services.
* The initial HIV testing is performed using finger prick method. All clients identified HIV positive will be retested for verification by a laboratory technician on the same day, using a new blood draw.
* The HIV rapid testing algorithm comprises 2 stage tests using Alere HIV Combo as first screening test and Stat Pak as second screening test.
* HIV Self-Testing is done by the client him/herself using the OraQuick test kit. Each positive result must be confirmed by a trained healthcare provider using other usual HIV testing methods.
* Only people aged 18 years and above are allowed to perform HIV self-testing.
* Index testing refers to a focused approach to HIV testing in which family members (including children of HIV positive mothers) and other sexual partners of people diagnosed with HIV (Index case) are offered HIV testing services.
* The Partner notification process refers to health care workers who will ask the newly diagnosed HIV positive client, to voluntary provide a list of all his/her sexual or injecting drug use partners, and the list of her children for diagnosing purposes.
* Recency testing is an approach to detect HIV early infection or long-term HIV infection from confirmed HIV-positive clients with an objective to identify new HIV infections among index cases, characterize them to inform prevention interventions.

I.3.1. HIV Testing and Counselling (HTS)

The overall goal of HTS is to ensure everyone knows his/her HIV serological status. It is also to identify people living with HIV as early as possible after acquiring HIV infection, and link them in a timely manner to appropriate prevention, care, and treatment services.
The people tested HIV-negative should receive appropriate counselling and be linked to prevention services to remain HIV negative.

HTS services include both voluntary HIV counselling and testing (VCT) and provider initiated HIV testing and counselling (PITC). VCT services are provided to the client who decides on his/her own to undertake HTS, while PITC are when the health care provider's offers HTS for a client who consulted for any other health problem with symptoms related to HIV or for population with high risk to acquire HIV infection.

I.3.1.1. HTS Guiding Principles

All forms of HTS should be voluntary and adhere to the five C's :
- Consent,
- Confidentiality,
- Counselling,
- Correct test results and
- Connections to care, treatment and prevention services.

Mandatory or coerced testing is never appropriate, whether that coercion comes from a healthcare provider or from a partner or family member.
Connections to prevention, care, and treatment services should include the provision of effective referral to appropriate follow-up services as indicated, including long-term prevention and treatment support. Each positive patient must have a unique identifier (for example TRACnet Number) in the HTS register under the observation column.

I.3.2. HTS Procedures

HTS procedures should be executed in the same place and include pre-test counselling, HIV testing, post-test counselling with delivery of results, and linkage to care and treatment for those tested HIV positive or provide prevention services as needed for those who tested HIV negative.

1.3.2.1. Pre-test Counselling

Pre-test counselling should be concise and brief as much as possible and provided to all people seeking or requiring HIV testing. It may be provided individually, to a couple, to a group of people or, if necessary, to a parent or guardian (for children below 12 years, people not in command of all their mental faculties, and people with disabilities). Written/verbal informed consent is required according to the guidance outlined in section 1.4.1. In case of language problems, the counsellor may use an interpreter to assure that the client understands all steps of counselling and this process must respect confidentiality.

1.3.2.1.1. Pre-test counselling provided in a group

Should utilize Information, Education and Communications/Behavior Change Communication (IEC/BCC) approach. IEC/BCC approach should provide message about :
- Difference between HIV and AIDS,
- Importance of being tested,
- Importance of index testing and partner notification
- Process of partner notification
- Introduction of recency testing
- Modes of transmission,
- Means of HIV prevention,
- Testing procedure and possible results and their significance,
- Availability of care and treatment services
- Demonstration on use of condoms.
- The clients have an opportunity to ask questions and receive answers.

1.3.2.1.2 Individual pre-test counselling

It takes place in a designated counselling area, where clients are received one at a time. It must follow the following steps:

- Reception, introduction and screening of client's eligibility for consenting process
- Assessment of the client's knowledge on HIV and AIDS
- HIV risk assessment (Number of sexual partners, condom use, HIV status for the sexual partner…)
- Preparation for HIV testing and acceptance of test results and its significance
- Provision of information on availability of care and treatment services in case of a positive result
- Obtaining an informed consent for HIV testing (refer to section 1.4.1)

1.3.2.2 HIV Testing

HIV testing can be performed using blood or oral fluids.

1.3.2.2.1 HIV testing using blood

This should be conducted by a trained Health worker or non-health worker counsellor using the finger prick method. This method is easy to use, less invasive than other blood draws, and better tolerated by clients.

HIV testing is performed using the national HIV Rapid Test Algorithm approved by the MOH (figure 0.1) to provide a final HIV test result. HIV Rapid Test Algorithm is implemented in two main settings; health facilities and in the community. Clients with indeterminate/ inconclusive test results according to the testing algorithm will return for retesting after 4 weeks with the exception of special cases required to send sample immediately for testing using HIV ELISA to include the following :

- Pregnant women attending antenatal clinics and delivery room,
- Couples who seek HIV testing for marriage
- Rape cases

The initial HIV testing of eligible consented clients is performed by Health worker or non-health worker counsellor at the different entry points using finger prick method. For the positive identified clients, retesting for verification is performed by a laboratory technician on the same day using a new blood draw. Any discordant results between testers must be handled as indeterminate/ inconclusive results and reported to the NRL for a resolution. In particular situations, whereby a lab technician is not available, retesting for verification might be conducted by another trained healthcare provider to ensure that clients are HIV+ before initiation of ARVs.

Quality assurance of HIV testing is conducted at all entry points and laboratories of the health facilities to ensure accurate and reliable test results through implementation of HIV rapid testing continuous quality improvement activities to include training of testers in HIV rapid testing and quality assurance, use of standard HIV logbook, internal quality control of test kits and national external quality assurance using Proficiency testing and Mentorship supervision under the supervision of the National Reference Laboratory (NRL) and MOH Clinical Services

1.3.2.2.2 HIV Testing using oral fluids

Commonly known as HIV Self-Testing, this should be done by the client him/herself using the OraQuick test kit. However, a positive result does not mean that the client is definitely infected with HIV, but rather

that additional testing for confirmation should be done in a health facility by a trained healthcare provider using the HIV testing method that uses blood. If the self-test result is negative, the individual's HIV status should be considered negative. If an individual self-tests and has been recently exposed or is at ongoing risk; then retesting should be recommended.

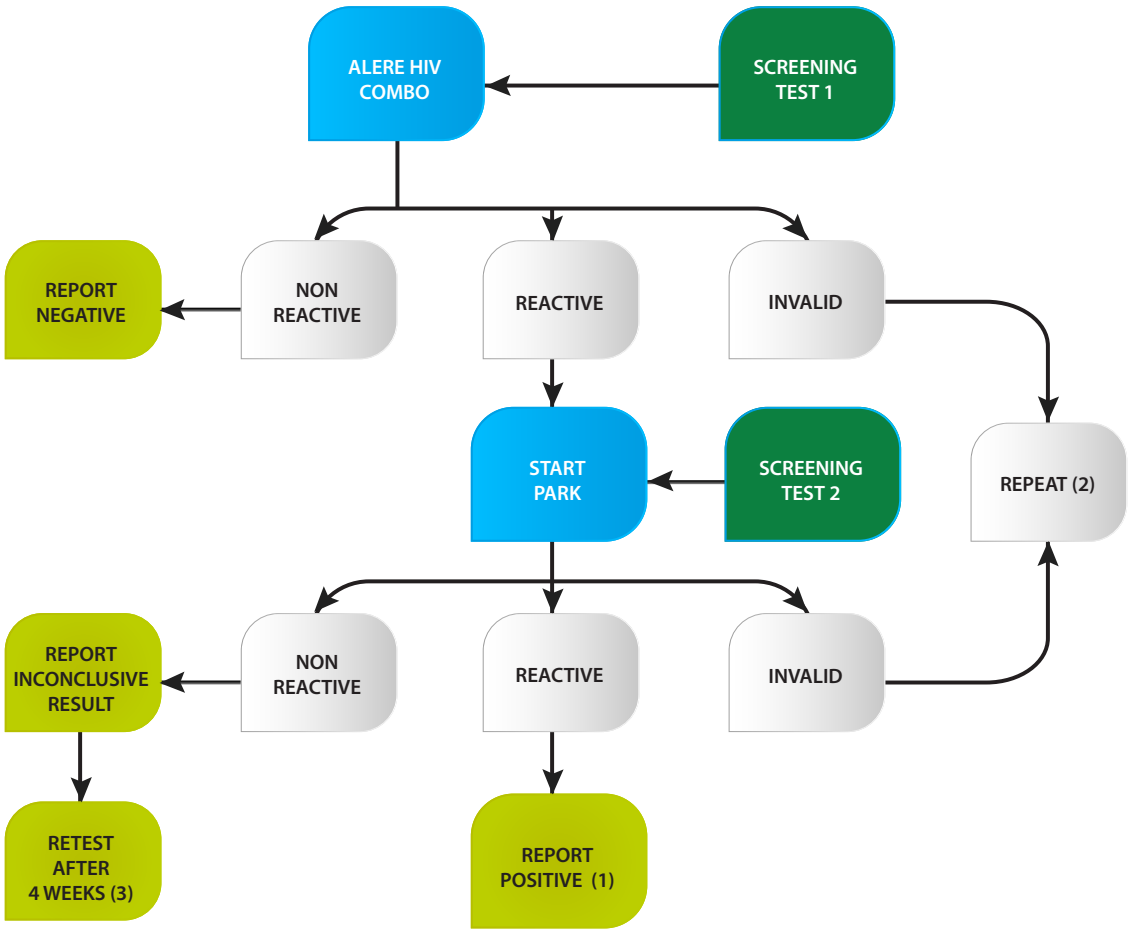
The age to which a person is allowed to perform HIV self-testing should be for persons aged 18 years and above.

1.3.2.2.3 HIV Testing algorithm

The current HIV rapid test algorithm is serial algorithm that comprises of 2 stage tests :

- Alere HIV Combo as First screening test (Alere TM HIV Combo)
- Stat Pak as Second screening test (Chembio HIV 1/2 STAT-PAK®)

Figure 1: Current HIV Rapid Test Algorithm



(1) All positive cases will be confirmed following the same algorithm
(2) If repeated test is again invalid, then retest after 4 weeks
(3) NRL will continue to perform QC using ELISA test incoclusive results

1.3.2.2.4 Announcement of the Result

The results of an HIV rapid test are to be given within established turnaround times of the same day. The communication of the results is verbal.

Clients requesting for written results for any reason must be received/reviewed by the management of the Health facility and provide authorized written results.

Positive or negative results may change depending on many factors (client exposure after previous test, window period, inconclusive results, sample and human errors) therefore written results should be interpreted with cautiousness.

For clients able to give their own consent per section 1.3.1, HIV test results should be given to the consenting individual or consenting couple. For those under the age of 12 or those unable to provide consent for themselves, their results should be communicated to the parent or guardian. The client must himself or herself be present when the results are communicated and for minors appropriate counselling for their age must be given.

1.3.2.3 Post-Test Counselling

The same person who gave the pre-test counselling should provide post-test counselling. In case of language problems, the counsellor may use an interpreter to assure that the client understands all steps of counselling and this process must respect confidentiality.

In case the client is a child below 12 years or an adult not in command of all of his mental faculties, post-test counselling will be given to the parents or guardian.

In case of ***negative results:***

- Post-test counselling should insist on the risk reduction strategies for HIV prevention and the counsellor should give information to the client about the seroconversion period and its implications. The counsellor should also encourage clients to bring their sexual partners for HIV testing.
- For high-risk clients who test HIV-negative such as commercial sex workers, men who have sex with men, or HIV-negative partners in discordant couples, the counsellor will encourage HIV risk reduction behaviors and the importance of retesting every 12 months. The above mentioned population should be kept in the continuous follow up to ensure that the package of services is offered as per the national guidelines
- Pregnant women in serodiscordant couple relationships should be encouraged to retest every 3 months until the end of PMCT follow up period of 24 months' post-partum.
- HIV Negative clients who are not at high risk of HIV infection should be advised to keep protecting themselves against HIV and plan to retest only after any other exposure.
- HIV Negative clients who have HIV positive partners (discordant couple) who are not virally suppressed should be initiated on pre exposure prophylaxis
- HIV risk reduction plan (Abstinence, Being faithful to one partner
- Condom use, Don't share needles, Education and information for behavior change (ABCDE).

In case of ***positive results:***

- Post-test counselling will encourage on risk reduction and secondary prevention of HIV infection.
- HIV-positive clients should be referred to a comprehensive HIV care and treatment unit for enrolment, ART initiation and follow-up.

- See section 8 below, on procedures for linkage to care and treatment.
- Enrollment into care and initiation to ARVs should be done the same day as the diagnosis day taking into consideration the client's readiness to initiate ART. For those clients not ready requiring more preparation should be preferably initiated on ART within a week maximum.
- Clients must be encouraged to live positively, to reduce further exposure, and to avoid transmitting new infections to others.
- Clients are advised to disclose their status to their sexual partners and invite them for HIV testing. For female clients who test positive and have children, they are encouraged to bring them in for testing as well.
- All HIV positive clients will be introduced on recency testing

I.3.3. Approaches for HIV Testing Services (HTS)

Diverse models of HTS delivery are used with the aim to increase population's access to HIV testing, and identify new HIV+ cases and link them to care and treatment.
Services are available in health care facilities, in other recognized organizations providing health services, in the community and home based (HIV self-testing). Each setting involves specific HTS approaches:

I.3.3.1. Health Facility Based HIV Testing and Counselling

It is recommended to routinely offer HTS in clinical settings through different entry modalities. HTS are offered as scheduled by the health facility and follow principles outlined under section 2.1.1
Through the following modalities, facility based HIV testing and counselling services are offered :

- Voluntary HIV Counselling and Testing
- Provider Initiated Testing and Counselling (STI, Tuberculosis, Nutrition, Family Planning, Immunization, Inpatient, Outpatient…)
- Prevention of Mother to Child HIV Transmission (ANC, Maternity, Labor and Delivery, EID)
- Voluntary Medical Male Circumcision
- Mobile Testing and Outreach

I.3.3.2. Index Case Testing and Partner Notification

I.3.3.2.1 Operational definitions

Index testing refers to a focused approach to HIV testing in which the household, family members (including children less than 15 years for HIV positive mothers) and sexual partners of people diagnosed with HIV (Index Case) are offered HIV testing services.
Index client is defined an individual newly diagnosed as HIV-positive and/or an HIV-positive individual who is enrolled in HIV treatment service.
Partner Notification: voluntary process where trained counsellors and/or health care workers ask index clients to list all of their: (1) sexual or injecting drug use partners within the past year, and (2) children.
Index testing and partner notification services are integrated approaches in HTS. It is recommended to be offered to people who have tested HIV+ (Index Clients) and their sexual partners or injecting drug use partners, family members including their children of HIV positive that are at risk of HIV infection.
The goal of index testing and partner notification services is reaching the above mentioned high risk groups in order to provide them with HTS thus identifying new HIV positive individuals and interrupting the chain of HIV transmission. Furthermore, partner notification serves as entry point to other prevention services as well as linkage to care and treatment.

1.3.3.2.2 Principles of Index Testing and Partner Notification Services

Index Testing and PNS, should be voluntary whereby the client chooses and consent on the best options for him/her. It should be confidential and delivered in a non-judgmental manner. Furthermore, it should be accessible and available to all as well as comprehensive. The healthcare provider should document the PNS provided to the clients and their partners.

Partner Notification combines the following approaches:
1. Passive HIV partner notification
2. Assisted HIV Partner notification

Passive HIV partner notification services: HIV positive individuals are encouraged by a trained provider to disclose their status to their sexual and/ or drug injecting partners by themselves, and to also suggest HTS to the partner(s) given their potential exposure to HIV infection.

Assisted HIV partner notification services: HIV-positive clients consent to be assisted by a trained provider to directly disclose their status or to anonymously notify their sexual and/or drug injecting partner(s) of their potential exposure to HIV infection.

Assisted partner notification should be done using contract referral; provider referral or dual referral approaches.

- Contract referral: HIV-positive clients enter into a contract with a trained provider and agree to disclose their status and the potential HIV exposure to their partner(s) by themselves and to refer their partner(s) to HTS within a specific time period. If the partner(s) of the HIV-positive individual does not access HTS or contact the health provider within that period, then the provider will contact the partner(s) directly and offer voluntary HTS.
- Provider referral: With the consent of the HIV-positive client, a trained provider confidentially contacts the person's partner(s) directly and offers the partner(s) voluntary HTS.
- Dual referral: A trained provider accompanies and provides support to HIV-positive clients when they disclose their status and the potential exposure to HIV infection to their partner(s). The provider also offers voluntary HTS to the partner(s).

After obtaining consent from the index client, each listed partner is: (1) contacted, (2) informed that they have been exposed to HIV, and (3) offered voluntary HIV testing services (HTS).

I.3.3.3. Community-Based HIV Testing and Counselling

HTS can be offered in a variety of settings in the community. The same principles for HTS outlined in section 1.3.1.1 also apply for community-based HTS (pre-test counselling, consent, testing, post-test counselling, and linkage to appropriate care and treatment or prevention services).

In Rwanda, community-based HTS refers to outreach or mobile HTS. It is recommended in key populations hotspots (specifically sex workers, men who have sex with men, mobile populations, etc.) with linkage to prevention, care, and treatment services.

Refer to section 1.3.1.2 for detailed guidelines on pre-test counselling, testing, post-test counselling, and linkage to further services for treatment or prevention.

1.3.3.3.1 HIV self-testing

HIV self-testing is an approach by which a person who wants to know his or her HIV status collects a sample, carries out a test and interprets the test result in private.

This approach is currently recommended by the World Health Organization as a way to facilitate access to people who do not access existing HIV testing services thus providing information about their HIV status.

Nevertheless, HIV self-testing does not provide final HIV result; instead, it is a screening test looking for the presence of HIV-1/2 antibodies or the HIV-1 p24 antigen.

Any reactive HIV self-test should be confirmed with an additional test performed at the health facility by a trained provider in accordance with national testing algorithms. HIV self-testing should be performed by clients who are aged 18 years and above.

HIV self-test kits should be available in different locations including workplace areas, pharmacies, condom distribution kiosks located in KP hotspots as well as at university campuses.

Pre-test counselling materials include visual instructions of how to use the test and interpret the result, as well as information on where and how to seek additional support, further testing and services for HIV prevention, care and treatment.

Post-test support may provide an opportunity for community members to disclose their result, and it also may include face to face counselling, peer support and referrals for additional services for HIV prevention, treatment and care.

1.3.3.3.2 Recency testing

Recency testing is an integrated approach of testing used to detect HIV early infection (Recent) or Long-Term HIV infection from already confirmed HIV-positive clients.

The objective of Recency testing is to identify new HIV infections among index cases, characterize them to inform prevention interventions.

Recency testing is performed on all confirmed HIV-positive from HTS to enhance index testing and partner notification services and prevent HIV transmission to uninfected partners.

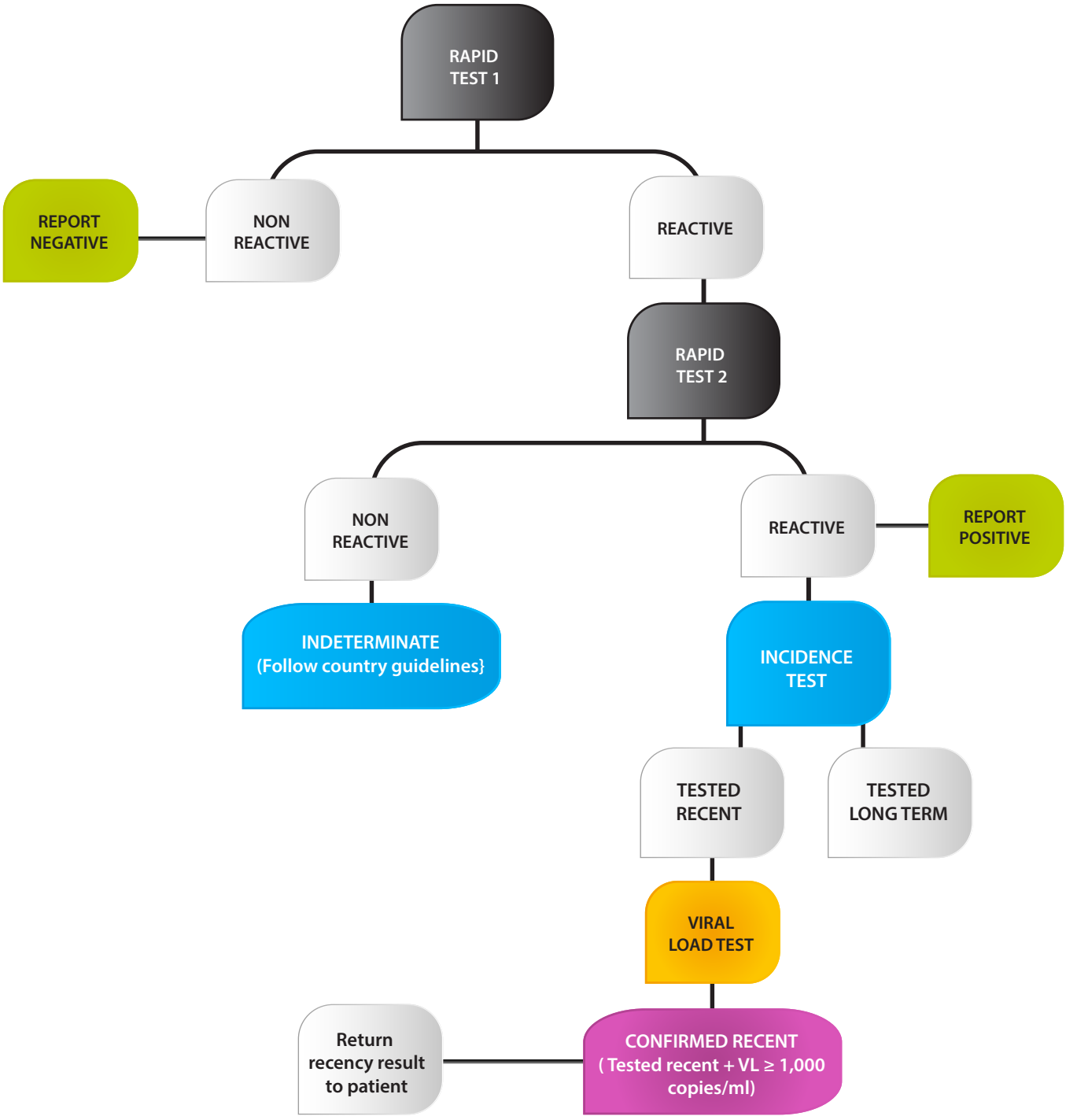
Client diagnosed as HIV-positive using the National HIV rapid testing algorithm is to be considered eligible by a counsellor and consented for Recency testing.

Blood sample is collected by venipuncture and referred to designated laboratory for testing using Recency testing algorithm (Refer to figure 02).

Recency test results are returned and communicated to the clients in a post counseling session.

Post counseling will be conducted by a trained counsellor to document the risk questionnaire for characterization of recent infections and handle any client who is HIV-positive and confirmed recent as an index case to accelerate active HIV case finding and provide prevention services as needed.

Figure 2: Recency testing algorithm



I.3.1.3.4. HIV Testing and Counselling in Specific Cases

The following paragraphs describe the procedures for HIV counselling and testing in the case of couples, adolescents, children, key populations and mobile VCT.

Healthcare providers should address the specific needs of each of these groups while also respecting the principles of HTS outlined in section 1.3.1.1

I.3.3.4.1 Couples Counseling and Testing

The counselling and testing of couples should involve a confidential dialogue between the two people in a couple and a counsellor. This enable the counsellor to give general information, assess the risk of HIV transmission, support mutually disclosure of their HIV Status and overcoming stress within the couple.
It is important to ensure that the process is entirely voluntary and no member of the couple is forced to take the test.
If the counsellor suspects any coercion on a member of the couple, the counsellor should encourage the couple to return after they have made the decision jointly and without any coercion. HTS should be offered to married and cohabiting couples, premarital couples, polygamous unions, and any other partnerships free of discrimination.

The couples HTS model was proven acceptable, feasible and effective. It allows identifying sero-concordant negative/positive and sero-discordant couples who are then linked to preventions and care and treatment services according their HIV status. It is recommended that the seroconcordant positive and serodiscordant couples whereby a mother is positive should be encouraging to test their children.

1.3.3.4.2 Infants and Children (young than 10 years)

HIV-exposed infants and children younger than 24 months should be :

- Tested within the first 6 weeks of birth so that those already infected with HIV can start ART.
- Follow HTS schedule for HIV-exposed infants up to age 24 months as outlined in the PMTCT guidelines in section 1.4.2.4.3
- Confirmed HIV Infected only by using virological tests because of the presence of persisting maternal HIV antibody in the child up to 15–24 months of age.

Children aged 2 up to 10 years should be tested using HIV rapid Test algorithm upon consent of parents or legal guardians.

Children of school age (7 years and older) should be informed of their HIV positive status in the presence of their parents or caregiver. The disclosure should be conducted after an attentive assessment of their cognitive and emotional maturity.

1.3.3.4.3 Adolescents (10-19 years)

Adolescents are often underserved and given insufficient priority in many HIV programs, leading to poor access and uptake of HTS as well as linkage to prevention and care. Sexually active adolescents are also vulnerable to HIV infection and should benefit from access to friendly, acceptable and effective HIV services, including HIV testing and counselling as well as HIV care and treatment for those who are HIV-positive.
To ensure access to HTS, Health facility should :

- Avail Youth friendly services to provide a comfortable environment to get HTS and other sexual Reproductive health services.
- Provide HTS to the Adolescent aged between 12 to 19 years old without Consent of their parents/guardians.
- Receive special post-test counselling from a trained counsellor about HIV risk reduction, available HIV Prevention and treatment services.
- Emphasize the potential benefits and risks of disclosure of their HIV status and receive support to determine, when, how and to whom to disclose.
- Encourage index testing and partner notification for those who tested HIV positive

1.3.3.4.4. Key Populations

Key populations including commercial sex workers, men who have sex with men, and serodiscordant couples are at high risk of HIV Infection.

To reach these groups at high-risk of HIV infection, Health Facilities should ensure that Innovative and tailored models for delivering HIV testing services are available as follows :

- Mobile/outreach HIV Testing Services,
- Home-based testing such as HIV self-testing
- Voluntary HIV Testing
- Provider-initiated Testing and Counseling,
- Couples and partner testing
- Index testing and Partner Notification.
- Community Health facility linkage for HIV testing trough peer education program

Outreach testing requires additional effort for linkage and enrollment into HIV care and treatment services. However, outreach organizers (health facilities, partners,…) have the responsibility HIV to ensure effective linkage of HIV positive clients into care and treatment. HIV negative individuals in key populations should receive strong risk reduction counselling and be encouraged to get tested for HIV every 12 months and stay in long term follow up. They should be supported to be linked to other prevention services such as VMMC, access to condoms and STI screening and treatment.

Table 0.1: Summary of HIV Testing & Counselling Recommendations

Who to Test	When to Test	Where to Test
People with signs or symptoms of HIV infection	Integrate in health care encounter	In all healthcare settings
Partners of people living with HIV	• As soon after partner diagnosis as possible; • For the negative person in serodiscordant couples, offer retesting every 12 months; • For the newly identified HIV positive, should be encouraged for Index testing and Partner notification	In all healthcare settings, Home Based(HIVST)

Families of individuals testing HIV- positive	As soon as possible after the family member is diagnosed Clients newly identified HIV testing, is encouraged to bring his/or her partner and children (if the mother is positive) if any for HIV testing services	In all healthcare settings, Homes based (HIVST), community outreach
Key populations: Men who have sex with men and sex workers	Every 12 months	In all healthcare settings, outreach services for key populations, and Home based (HIVST)
Pregnant women and their partners	At the first antenatal care visit. During labor, offer HIV testing to pregnant women with unknown status and retesting of all women who tested HIV negative during ANC	In antenatal care and maternity services,
Infants and children <24 months old	Early infant diagnosis at 6 weeks for all infants whose mothers are living with HIV, Determine the final infant HIV infection status after 24 months	In all health care settings especially Maternal and child, health services, Paediatric, Immunization clinics
Children with signs or symptoms of HIV infection or who have parents or siblings living with HIV	Integrate in health care encounter	In all healthcare settings (Outpatient Department, Inpatient services, Pediatric clinic.
Adolescents	Initial HIV testing and after HIV exposure	HIV Youth-friendly Centers Health care settings, STI clinics, outreach
Discordant couple in PMTCT program	HIV negative mother with HIV positive partner, mother will be tested every 3months until end PMTCT period. For those who have partner who are not virally suppressed, they should receive Pre exposure prophyalaxis.	In all health care settings

I.4. Prevention of mother to child transmission (PMTCT)

I.4.0 Key recommendations on PMTCT

- Each HIV-positive woman will be provided with counselling on family planning and get an access to a family planning method of her choice.
- Pregnant women attending ANC services should receive HIV testing services together with their male partners, preferably within the first trimester of pregnancy.

- HIV positive pregnant and breastfeeding women should be encouraged for index testing and partner notification
- Each pregnant woman whose previous HIV status is unknown or negative will be retested for HIV at the time of delivery.
- Women tested HIV positive during ANC or at the time of labor, will start anti-retroviral therapy immediately or as early as possible.
- Every pregnant/breastfeeding woman newly tested positive for HIV will start with ART regimen Tenofovir + Lamivudine + Dolutegravir
- The viral load test is done early in the third trimester of pregnancy considering a minimum period of three months after ART initiation.
- A Child born to a known HIV positive mother receives ART prophylaxis, Zidovudine and Nevirapine within 72 hours post-partum up to six weeks of life.
- The biological follow-up of an infant exposed to HIV includes PCR/DBS at 6weeks and serological tests at 9, 18 and 24 months.
- In case the child is tested HIV test becomes positive, the child must be initiated to ART as soon as possible.
- Regular growth monitoring of an HIV-exposed or infected child allows an early detection of growth retardation and allows to undertake appropriate management.
- Pre exposure prophylaxis is offered in the context of PMTCT to women in discordant couples, whose partners are not yet enrolled on ART or on ART without viral suppression and to HIV negative pregnant women practicing sex work.
- The regimen recommended for PrEP is a once daily Tenofovir and Lamivudine for the entire Pregnancy and breastfeeding period.

I.4.1. General Overview

In countries where breastfeeding is a common practice like in Rwanda, the probability of transmission of HIV from the mother to her child (MTCT) is very high in the absence of prevention interventions with ART. The probability of transmission varies between 20-45%, with 5-10% risks of transmission during pregnancy, 10-20% during delivery and 5-20% during breastfeeding. In countries where PMTCT programs are well implemented with the Option B+ provided to HIV-positive pregnant women, coupled with limited breastfeeding, the level of mother to child transmission for HIV has drastically reduced up to less than 2%.

Since 2012, Rwanda has been implementing the WHO Option B+. This means starting ART for all HIV positive pregnant women irrespective of the CD4 count, exclusive breastfeeding protected by ART, and mothers continuing ART as a lifelong treatment. Recent RBC program data (2016-2017) shows that, the Option B+ implementation has contributed to reduce the MTCT rate at 18 months up to 1.5% in a cohort of HIV exposed infants.

I.4.2. PMTCT Pillars

The PMTCT program is based on a comprehensive four-pronged approach :

1. Primary prevention of HIV infection among women in childbearing age
2. Preventing unintended pregnancies among women living with HIV
3. Preventing HIV transmission from women living with HIV to their infants
4. Providing appropriate treatment, care and support to mothers living with HIV, their children and families

HTS for pregnant women is a key component in all antenatal services. All pregnant mothers attending ANC are recommended to receive HTS with their partners, at the time of their first ANC visit preferably within the first trimester. Strong emphasis will continue being put in male partner involvement in PMTCT cascade.
In addition to HIV testing at the first ANC visit, it is recommended that retesting occur for the pregnant woman at the time of labor. The rationale of re-testing is the risk of acquiring HIV infection among women who previously tested HIV negative during pregnancy and the possibility of seroconversion before delivery. Refer to annex 1.1. Table summarizing package of activities in PMTCT.

I.4.2.1. Prevention of unwanted pregnancies

All HIV-positive women should be provided with counselling on family planning and have an access to family planning methods. Contraceptives are an important part of a woman's reproductive rights and are key strategy for PMTCT, as it helps to prevent unwanted pregnancies. Every health facility providing PMTCT services should also provide family planning services.

Generally, it is safe to use all contraceptive methods with ARVs. However, the patient's clinical status should be reviewed and an Intra Uterine Contraceptive Device (IUCD) should not be newly inserted if the patient is classified as WHO clinical stage 3 or 4. If a patient in WHO clinical stage 3 or 4, already has an IUCD, she can continue using it with a close clinical follow up.

The use of condom among women who are HIV infected remains an important strategy for preventing transmission of HIV to uninfected partners and offers a dual protection for HIV negative women in discordant couples.

I.4.2.2. Pregnancy Desire

It is necessary to regularly discuss pregnancy desires with HIV-positive female patients during clinical follow up because most patients will not talk about it spontaneously. Ultimately, it is the woman's right to choose whether or not she would like to become pregnant.

The healthcare provider together with the client should have more than one counselling session, preferably together with the male partner, focusing on the pregnancy desire, associated risk on mother's health, and the risk of mother-to-child HIV transmission. The healthcare provider should accompany the woman/couple in their decision making process.

If the woman/couple decides to bear the pregnancy, the healthcare provider will conduct close follow up of the mother in order to ensure optimum clinical outcome (viral load suppression, absence of opportunistic and sexually transmitted infections) and decide the less risky time for conception.

In a discordant couple, the desire for pregnancy should consider seriously the risk of HIV transmission to the HIV-negative partner. The early initiation of ART and special adherence follow-up to ensure sustainable viral suppression for the HIV-positive partner should be provided. The health care provider should also assist the couple to estimate the woman's fertile period.

It is recommended that conception is attempted during this period, in order to limit repetitive attempts that increase the risk of HIV transmission.

In summary, we need to ensure that the woman understands clearly, Information on potential risks to the

mother, baby and the partner before deciding for eventual pregnancy. The followings are key considerations to be evaluated for a safe pregnancy.

A. When a HIV-positive woman wishes to become pregnant :

- **Is the partner's HIV status known and is he involved?**
- **If the partner HIV positive, assess both partners for :**
- Viral load suppression
- Adherence to treatment
- Comorbidities and opportunistic infections

- **If the partner is HIV-negative, advise the following :**
- Voluntary medical male circumcision, and avoid unprotected sex within the next 6 weeks
- Pre-exposure prophylaxis when the HIV partner unstable on ART

B. When an HIV-negative woman in discordant couple wishes to become pregnant

- **Is the partner involved?**
- **Given that the partner is HIV-positive, assess for :**
- Viral load suppression
- Adherence to treatment
- Comorbidities and opportunistic infections

I.4.3. Antenatal and during delivery follow up

The follow up of HIV infected pregnant woman should start during ante-natal period. Initiation of anti-retroviral drugs and counseling on ART adherence must be followed by a couple counseling on delivery and postnatal process.

I.4.3.1. Pre-delivery counseling

The counseling session is addressed to all HIV positive pregnant women & women in discordant couples and their husbands. It will be conducted in the third trimester of pregnancy preferably during the fourth ante-natal care visit.
The counseling session shall focus on the following :
- Adherence to ARV treatment
- The risk of delivering out of health facility set up
- Disclosure of HIV status to health care workers during labor
- Information on ART prophylaxis for the newborn
- Options and period for breastfeeding
- Family planning

I.4.3.2. Labor and delivery

Interventions during labor and delivery aim at minimizing HIV transmission risks to the newborn. Invasive procedures (Forceps, Vacuum extraction, and episiotomy) during delivery should be avoided whenever possible. Health care providers should pay attention and take action in the case of premature rupture of membranes and prolonged labor. The early neonatal management of the HIV exposed newborn is the same as for other non HIV-exposed infants except the ART prophylaxis.

I.4.3.3. The use of ART drugs in PMTCT

In order to reduce the transmission of HIV from infected mothers to their children, the use of ARVs is crucial. Since 2012, Rwanda initiated the option B+ as a strategy to eliminate this vertical transmission of HIV. It is recommended that any HIV-positive pregnant woman receives a continuum of care including ART in the same health facility. This should be done also for the HIV positive partner of a pregnant woman in discordant couple. Initiation of ART should start as early as possible following the outlines below.

I.4.3.3.1. ART for HIV pregnant woman

The use of ART for HIV pregnant women will depend on whether she was already enrolled or not in HIV program. The following situations are possible during pregnancy :

1. If the HIV-Positive pregnant woman is already enrolled in HIV program, we will consider the following:

- Adherence to the current ART regimen
- Viral load suppression as per the most recent viral load test results
- Consider viral load result as 'recent' if it is less than six months at the first ANC visit
- If the recent viral load last for more than six months at the first ANC visit, then, request immediate control of viral load
- It's mandatory to repeat the viral load test for all pregnant women not tested at the first ANC, before the third term of pregnancy (Preferably at 6 months of pregnancy)
- If the woman is virally suppressing, she will keep the current ART regimen.
- If the woman is not virally suppressing (>200 copies/ml), she will be switch to a Dolutegravir based regimen plus two NRTIs.
- The switch to Dolutegravir based regimen will be conducted concurrently with the adherence counseling for patients with documented poor adherence.

2. If the HIV-Positive pregnant woman is newly enrolled in HIV program

- The woman is immediately enrolled to ART regimen
- The preferred ART regimen is **Tenofovir + Lamivudine + Dolutegravir (TDF+3TC+DTG)**
- Any woman with impaired renal function or likely to have impaired renal function will receive ABC + 3TC + DTG

Category	Initial ART Regimen	Substitution ART regimen
Pregnant woman newly tested in ANC	TDF+3TC+DTG	
Pregnant woman on ART before pregnancy with VL<200 copies/ml	TDF/ABC/AZT+3TC+ EFV/NVP	TDF/ABC+3TC +EFV/NVP
	TDF/ABC/AZT+3TC+ LPVr/ ATVr	TDF/3TC /AZT +3TC+LPVr/ATVr
Pregnant woman on ART before pregnancy with VL>200 copies/ml	TDF/ABC/AZT+3TC +EFV/NVP	TDF/ABC+3TC +DTG
	TDF/ABC/AZT+3TC +LPVr/ATVr	TDF/3TC/AZT + 3TC+DTG

NOTE: Doses are the same as in adults' HIV Treatment (see details in care and treatment chapter). Monitoring of renal function is important.

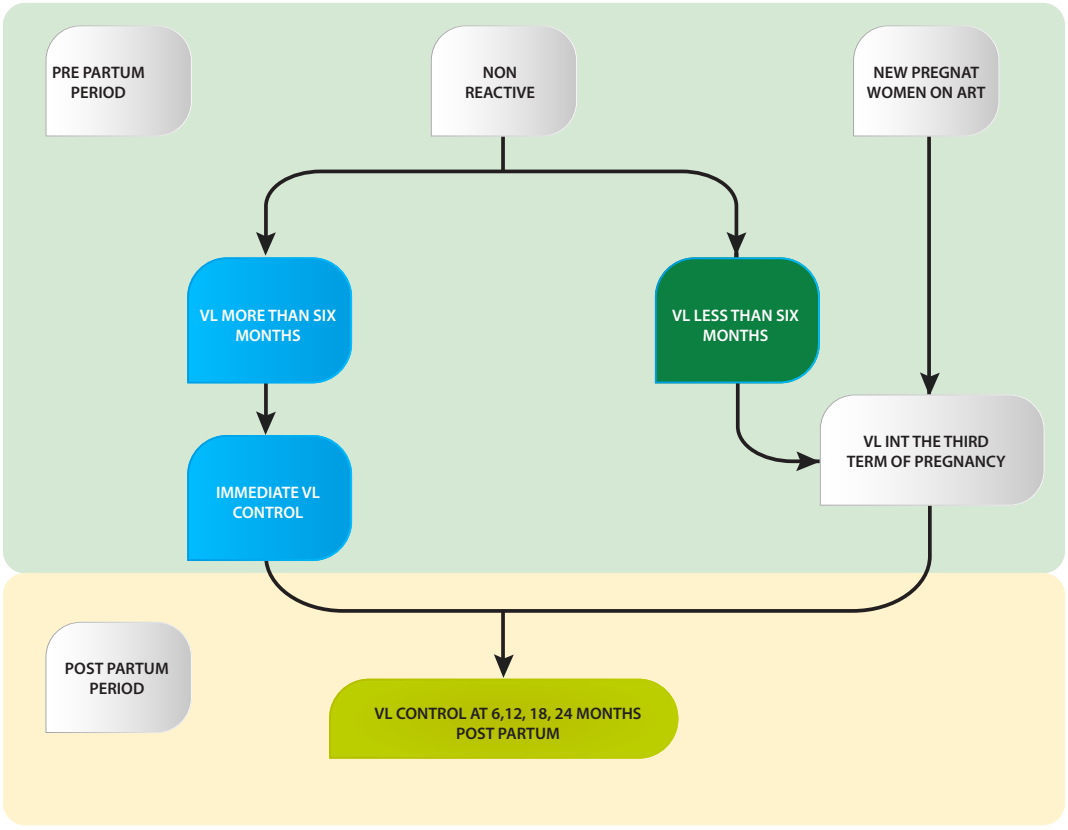
1.4.3.3.2 The viral load monitoring for pregnant and breastfeeding woman

The viral load monitoring for pregnant and breastfeeding woman will be done as follow:

1. If the HIV-Positive pregnant woman is already enrolled in HIV program, we will consider
- The viral load result as 'recent' if it is less than six months at the first ANC visit
- If the recent viral load last for more than six months at the first ANC visit, then, request immediate control of viral load
- It's mandatory to repeat the viral load test for all pregnant women not tested at the first ANC, early in the third term of pregnancy (Three months before the expected date of delivery)

2. If the HIV-Positive pregnant woman is newly enrolled in HIV program, the viral load test will be done early in the third term of pregnancy considering a minimum a three-month period after ART initiation.
3. In the post-partum period up to 24 months, the viral load monitoring will be done every six months, respectively at 6, 12, 18 and 24 months post-partum.

Figure 3: viral load monitoring in PMTCT



I.4.3.3.3. ART for HIV-Negative Pregnant Woman in a SDC

An HIV-negative woman in a serodiscordant couple (i.e., the partner is HIV positive and the woman is HIV-negative) will need to be tested for HIV every three months, as well as at the onset of labor.

- If she is shown to be HIV-positive: refer to the section 3.5.1(2) on ART for HIV positive pregnant woman, newly enrolled in HIV program.
- If she remains HIV-negative, she will receive during labor or in case of premature rupture of membranes: A single dose of TDF + 3TC + EFV and continue with TDF + 3TC (one combined tablet per day) for one week after delivery.

I.4.3.3.4. HIV Exposed Infant Prophylaxis

A child is considered as 'exposed to HIV', if he/she was born from an HIV positive mother. The initiation of infant prophylaxis will depend on the time the mother was diagnosed HIV positive. Children born to HIV negative mothers in discordant couple will not receive any prophylaxis as far as their mothers remain HIV negative.

Infant born to a known HIV-positive mother

All children born to a known HIV positive mother (before or during the labor) will receive Zidovudine and Nevirapine (AZT+ NVP) within 72 hours after birth up to six weeks of life. The baby will also start Cotrimoxazole prophylaxis at the age of 6 weeks until the final confirmation of HIV negative status at the age of 24 months.

Infant born to a mother diagnosed for HIV after delivery

If the mother is identified to be HIV-positive at the time of breastfeeding, she should be put on ART as Referred to section 3.5.1 (2). The child will start a combined AZT and NVP for six weeks after mother's initiation on ART. At the end of 6 weeks ART prophylaxis, the child will also start Cotrimoxazole prophylaxis until the final confirmation of HIV negative status at 24 months of life.

I.4.4. Postnatal follow up for the Mother-Child Pair

The mother-child pair needs a close follow up to ensure the vertical transmission will not occur during delivery and the breastfeeding period. The success of a mother child pair follow up will depend on the quality of counselling given to the mother, the family and community support received, and the efficiency of the follow up done by the health care team.

The follow up of the mother-child pair will include :

1. Counselling on infant feeding and nutrition
2. HIV positive mother post-delivery follow up
3. Early Infant diagnosis (EID)
4. Infant growth monitoring and evaluation of nutritional status

I.4.4.1. Infant feeding and nutrition

Advice on a healthy and balanced diet for the child and the mother must be given to the mother during the monthly visit in the HIV clinic. Counselling on nutrition and infant feeding should have begun as soon as pregnancy test results were announced and will continue through postnatal counselling.
The recommended feeding methods for the infant are as follows :

- Exclusive breastfeeding until 6 months
- Introduction of a healthy, balanced, and appropriate complementary food will begin at six months and together with continuation of breastfeeding.
- Breastfeeding will not exceed the maximum duration recommended. The weaning period should be done gradually from the age of 15 months to a maximum of 18 months; advice for nutritional are necessary during this period.
- The final HIV confirmation test should be done at the age of 24 months.

If a mother chooses not to breastfeed, the following is recommended :

- Make sure that a safe and adequate replacement food is available.
- The health care provider should give appropriate advice on how to use substitute milk, healthy and balanced complementary foods given starting at six months.
- For the first six months of life, the child should receive exclusively replacement feeding.
- Provide clear explanations on how to avoid infections due to poor hygiene of the feeding bottles or cups. The woman should know how to clean bottles and cups using boiling water. Access to clean water must be advised on before considering replacement feeding.

I.4.2.4.2. HIV positive mother post-delivery follow up

The post-delivery follow-up of an HIV infected mother, should be conducted at a monthly basis and correlated with the follow up his/her HIV exposed infant. For each clinical appointment the health care provider must assess :

- The mother-child pair clinical follow up occur simultaneously
- The ART adherence continuously ensured
- The mother's viral load is done every six months, and prompt action taken as per results
- The mother has a family planning methodology
- The mother's nutrition assessment and provision counseling and/or food supplement when necessary.

I.4.2.4.3. Early infant diagnosis (EID)

HIV exposed children should be closely monitored, clinically and biologically, in order to diagnose the HIV transmission. If the HIV test becomes positive, the child must be initiated to ART as soon as possible.
The biological follow-up includes PCR/DBS at 6weeks and serological tests at 9, 18 and 24 months. Refer to figure 3 HIV testing among HIV exposed Infants.
The first appointment at 6weeks is crucial. During this appointment, the child receives the following :

- Immunization
- PCR/DBS test
- start cotrimoxazole prophylaxis
- Monitoring of growth and psychomotor development.

The clinical monitoring will continue every month and should be synchronized with immunization schedule whenever possible. The identification of HIV-exposed children in the vaccination service will be facilitated by the immunization card integrating information about the mother's HIV status.
The first PCR test will be performed at the age of 6 weeks and if the result is negative, the child will continue the monthly clinical follow until the age of nine months where a serological test will be performed. If the six weeks PCR result is positive, the child will be initiated on ART and a control PCR will be immediately requested. Results of the control PCR will, either, confirm the HIV infection (If the two PCR are concordant) or a third PCR test will be needed (if the two PCR results are discordant). The results of the third PCR test will confirm or not the child's HIV infection.
At the age of 9 months, an HIV serology test will be performed. With the negative result, the child will continue the monthly follow up to 18 months. The positive result will need to be confirmed by a control PCR test, which will be requested immediately. If the PCR result is negative, the child will be confirmed HIV negative. If the PCR result positive, the child will be confirmed positive and enrolled on ART. The same process will be conducted at 18 months and 24 months where the final HIV confirmation test will be conducted.

It is important to stop breastfeeding at 18 months in order to be certain of the child's HIV negative sero-status at the age of 24 months.
When the result's accuracy is suspected for any reason (e.g. suspected that mother did not stop breastfeeding 3 months before the final HIV test), the health care provider should perform another rapid test for a final confirmation, three months after an estimated complete cessation of breastfeeding.

Figure: 4. Algorithm for HIV testing among HIV exposed infants

It is worth noting some particular situations :

- When the result of an HIV-exposed infant test is 'inconclusive' at any serological tests used, a PCR/DBS test should be immediately performed for confirmation purpose.
- For any HIV exposed infant enrolled late in PMTCT between the age of 6 weeks and 9 months, immediate PCR/DBS will be performed, then follow the process described in section 3.6.3
- For any HIV exposed infant enrolled late in PMTCT after 9 months, immediate HIV serology test will be performed then follow the process described in section 3.6.3

I.4.4.4. Infant Growth Monitoring and Evaluation of Nutritional Status

Regular growth monitoring is critical for clinical follow up of an HIV-exposed or infected child. It allows an early detection of growth retardation and to undertake appropriate management. This allows the child to realize his full growth and development potential. The following Anthropometric measures are most commonly used for growth monitoring in children :

- Weight: The naked or lightly dressed (without shoes) child is weighed with a well-calibrated scale.
- Length/Height: The Child under two years should be measured lying down; older children should be measured upright using a height board. Never use a tape measure.
- Head circumference: This should be measured in all children less than five years. A tape measure should be used by passing around the frontal and occipital bones.

The first 2years of life is a period of rapid growth in the childhood. The average child's weight at birth is about 3kg. The child doubles his/her birth weight after 6 months and triples it after one year. At 2 years, he/she weighs about 12kg on average. The child's height is about 50cm at birth. It increases to about 75cm after one year and to 85cm at two years. The head circumference is between 33cm and 36cm at birth. It increases to about 45cm after one year and to 47cm after two years.

All HIV-exposed infants should be thoroughly examined (weight, size, neurological development, suspicious signs of infection) every month until the age of 24 months. During the HIV exposed infant follow up, the completion of growth charts at each clinical visit is mandatory. The trend in the weight and height growth should be captured monthly using growth curves in the child's file. At the health center level, In case the child shows growth retardation, neurological deficits or suspicious signs of infection (fever, impaired general condition, dyspnea, etc.), he/she will be referred immediately to a doctor for appropriate management.

1.4.5 Syphilis screening and treatment for pregnant women

Syphilis is transmitted from mother to child (congenital syphilis) if not detected and treated sufficiently early in pregnancy.

Congenital syphilis can cause early foetal death (stillbirths), neonatal /preterm deaths/low-birth-weight. To cope with this, it is recommended to screen all pregnant women for syphilis during the first antenatal care visit using Rapid Plasma Reagin (RPR) test.

For women who didn't attend antenatal care visits, this screening will be done in maternity before delivery. Pregnant women screened positive for syphilis will be treated together with their sexual partner (husband) using Benzathine penicillin G 2.4 million units once intramuscularly over procaine Penincilin 1.2 million units intramuscularly once daily for 10 days

I.5. HIV prevention among discordant couples

Evidence-based interventions package for HIV serodiscordant couples can be provided through facility based and/or community interventions. Although these interventions are delivered in a package, providers must ensure that they contextualize the specific, particular needs of the couple since different couples may have different needs.

The objectives of these interventions are :

- To protect the negative partners from HIV infection.
- To provide care and treatment to HIV positive partners.
- To protect future children from HIV infections.
- To offer the appropriate HIV prevention package for children and other family members of the HIV-positive individuals.
- To support the prevention of unwanted pregnancies in discordant couples

The overall intervention package for discordant couples consists of the following:

- Risk reduction counselling and condom provision.
- Initiation of Pre exposure prophylaxis for those whose their HIV positive partner is not yet on ARV or are not virally supplessed
- Family planning counselling and service provision.
- Repeat HIV testing for the uninfected partner every 12 months.
- Care and treatment for the HIV-positive partner.
- STI screening and treatment.

In case of a pregnant HIV negative partner :

* The HIV testing shall be done every three months
* A pre-exposure prophylaxis should be offered in case of non-viral suppression for the positive partner.
* At labor, a single dose of TDF+3TC+EFV will be offered, followed by TDF+3TC for seven days for all women who are not taking the pre-exposure prophylaxis.

The health care provider should encourage the discordant couple follow up in the same health facility and synchronize the pharmacy refill schedule for the positive partner with the negative partner appointment whenever possible. A three months counseling and psycho-social support shall be offered for the discordant couple. During this counseling session, the file for HIV negative discordant partner will be completed.

I.6. Pre and Post-exposure prophylaxis

I.6.1. Pre-exposure prophylaxis

1.6.1.1 Pre-exposure prophylaxis in the context of PMTCT

Pre exposure prophylaxis is offered as part of an enhanced comprehensive HIV prevention approach, for female sex workers at high risk of HIV infection and HIV negative person in discordant couple relationship. In our context, female sex workers considered at high risk of HIV infection are those who are not consistently use condoms

HIV negative partner in discordant couple, with partners not yet enrolled on ART or partners on ART without viral suppression (<200 Copies/ml

It is recommended to offer prophylaxis of anti-retroviral drugs (combination of a once daily Tenofovir and Emtricitabine/Lamivudine) for the entire period of HIV exposure.

Initiation of PrEP should be done after a mutual consensus with the mentioned targeted groups. Adherence counseling must emphasize on the proper use of ART. Laboratory assessments (creatinine test) is mandatory before initiation and every six months on ART and repeat HIV testing every six months. In case of contra-indication Tenofovir may be replaced by abacavir in PreEP regimen.

For HIV positive partners on ART, their viral load test shall be done regularly to ascertain HIV transmission risk to their female partners. All HIV negative partners in discordant couple whose male partners have not virally suppressed (>200 copies/ml) shall be eligible to PrEP as per the previous paragraph. All sex workers who are not consistently using condoms will be on PrEP irrespective of the serostatus of their partners.

I.6.1.2. PrEP for safer pregnancy

HIV-negative partner in discordant couple remains at high HIV risk during the period of conception when the partner living with HIV is either not on ART or on ART but not virally suppressed (including partner recently starting ART, whose full viral suppression may take up to six months). Offering PrEP during this time could decrease the risk of viral transmission to the HIV-negative partner and reduce anxiety about HIV transmission at a time when the couple is not always using condom to prevent HIV transmission. The decision whether to take PrEP should always be consensual, following discussion on the risks and benefits with the health-care provider.

I.6.2. ART for Post-Exposure Prophylaxis (PEP)

Every person who has experienced accidental exposure to blood/body fluids, victim of sexual assault, or accidental sexual exposure (i.e., condomless, sex with a known HIV-positive person; condom breakage) must have access to an early evaluation of the risk of HIV infection and antiretroviral prophylaxis if indicated.

This is why it is necessary to have PEP services that work 24 hours a day. Evidence shows that initiating ART prophylaxis soon after exposure to HIV reduces the risk of HIV infection by about 80%. Post-exposure prophylaxis (PEP) is a short-term ART to reduce the likelihood of acquiring HIV infection after potential exposure.

Post-exposure prophylaxis should be provided within 72 hours of exposure and ideally as soon as possible. An HIV serology test should be performed on the exposed individual as soon as possible (ideally within 48hours) following the HTS procedures outlined in section 2.1.3. If the test result is negative, the guidelines below should be followed for the administration of PEP. Serologic monitoring will be continued, in particular after one month, three months and at the end of sixth month.

I.6.2.1. Special Considerations in Cases of Accidental Exposure to Blood (AEB) or Other Biological Fluids

In case of accidental exposure to blood, always clean the exposed area immediately. In case of exposure through needle stick or skin injury, clean the wound immediately with clean water and soap.

In case of splash on the mucous membranes (particularly the conjunctiva), rinse at least for 5 minutes with copious amounts of water or preferably physiological saline and do not apply disinfectant on the mucous membranes.

The actual risk for a given patient must be evaluated by one of the health care providers from the health facility. This evaluation includes:

- The severity of the exposure, which is directly linked to the depth of the wound and the type of needle that was responsible for the injury (Venepuncture needle, needle for injection, non-sharp instrument).
- External contact of secretions with the skin or mucosa (splash), the risk is higher with blood than with any other body secretions (amniotic fluid, serous fluid).

The source, person with the exposure, should be assessed on his or her HIV status, clinical and immunological status and history of ART. If the HIV status is not known, it is important to establish it with his/her free consent per guidelines outlined in section 1.2.3.1 If the HIV status of the source person cannot be obtained within 4hours, prophylaxis should be started immediately. If eventually the source person of the exposure is proven to be HIV-negative, then ARV prophylactic treatment should be stopped.

The post-exposure prophylaxis (PEP) depends on degree of exposure, and HIV status of the source of exposure as per the following table:

Table III. Recommendations on Post Exposure Prophylaxis in Cases of Occupational Exposure

Source	Exposure Severity		
	Massive	Moderate	Minimum
HIV-positive with low CD4 or Opportunistic Infections	Recommended	Recommended	Recommended
HIV-positive and asymptomatic	Recommended	Recommended	Recommended
HIV status unknown, but risk factor for HIV (≥ 1 risk factor)	Recommended	Recommended	Discuss
HIV status unknown or unknown source without risk factors	Recommended	Discuss	Discuss

Prior to initiation of PEP an informed consent form should be signed by the client.

I.6.2.2.Special Considerations in Cases of Sexual Assault or Rape

In case of rape, the provider must first follow the HIV counselling and testing steps described in the above paragraphs before giving prophylactic treatment.

PEP should be offered to the sexual assault victim once the clinician has assessed all the factors involved in the likelihood of HIV transmission (probability of HIV positivity in the assailant, probability of HIV transmission, PEP might help the victim gain a sense of control and decrease their anxiety about acquiring HIV.

Consider HIV post-exposure prophylaxis for survivors of sexual assault presenting within 72 hours of the assault. In addition to HIV post-exposure prophylaxis, women should be offered emergency contraception to prevent unintended pregnancy within 1 week of exposure.

Table IV. 1. Management of Sexual Exposure to HIV

Source Person HIV Status	Exposed Person HIV Status	Recommendation
Positive or negative	Known positive	No prophylaxis is indicated, ensure enrolment in HIV treatment and care, provide emergency contraception if the exposed is female and accepts.
Known positive	HIV-negative or unknown	Immediate HIV Rapid test done on the exposed person. • If HIV-negative, then counsel and offer prophylaxis • If HIV-positive, ensure linkage to HIV treatment. Provide emergency contraception if the exposed is female and accepts.
Unknown	HIV-negative or unknown	Immediate HIV Rapid test done on the exposed: • If the exposed is HIV negative, then counsel and offer prophylaxis; • Provide emergency contraception if the exposed is female and accepts.

I.6.2.3. ART Prophylaxis in PEP

The current recommended duration of post-exposure prophylaxis for HIV infection is 28 days. Treatment should start as early as possible, within the first 4 hours following the exposure, without waiting for results of HIV serology of the source person. A limit of 72hours is reasonable in seeking maximum efficacy, however the sooner the better.

The recommended post-exposure prophylaxis drugs are based on the current second and first line regimen :

1. TDF + 3TC / FTC + ATV/r
2. AZT + 3TC/ FTC + ATV/r (If no TDF or a contraindication)

NB: The recommended ART Prophylaxis is the same in rape/sexual assault and exposure to biological fluids

Table IV.2: Follow-up of Person on Post-Exposure Prophylaxis

Test	Source	Exposed persons			
	Baseline	Baseline	1 month after exposure	3 months after exposure	6 months after exposure
HIV Test (Serology)	√	√	√	√	√
Hepatitis B serology	√	√	-	-	√
Hepatitis C antibody	√	√	-	-	√
Syphilis serology	√	√	√	-	√
Gonorrhea	√	√	√	-	-
Chlamydia	√	√	√	-	-
Pregnancy	-	√	√	-	-
Serum creatinine		√	√	-	-

I.7. HIV prevention among Key Populations

I.7.1 Definitions

Key populations or 'Key populations at higher risk of HIV exposure' are people most likely to be exposed to HIV or to transmit it. They are key to the epidemic and key to the response. They are often affected, stigmatized and marginalized, and disproportionately affected by HIV. key populations for HIV include men who have sex with men and transgender persons, people who inject drugs, and male and female sex workers (M/FSWs).

In Rwanda, based on available evidences, key populations targeted in the program are female sex workers and their clients, men who have sex with men, and serodiscordant couples. Other vulnerable and priority groups targeted are adolescents and youth especially young women aged 15-24 years, prisoners, mobile populations, People with disabilities, Tuck drivers, fisher men and fisher folks, people in uniform and refugees.

I.7.2. Services for key, vulnerable and priority populations

To respond to HIV among key populations, delivery of a combination of interventions is essential. Health facilities should deliver comprehensive package of services as outlined below:

1. HIV Testing and Counseling
2. Index testing and partner notification
3. Referrals to HIV treatment and care
4. Provision of preeposure prophylaxis as appropriate
5. Behavior interventions through peer education
6. Sexual and drug use assessment, and risk reduction counseling

7. Condom and water based lubricant promotion and distribution
8. STI screening and treatment
9. Provide friendly services to address stigma and discrimination
10. Linkages to other health, social, and legal services

I.7.1.2. HIV Testing and Counseling for Key population

Health facilities should offer HIV testing and counseling services to key populations to allow them to know their HIV status in order to receive appropriate HIV preventions, treatment and care services. Those who test HIV negative and still at high risk of HIV, should be advised to be retested on yearly basis. Furthermore, those who test HIV positive should be linked to treatment and care services.

To increase the coverage of HIV testing, a variety of approaches should be used by health facilities as follows :

- Health facility, community and home (HIV self-testing) based testing
- Patient (VCT) and provider (PIT) testing
- Index testing and partner's notification
- Couple HIV testing

I.7.2.2. Referrals to HIV care and treatment

Upon HIV positive diagnosis, health facilities should :

- Initiate ART at the earliest possible point as it is a critical intervention for key populations.
- Provide support for adherence and retention designed around the needs of populations to keep them in HIV care continuum
- Implement combined innovative approaches to increase successful linkage to treatment and care and PMTCT services as well.
- All key population programs need to ensure adequate monitoring of linkages to services.

1.7.2.3 Behavior interventions through peer education

Behavior interventions and Peer outreach service relies on community members to reach key and priority populations with HIV prevention information and linkage to clinical services. These services should emphasize on risk reduction based on testing, counseling and community provisioning of condoms and lubricants.

1.7.2.4 Sexual and drug use assessment, and risk reduction counseling

Taking a sexual and individual drug using history ensures that service providers know and do not assume the needs of their clients. Risk reduction counselling is an effective intervention for key populations, whether delivered through peer outreach or in health facility settings and can address both drug and sexual risk behaviours, as appropriate.

1.7.2.5 Condom and water based lubricant promotion and distribution

Health facilities should ensure a consistent supply and availability of quality condoms as well as water

based lubricants compatible with condoms especially for men who have sex with men.

1.7.2.6 STI screening and treatment

Existence of an STI may facilitate sexual transmission and acquisition of HIV. Routine STI assessment and treatment should be an integral component of key population package of services. Key populations (especially for female sex workers and men who have sex with men) should get screened for STIs every 3 months.

1.7.2.7 Linkages to other health, social, and legal services

Key populations and other vulnerable populations should be provided with or referred to other health services including family planning, primary health care as well as psychosocial and legal support.

I.8. Combination of HIV prevention

I.8.1. Biomedical Prevention

I.8.1.1. Condoms

Condom use is a critical element in a comprehensive, effective, and sustainable approach to HIV prevention across the continuum of response. Condom distribution and promotion should be key components of all packages of interventions for all populations, where appropriate. Male condoms reduce heterosexual transmission by at least 80% and offer 64% protection in anal sex among men who have sex with men, if used consistently and correctly.

Fewer data are available for the efficacy of female condoms, but evidence suggests they can have a similar prevention effect.

Condom programming should engage the public, social marketing and private sectors in condom distribution and promotion and should include a plan for increasing sustainability of condom programming. Social marketing programs should provide subsidized and marketed commodities to poor and vulnerable populations where the private sector does not supply these commodities. Free public sector condoms should primarily be distributed to population segments lacking disposable income and/or those most at risk of HIV transmission or acquisition.

Specifically, for key populations (female sex workers and men who have sex with men), condom programming and distribution should go hand in hand with the distribution of water-based lubricants.

I.9.1.2. Voluntary Medical Male Circumcision (VMMC)

Three randomized controlled trials have demonstrated that VMMC reduces men's risk of HIV acquisition by approximately 60 percent, making it an effective HIV prevention intervention. WHO/UNAIDS issued normative guidance in March 2007, recognizing that VMMC is an additional important intervention to reduce the risk of male heterosexually acquired HIV infection and that VMMC should always be implemented as part of a comprehensive HIV prevention package.

VMMC should be provided by using classic surgical method or a device based method (PREPEX).

Clients seeking circumcision service should be informed about the availability of the aforementioned circumcision methods and related eligibility criteria. Nevertheless, every client should make his own choice based on received information and clinical evaluation findings.

I.8.1.2.1. Eligibility criteria for VMMC methods

Eligibility criteria for both surgical and device based method (PrePex) include absence of STIs, bleeding disorders, uncontrolled hypertension and diabetes, Penile Cancer, Scar tissue at the frenum, Peline warts,- Balanitis xerotica obliterans, allergy to anesthesia and other abnormalities of the genitalia such as hydrocele causing swelling. In addition, for prepex device should not be used to client with allergies to rubber/ plastic, hypospadias, epispadias, phimosis, paraphimosis, tight or torn frenulum and adhesions.
Currently the PrePex device is recommended to be use on client specific age starting from13years and above. For Surgical method is applied for all age.

The VMMC package for both surgical and non-surgical method includes:
1. Clinical evaluation of the client
2. The provision of HTS services to clients aged 15 years and above;
3. Administration of tetanus vaccine

- For non-surgical method (PrePex device), 2 doses for tetanus vaccine will be administered. The first dose on day 0 and the second dose after 4 week. The device placement should be done 2 weeks after the second dose.
- For surgical method, a single tetanus vaccine dose should be administered at the beginning of the surgical procedure. (unless proof of updated vaccination) (acceptable timeline for TTCV)

4. Informed consent should be used to ensure that the client has been informed about the benefits and potential side effects of male circumcision. For children aged below 18 years, a consent from a parent or a legal guardian will be required prior to any VMMC procedure.

After the circumcision procedure, the client should:
- Receive all the information regarding possible complications to include bleeding, important pain, difficulty urinating, swelling or local infection.
- Avoid any sexual intercourse or masturbation for at least 6 weeks after VMMC.
- Receive education on clean wound care after circumcision especially danger of applying substances that may contain Clostidium Tetani such us animal dung poultices or herbal remedies to wounds.
- Return at the health facility after 7days for device removal and 2days after removal for wound dressing in case of circumcision device was done,
- Return at the health facility in 2 days after circumcision using surgical method for wound dressing and return back after 2days for the second wound dressing.
- Receive the prevention information for STIs, promotion of safer sex practices and the provision of condoms

In case of complications beyond the health facility competencies or by the client's request, transfer should be done according to the referral system applicable in Rwanda

I.8.1.2.2. VMMC Setting

VMMC package is offered in public and private health facilities fulfilling the conditions required by the Ministry of Health:

1. To have an operation room for at least minor surgery,
2. To have at least one health care provider trained(nurse or medical doctor) on VMMC procedures
3. To have necessary equipment for sterilization of materials

4. To have necessary materials for the performance of male circumcision (depending to the VMMC method),
5. To respect scrubbing and infection prevention principles a specially skin preparation of the genital area

I.8.1.2.3. New-born Circumcision

Rwanda has been a traditionally a non-circumcising society with a low prevalence of male circumcision among men age 15-59. However, this prevalence has progressively increased from 13% to 30% between 2010 and 2015 (RDHS 2015). Efforts to increase the male circumcision prevalence in the country took into account all age groups of the population. For young children, these efforts sometimes face obstacles such as pain related to the procedure and parents' fear of potential risks for their children. The introduction of an infant specific program in the country aims at breaking such barriers and normalizing male circumcision.

The Early Infant Male Circumcision (EIMC) in the country is using Mogen clamp procedure. This is a clamp-based procedure validated by the WHO and performed on infants between 7 and 60 first days of life. It has several advantages as it takes less time to be performed, the wound heals quickly, the procedure is cost effective, and it causes less pain to the infant.

Early infant circumcision should be done if the infant is healthy, full-term, and weighs 2,500 g or more. Only babies who have normal physical examination should be considered for male circumcision.
Contraindications for EIMC include any known hematological disorders and jaundice. In addition, any congenital abnormality on the genitalia is also contraindicated.

I.8.1.2.4 Monitoring and Evaluation System

A process is in place to monitor and evaluate the quality and safety of services which includes a process for data collection and analysis, actions taken to improve care and services, and the monitoring of the effect of these actions. There should be a system for prompt reporting and review of adverse events.

I.8.2. Prevention with People Living with HIV

HIV prevention with people living with HIV, referred to as prevention with positives (PWP), integrated into routine care is a core component of a comprehensive and integrated HIV prevention, care and treatment strategy. Prevention services for HIV-positive persons include both behavioural and biomedical activities aimed at reducing the morbidity and mortality experienced by HIV-positive individuals and reducing the risk of transmission to HIV-negative partner(s) and infants.
By focusing on partner and couples' HIV testing and counselling (HTS), PWP service provision can contribute to the identification of HIV-positive individuals as well as serodiscordant couples and partnerships. Partners who are newly identified as HIV-positive shall pass through partner notification process and then linked into HIV prevention, care and treatment services.
PWP activities are summarized below:

* Give key prevention message to the HIV-positive patient during each visit
* Evaluate the patient's adherence to ARV treatment and other treatments at each visit
* Evaluate the patient for possible signs and symptoms of STIs at each clinic and visit.
* Evaluate if the patient is pregnant and the intention of the patient /patient's partner desire to have a child.
* Give condoms to the patient at each visit
* Assess for specialized care needs and refer patients to the appropriate services.

I.8.3. Behavioral Interventions

The goal of behavioural interventions is to reduce HIV risk behaviours and HIV transmission. To reach this goal, interventions attempt:

1. to decrease the number of sexual partners,
2. to promote consistent use of condom
3. to encourage adherence to clinical interventions for preventing HIV transmission

Programs use various communication approaches – for example, school-based sex education, peer education/counselling, community-level education, and interpersonal counselling – to disseminate behavioural messages designed to encourage people to reduce behaviour that increases the risk of HIV and increase the behaviour that is protective (such as safer drug use, delaying sexual debut, reducing the frequency of unprotected sex with multiple partners, using male and female condoms correctly and consistently and knowing own and partner's HIV status).

I.8.4. Structural and Supportive Interventions

Structural approaches aim to mitigate the impact of HIV by altering structural factors, which include physical, social, cultural, organizational, community, economic, legal or policy aspects of the environment that determine HIV risk and vulnerability.

Structural interventions involve more than the service providers and beneficiaries; it includes working with various stakeholders including governmental and non-governmental agencies and addressing the factors that impede or facilitate efforts to prevent HIV infection.

These interventions affect access to, uptake of and adherence to behavioural and biomedical interventions. Such interventions address the critical social, legal, political and environmental enablers that contribute to HIV transmission.

This includes legal and policy reform, measures to reduce stigma and discrimination, the promotion of gender equality and prevention of gender-based violence, economic empowerment, access to schooling and supportive interventions designed to enhance referrals, adherence, retention and community mobilization.

I.9. Linkage to Care and Treatment

Knowledge of HIV status allows people to make informed decisions about HIV prevention and treatment. Strong linkages to effective HIV prevention, treatment, care and support services are essential if people are to carry out these decisions.

I.9.1. Linkages to Care and Treatment for Individuals testing HIV Positive

HIV-positive individuals should be referred for ART. For those who test HIV positive, the HTS provider should:

1. Provide clear information on ART and its benefits for maintaining health and reducing the risk of HIV transmission, as well as where and how to obtain ART.
2. Provide information on how to prevent transmission of HIV, including information of the reduced trans-

mission risk when viral suppressed on ART.

3. Make an active referral for a specific time and date. An active referral is one in which the tester makes an appointment for the client or accompanies the client to an appointment, including an appointment for co-located services, and enrolment into HIV clinical care.
4. Arrange for follow-up of clients who are unable to enrol in HIV care on the day of diagnosis.
5. Provide condoms, contraception, and lubricants and guidance on their use.
6. For couples who are serodiscordant, HTS provides access to HIV treatment for his/her own health and also to reduce the chance of HIV transmission to the uninfected partner. It is critical for people living with HIV to enrol in care as early as possible in order to benefit from immediate offer of ART as well as access to interventions to prevent the further transmission of HIV, prevent other infections and comorbidities and to minimize loss to follow-up.

Several good practices are proposed to improve linkage to care. These include :

1. Integrating HIV testing and counselling and care services;
2. Involving the community to identify the people lost to follow-up;
3. Ensuring support from peer patients;
4. Using new technologies, such as mobile phone text messaging for follow-up.

Connecting individuals and couples that have been tested for HIV to prevention, care and treatment services is one of the guiding principles of HTS conduct.

I.9.1.1 Recommendations for Retesting Individuals Prior to ART Initiation

To ensure that individuals are not needlessly placed on life-long ART (with potential side-effects, waste of resources, psychological impact of misdiagnosis), all individuals will be retested to verify their HIV status prior starting ART.

Retesting before ART initiation should follow the following procedures:

- Testing of a new specimen for each newly diagnosed individual
- Retesting is to be conducted by a different trained healthcare provider, ideally this will be the lab technician
- Retesting must use the same testing algorithm

I.9.2. Linkage to Further HIV Prevention for Individuals Testing HIV Negative

For individuals identified as HIV-negative and sero-concordant negative couples, HTS provides access to HIV prevention services. The health care provider should provide the following to those who test HIV negative:

- Education on methods to prevent HIV acquisition and provision of condoms, contraceptives, lubricant and guidance on their use;
- Emphasis on the importance of knowing the HIV status of sexual partner(s)
- Information about the availability of partner and couples testing services;
- Referral and linkage to relevant HIV prevention services, including voluntary male medical circumcision (VMMC) for HIV-negative men and PEP
- For adolescents in particular, provide information and education about healthy behaviours, such as:

* Correct and consistent condom use
* Reduction of risk-associated behaviours and prevention of
* HIV and unwanted pregnancy
* Retesting if they have new sexual partners
* Referred to appropriate prevention services, such as VMMC for males and contraception.

I.9.2.1 Recommendations for Retesting for Individuals WHO Test HIV-Negative

The vast majority of individuals do not require retesting to verify an HIV negative status, particularly in the absence of any ongoing risk.

However, it is important to accurately identify individuals who test HIV-negative and may require retesting in certain circumstances :

- Individuals from key populations
- Individuals with a known HIV-positive partner
- Individuals with known recent HIV exposure
- Individuals seen for a diagnosis or treatment of STIs
- Individuals with TB
- Outpatients with clinical conditions indicative of HIV infection Individuals taking PEP.

In the absence of linkages to these services, HTS will have only a moderate impact on HIV prevention.

SECTION II: HIV CARE AND TREATMENT

II.0. Summary of recommendations on HIV care and treatment

Recommendation 1.

Same day enrollment of clients tested HIV+ is recommended to avoid lost to follow up between testing and care and treatment services. Same day treatment may be done but consider psychosocial readiness.

Recommendation 2.

The commencement of the antiretroviral therapy (ART) for everyone living with HIV – regardless of clinical stage and/or CD4 count: "Treat all" strategy.

Recommendation 3.

Dolutegravir (DTG), an integrase inhibitor, based regimen is the preferred first line.

Recommendation 4.

Cotrimoxazole as prophylaxis is indicated to new patients with advanced diseases (CD4 less than 200 and/or WHO 3 or 4 clinical stage) or existing patients not suppressing their VL (more than 200 copies)

Recommendation 5.

Viral Load (VL) testing is the gold standard to monitor PLHIV on antiretroviral treatment

Recommendation 6.

Psychosocial support of PLHIV is delivered at two levels: at health facilities and in the community

Recommendation 7.

Adherence assessment, counseling support should be done at each visit

Recommendation 8.

DSDM is an approach that simplifies and adapts HIV services and puts patients into visits categories according to their needs. All patients on ART should be classified into one of the DSDM category: Stable or Unstable. The categorization will guide their appointment schedule and follow up

Recommendation 9.

Nutrition Assessment, counseling and Support (NACS) should be done at each visit.

Recommendation 10.

For children,less than 3 years LPV/r pellet formulation is preferred.

II.1. Introduction

This section offers 2 chapters, which concentrate on HIV infection treatment & management for different age categories of PLHIV: children younger than 10 years, adolescent 10-19 years of age and adults with more than 19 years of age. ART is a life long the combination of several antiretroviral medicines used to inhibit HIV replication and therefore slow the progression of HIV disease to AIDS, thereby improving the clinical status and quality of life of patients. Adherence to services and ARVs is key for the good treatment outcome.

II.2. PSYCHOSOCIAL CARE

II.2.1. Key message on psychosocial care

- Psychosocial support is one of the package of HIV prevention ,care and treatment which aims to improve quality of life of PLHIV
- In Rwanda, psychosocial support of PLHIV is delivered at two levels : at health facilities and in the community
- At health facilities, psychosocial care activities of PLHIV are conducted by health care providers trained in HIV care and treatment. Below are key activities conducted to ensure the psychosocial care of PLHIV

* Counseling pre and post test
* Psychosocial assessment and education before ART initiation
* Counseling before ART initiation and ART adherence counseling
* ART adherence and retention strategies client friendly service, good communication, ongoing education and counseling , confidentiality , linkage and advocacy for complicated vulnerable cases, peer support groups and home visits)
* The disclosure of HIV positive results to the child is not one single day event and this process is conducted individually by a health care providers trained or parents assisted by a health care providers . It is started at the early ages and follow the following stages:

- 0-4 years old: No disclosure yet
- 5-7 years Old: Early disclosure
- 8-10 years: Partial disclosure
- 11-14 years old: Full disclosure

At the community level, the psychosocial care of PLHIV is ensured by peer educators chosen by their peers according to selection criteria. They play a role to support the adherence and the retention of their peers.

Below are activities ensured by peer educators :

* organize monthly support group
* conduct home visits
* conduct referrals and linkages at HCP level
* facilitate referrals and linkages to services available at community level, sensitize the community on HTS
* produce the reports of performed activities

II.2.1. Definition

The word "psychosocial" comes from two words: psycho and social.

- Psycho refers to our thoughts, feelings, beliefs, attitudes and values. These things cannot be seen or heard by anyone-they exist "inside" each one of us.
- Social refers to our relationships with our family, community, workplace and friends.
- As defined by WHO (2003), Psychosocial support addresses the ongoing psychological and social problems of HIV infected individuals, their partners, families and caregivers.

II.2.2. Rationale

HIV infection affects all dimensions of a person's life: physical, psychological, social and spiritual. Psychosocial support helps people and their careers to cope more effectively with each stage of the infection, enhance quality of life to prevent further transmission of HIV infection and to support adherence to treatment regimens.

II.2.3. Key activities of psychosocial support of PLHIV :

- Psychosocial assessment of new HIV positive clients at enrollment
- Preparation to ART initiation for new HIV positive clients
- HIV counseling
- Peer support groups
- Community involvement package (home visit, peer support groups, linkage to other community support services….)

II.2.3.1. Psychosocial assessment of HIV positive clients

The psychosocial needs assessment should be conducted to all new HIV positive clients on the same day of HIV testing in order to evaluate all psychosocial needs and priorities/concerns of clients and their families.

After assessing all needs, a health care provider has to ensure an appropriate counseling and links HIV positive clients to relevant other services (Laboratory, pharmacy, Nutrition…) and resources.

Psychosocial assessment is also done at every visit for ensuring a good adherence and psychosocial well-being, and appropriate counselling offered.

For younger children under 7 years (before the child has concrete thinking) the psychosocial assessment is done through their parents /caregivers as the successful and sustained administration of ART is dependent upon the agreement and support of their parents/caregivers.

For children aged 7 and above (7-11) the psychosocial assessment considers not only caregivers needs but also child needs.

For adolescents and adults, the psychosocial assessment is conducted through individual / couple counseling. It is done to every new HIV positive enrolled in care and to experienced ART clients at every visit.

The table below gives details of how to conduct psychosocial assessment among children, adolescents and adults.

Table II. 1. Psychosocial assessment

Age category	At enrolment
Children 0-6	Through counselling session health care providers assess psychological and socio economic status of caregivers. Regarding socio-economic assessment, HCP should assess all problems which can affect adherence and social life of the child and address them accordingly. Child and Caregiver's social status is assessed in getting information related to: **Child Identification:** • What is the relationship of child with the caregiver? (parents, uncle, aunt, others) • does the child have siblings? At which range is she/he in the family? • Are the members of the family tested for HIV? How many among them are HIV positive? If yes, are they on ART? • Does he/she go to school? If yes, at which level? If no, why? Parent/caregiver Identification **Residence of the caregiver:** This information intends to know not only the location of the client but also to understand the accessibility of the client to the health facility especially the distance from home to health facility. **Marital status:** The provider should know if the care giver is married, single, divorced, widow/widower or separated aiming at understanding if the caregiver has a sexual partner, if the couple is stable, in good relationship. In the case of discordant couple or HIV positive concordant couple, assess if they have their sexual intercourse protected. Did they disclose their HIV status to each other?

	- How is the spiritual life of the caregiver? Socio-economic status of the caregiver and the family: This information allows the provider to know the size of the family, the economic status of the family, occupation of the caregiver as the source of income, Ubudehe category, if any support needed ex: nutrition, education and health insurance… It is also important to know if the caregiver has his/her accommodation, if they have access to clean water and sanitation. Regarding psychological assessment of the caregiver: HCP will use the mental health screening tool (see annex). In case of positive screening and depending on the problem found, the HCP will provide appropriate counseling or refer to mental health services.
Children 7-10	For this age category, a psychosocial assessment is done to the caregivers as well as to the child. HCP assess all above mentioned psychological and social needs of caregivers but also assess the following key element for the child: • Child development (physical, psychological, emotional, and Cognitive) • School performance. -If the child is not enrolled at school, assess the causes. • Assess the family support (happiness, if no violence, stigma and discrimination …) In addition, the HCP will discuss with the caregiver on disclosure process for the child (For more details on the disclosure see the chapter on the disclosure) Note: • These children have to be accompanied with their parents or caregivers in the enrolment process • All information related to psychosocial assessment has to be documented in patient file

Adolescents 10-19	A psychosocial assessment should be conducted with each adolescent client at enrollment in HIV care and treatment services then at each clinical follow up/visit. HCP should always respect client confidentiality and conduct sessions in a space that offers visual and auditory privacy. Key information from the psychosocial assessment should be recorded in the patient's file for reference during follow-up visits.
Adult 20+	A psychosocial assessment should be conducted with each adult client at enrollment in HIV care and treatment services then at each clinical follow up/visit. HCP should always respect client confidentiality and conduct sessions in a space that offers visual and auditory privacy. Key information from the psychosocial assessment should be recorded in patient's file for reference during follow-up visits.

Special consideration for Adolescents

Why do we need special consideration adolescent ?

It is important to be aware that they are especially vulnerable, in particularly regarding Sexual and Reproductive Health.

Beside of the fact that adolescents make up a high proportion worldwide and in the Rwandan society, they will furthermore determine the future of the country particularly regarding health, economic, political and social development

This age group is generally assumed to enjoy a healthy life considering a relatively low morbidity and mortality. Unfortunately, this perception has led to a certain neglect regarding health strategies and policies for adolescents (Binagwaho, 2009) and how their health needs can be integrated in existing approaches and strategies.

Apart from the physiological and social vulnerability, adolescence is a period of physical, biological, emotional and social change-a situation that is determined by decision taking and acquiring habits, which often influence the rest of their life.

The recommended adolescent minimum package in Rwanda includes :

Friendly HIV testing and counselling
Friendly HIV disclosure to all adolescents
Enrolled into health faclity-based peer support group
Sexual and reproductive health: ***Contraception/emergency contraception, Family planning, sex education with focus on condom use as dual protection, STIs screening and management.***
Psychosocial counseling and support: Mental health screening and referral, Adherence counseling, Disclosure counseling, Substance abuse counseling
Laboratory, Pregnancy screening, Viral load test….
IEC materials: Prevention, Treatment literacy, Disease literacy, Living positively Existing legal rights (as they apply locally)
Effective referral system with follow-ups Linkages with family, community, Linkages with other youth services

For services to be considered "youth-friendly," the World Health Organization (WHO) has agreed upon a set of overarching characteristics :

- **Accessible:** and equitable. All adolescents are able to use the services if they wish. All the essential health services that adolescents need are being provided in ways that make it possible for all adolescents to use them.
- **Acceptable:** Adolescents are willing to use the services that are available. Health workers and health facility staff are trained to provide services to young people in a way that is respectful and that ensures client privacy and confidentiality
- **Appropriate:** Health services at the point of service delivery meet the needs of adolescent clients. If an adolescent client seeks help for the management of a sexually transmitted infection and these services are not being provided, the point of service delivery is not meeting the individual's needs.
- **Effective:** The services make a difference in improving the health of adolescents. The necessary skills, equipment, and supplies are in place to provide quality services for adolescents

Characteristics of adolescent/youth friendly health facility

In accordance with World Health Organization, adolescent friendly services require some characteristics for a health facility :

Characteristics	Explanation
Special times for adolescents	Facilities can fix special session for adolescent: during late afternoons, after school/ work, during weekends, or holidays in order to make it possible for them to attend. Furthermore, they should be flexible in offering appointments as young people sometimes decide spontaneously to drop-in and seek help or information. Long waiting times and overcrowding should be avoided to not discourage young people
Adequate space and sufficient privacy	Rooms should be created in a way that adolescents feel free to be and express their concerns and problems. In a situation where there is no special place for adolescents in a health facility, special arrangements can be made to establish adolescent friendly services, to guarantee privacy.
Trained staff	A HCP dealing with Adolescent care should have knowledge and skills on how to provide adolescent friendly services.

II.2.3.2. Preparation to ART initiation

Clients tested HIV positive, should be prepared and initiated on ART the same day where feasible after assessing their readiness. For those who are not ready to initiate treatment the same day, HCP will conduct treatment preparation sessions for them and ensure the ART initiation takes place within 7 days. Treatment preparation education sessions will be conducted individually or in group counseling. Below are the topics to be discussed:

- **The preparation process of clients intends to initiate ART as soon as possible. When the client is not ready to start after undergoing some preparation education sessions, HCP continues the counseling and provides support until the client gets ready.**

- **HCP should always record all information related to the preparation process in the patient file.**

Table II. 2. Phases and topics to be discussed during treatment preparation to medication counseling session

Phases	Key points of discussion
Basic Information About HIV Care and Treatment	• The client's understanding of his/her own diagnosis • Knowledge of how HIV is transmitted and prevented • How HIV affects the immune system • What is ART and who needs ARVs, myths and beliefs surrounding ART • Categorization of patients in DSDM • The meaning of the CD4 count and VL • Benefits and challenges of ART and drug resistance • Importance of good adherence • Positive living • Importance of disclosure • Nutrition • Safer sex, dual protection, • Prevention and treatment of STIs • OI prophylaxis and treatment of OIs (especially CTX), • Existing social support (family, treatment supporter, counselor, support groups, community groups…)
Adherence to HIV Care and Treatment services	• ART is a lifetime treatment that needs self-commitment. • Importance of adherence to care and treatment plan • Consequences of poor/bad adherence • Barriers and challenges related to adherence and strategies to overcome them • Special adherence issues by age category (children, adolescents and adults). • Treatment plan (explanation of ARV regimen, dosage, actions in case of missed or late doses, and integration of care and treatment plan in daily life…) • Identification and management of side effects • Reminder on positive living, safer sex, and pregnancy planning • Linkages and referral to peer support groups and other existing support services in community

I.2.3.3. HIV counseling

II.2.3.3.1. Definition

Counseling in HV&AIDS has become a core element in holistic model of HIV care and treatment in which psychological issues are recognized as integral to client's management. It is a dialogue between a client and a HCP, where feelings, thoughts and attitudes of clients are expressed, explored and clarified with aim of enabling clients to cope with stress and to make personal decisions related to HIV &AIDS prevention, care and treatment.

II.2.3.3.2. Who should provide HIV&AIDS Counseling ?

A wide range of people can play a role in the provision of HIV &AIDS counseling. These people include: Health Care Providers such as doctors, nurses, community health workers, social workers, specialized professionals or any other trained person in HIV&AIDS counseling.

II.2.3.3.3. Who needs HIV counseling ?

HIV counseling can be conducted for individuals, couples, families and group of people.

- People in need of HIV testing (VCT, PMTCT, ANC, PIT)
- Discordant couples
- PLHIV and their families
- Any other person affected by HIV

II.2.2.3.4. Characteristics and requirements of effective counseling

Below are key characteristics for characteristics HIV counseling:

Confidentiality: Confidentiality ensures that any reference to or discussion about a client (except within a professional relationship) will not be undertaken without the expressive consent of the client.

Trust: is one of the most important factors in the relationship between the counselor and the client. It enhances the opportunity for deep exploration of the client's condition and improves the chances that the client will act decisively on the information provided

Time and space: It is essential to provide enough time for the effective counseling to take place as it takes time to develop trust in the relationship. In addition of the time the space where the counseling sessions take place must be a private and safe room that enables the client to express his/her feelings without any barrier. Some people may require many counseling sessions in order to explore their problems, acknowledge the need to change a particular behavior.

Acceptance and Respect: PLHIV need to feel that they are fully accepted by the counselor that is why the counselor must be self-aware and non-judgmental in the counseling session.

Consistency and accuracy: Any information provided in the counseling session must be consistent over time. The counselor therefore, needs to have a full knowledge of the facts related to HIV&AIDS, or have

the ability to seek out the knowledge that he/she lacks. The counselor must keep up with the knowledge development as HIV&AIDS information is changing rapidly.

Accurate empathic understanding: Accurate empathic understanding means that the counselor understands their client's experience and feelings in an accurate and compassionate way. Empathy, according to Rogers is the ability to experience another person's world as if it were one's own without ever losing that 'as if' quality. Empathy is needed for the counselor to be sensitive, moment to moment, to the changing experiences of the particular person seeking help.

Congruence (genuineness): Congruence refers to the counselor being real, authentic, and genuine with their clients. It's called congruence because their inner experience and outward expression match. In being authentic, the counselor shows they are trustworthy, which helps in building a good therapeutic relationship with the client. It also serves as a model for clients, encouraging them to be their true selves, expressing their thoughts and feelings, without any sort of false front.

Techniques of HIV counseling

There are many different techniques that counselors can use with their clients. Here is a look at some of the techniques that are felt to be most effective during a counseling session:

Clarification: A counselor should often ask their client to clarify what they are telling them to make sure that they understand the situation correctly to avoid assumptions or misconceptions.

Confrontation: It is an attempt by the counselor to gently bring awareness in the client that they may have overlooked or avoided

Encouraging: This technique asks the counselor to focus on the client's strengths and assets to get them in a positive light. It helps also the counselor to encourage the client to continue expressing his or her feelings, thoughts.

Focusing: This technique involves the counselor demonstrating that s/he understands what their client is experiencing by using non-judgmental attention without any words. Focusing can help the counselor determine what the client needs to obtain next from their services.

Listening Skills: With any relationship, listening skills are needed to show that the counselor understands and interprets the information that their client gives them correctly. The counselor should do this by showing attentiveness in non-verbal ways, such as: summarizing, capping, or matching the body language of their clients. Active listening is very important skill for an effective counseling

Open-Ended Questions: Open-ended questions encourage people in a counseling session to give more details on their discussion. Therefore, these types of questions are used as a technique by counselors to help their clients answer how, why, and what.

Paraphrasing: This technique will show clients that the counselor is listening to their information and processing what they have been telling them. Paraphrasing is also good to reiterate or clarify any misinformation that might have occurred.

Reflection of Feeling: Counselors use this technique to show their clients that they are fully aware of the feelings that their clients are experiencing. They can do this by using exact words and phrases that their clients express.

Working Alliance: This technique involves the client and counselor being active collaborators during counseling and agreeing upon goals of treatment that are necessary, as well as how to achieve those goals.

Hierarchy of Needs: This technique involves the counselors assessing their client's level of needs as based on the progress that they are making.

II.2.2.3.5. Steps of counseling session

1. **Rapport building:** Establishing a safe trustworthy environment between counselor and client.
2. **Assessment of problem of client:** Helping client to narrate his concerns and issues. This requires active listening on the part of a counselor by focusing on client's feeling for the event rather than event itself.
3. **Transforming problem statements of client into targeted goals** This takes place by setting achievable goals in a time-bound manner by overcoming probable obstacles to goals.
4. **Developing an action plan:** This requires setting objectives and tasks that client is supposed to do in order to achieve a targeted goal. It is an active implementation stage of counseling process.
5. **Review and Feedback:** The aim of review and feedback is to give continuous reinforcement to client for consistent attitude and behavioral change.

II.2.2.3.5. Special counseling types

Disclosure of HIV result to the child

The disclosure of HIV positive result to the child is a process, not one single day event, which is conducted individually by a health care providers trained or parents assisted by a health care providers. It is started at the early ages with the following stages:0-4 years old: **No disclosure yet,** 5-7 years Old: **Early disclosure,** 8-10 years: Partial disclosure and 11-14 years old: Full disclosure.

Disclosure of HIV status is not a one-time event, but rather a process, involving ongoing discussions about the disease as the child matures cognitively, emotionally, and sexually.

HIV must be individually or in a group setting.

- **Why is disclosure important?**

* Disclosure may increase social support available to child and family, may increase a child's willingness to adhere to treatment regimen
* Disclosure helps children understand the illness and avoids an accidental disclosure from occurring (e.g., child overhears caregiver discussing it).
* The children have the chance to ask questions about their illness.

- **Who should disclose to a child?**

In collaboration with parents/caregivers, the health care providers have to make a disclosure plan for every child and involve the parents /caregivers in process.

The parents can do disclosure at home. In the case of parents / caregivers who are not comfortable to disclosure to their children, health care providers do the disclosure and the parents/caregivers assist the process.

- **When to announce the diagnosis to a child?**

The choice of the best moment to announce the result to the child is decided together with parents/ guardians. It is preferable to provide complete announcement (HIV/AIDS) before 14 years.

- **Factors to Consider & Assess before disclosure**

Parental issues:

* Available social support
* Family understanding and knowledge
* how much information the parent wants to share about their own history
* Potential conflicts/safety issues
* Readiness of the family for the disclosure
* Readiness to tell extended family/siblings
* Adjustment with HIV parents status
* Communication skills with child -Right time

Child issues:

* Age/developmental level
* Child/Adolescent's current knowledge/understanding of illness
* Child/Adolescent's health status
* Child/Adolescent's emotional status Support system (safe" people for the child to talk to about HIV)
* Child/Adolescent's readiness

- **What can be barriers to disclosure?**

Parents' fears of child's reaction to diagnosis:

- Child is not old enough to understand illness or death
- Child can't keep a secret
- May bring more social isolation or peer rejection
- Child may become more anxious during medical procedures and hospitalizations
- Child may become depressed and give up

How to deal with the barriers?

- Discuss the following with caregivers on an ongoing basis:
- Caregivers' concerns about disclosure
- The importance of ongoing communication with child regarding health issues
- Benefits and risks of disclosing the diagnosis of HIV infection to children and adolescents
- Potential harm that can result from long-term nondisclosure

- **How should the disclosure process take place?**

- Build on child's understanding and knowledge
- Provide Information which are developmentally appropriate for a child
- Correct and clarify misinformation

- Provide basic education over several discussions that lead up to diagnosis after child understands the virus, role of meds, etc. (refer to child disclosure tool)
- Prepare for difficult questions that may come later
- Inspire hope

- **What are the steps of disclosure?**

0-4 years old: No disclosure yet

The aim of this step is to build up confidence of child in health workers and taking medicine.
Child will depend on adult for all needs, information, comfort, support and most of all security. The child is too young for direct information about HIV but to give the explanations to caregiver about how HIV can affect the child remain important. It's a good opportunity to provide ideas to help caregiver support child taking medicine, to congratulate child on taking medicines well; to address caregiver anxieties; to build relationship with the child through play/singing and to provide a safe and welcoming clinic. The caregiver has to carry on consultation with child present.

5-7 years Old: Early disclosure

At this age the aim of the early disclosure is to allow to the children to understand that medicines help to keep the body healthy
In general, the child needs to learn about illness but not HIV by name yet

The following are key elements the provider has to explain to the children:

- Good and bad health by eating healthy food, keeping clean, exercising, looking after teeth etc.
- How medicines help to keep a body healthy and strong. He can introduce infections as 'germs' that can hurt or damage the body/make you sick or hurt.
- (White) blood cells as the part of the body that look for and kill infections or germs hide therefore child needs to take medicines to help fight the germs.

8-10 years: Partial disclosure

At this step the aim will be to name the infection as HIV Virus. The provider will explain that the germ concerned is a virus which can damage white blood cells. If medicines are not taken correctly, the virus can get stronger and stop the medicines working (resistance). During the session, naming of virus as HIV should occur but not essential. The provider will explain that information is private and should only be shared with those agreed with the caregiver(s). He will help the child to identify who they can talk with about their health

11-14 years old: Full disclosure

The HIV full disclosure can be done at this age. The child has the full understanding, right and responsibilities the ability to negotiate his/her own health care. The provider checks understanding of health, medicines, sexual development and HIV infection.

He assesses the need to understand responsibility for not transmitting HIV i.e. safer sex, and their rights regarding family planning and confidentiality. He prepares the teenager for future, encourages direct involvement in discussions and decisions. The provider promotes the benefits of attendance at adolescent support group.

Post-Disclosure

After the HIV diagnosis has been disclosed, follow-up calls or visits should be made to assess the child/adolescent's understanding of the illness and emotional and psychological adjustment. The provider discusses the pain and distress after disclosure to:

* Assess emergent psychological symptoms regularly (shock, anger, sadness/Depression, embarrassment, fear, confusion, loss, rejection and isolation etc.)
* Offer your continued support and availability;
* Discuss the importance of having continued counseling sessions on a regular basis;
* Encourage teenager to always ask questions and discuss his/her concerns and fears and
* Explore the teenager's hopes, ambitions and plans for the future using questions addressing wishes.

At each visit after disclosure, health care providers assess child/adolescent's emotional well-being and functioning in the following areas:

- School functioning
- Family and peer relationships and support
- Interests and activities
- Mood and behavior

Health care providers work closely with caregivers to monitor for changes in functioning that may signify poor adjustment.

Notice :

1. As soon as they are able, children above 12 years old have the right to give their opinion about HIV testing but the provider should assess the level of understanding, social support and ability of coping before testing and provide counseling tailored.
2. Date of disclosure should not coincide with other events such as birthdays, holidays, graduation, etc
3. Disclosure can be a difficult process for all concerned, effective conversations are dependent on the age and understanding (developmental level) of the child
4. The provider has always to assess what the information the child has and clarify the information according the age of the child. Never go the following steps while the child doesn't have knowledge of the current steps. Failure of full disclosure by early teenage years can lead to: i) Poor adherence; ii) Emotional difficulties, iv)Poor school performance; v)HIV transmission if sexually active

How to report the disclosure?

At each stage, the provider has to document how the disclosure process is going on in patient file. The document to be used in this reporting is the register with the following information: date, Tracnet, name, age, sex, family status (orphan or have one parent or two parents), reason of disclosure, reaction, next step.

II.2.2.3.6. Adherence counseling for patients on ART

Adherence counseling helps clients understand their treatment and its challenges. It provides an ongoing support for them to adhere to treatment over the long term.

ART adherence counseling should be conducted:

- At ART initiation,
- During treatment maintenance and sustainability,
- At the change of the regimen
- At the change of DSDM group category
- At every clinical visit

Adherence changes over time. Someone may be adherent when he/she starts treatment, but this can change due to different factors that is why it is recommended to conduct ART adherence counseling at every visit. HCP will focus on the following elements:

- Avoid to be judgmental
- Discuss with the patient his/her treatment plan and challenges s/he is facing
- Remind the goal of ART to treatment and consequences of poor adherence
- Discuss together how to overcome the challenges
- Assess the sides effects; if any provide appropriate intervention
- Encourage the clients for a good adherence and empathize with client's facing treatment difficulties

For adherence counselling at initiation and during maintenance and sustainability refer to its sections mentioned earlier in the part of ART initiation.

II.2.2.3.6.1. Counselling at treatment Change

There are several reasons for changing anti-retroviral treatment including: Client intolerance of a medication, significant adverse effects and Treatment failure. In these cases, the counselor should consider the following:

- Avoid to be judgmental
- Remind the treatment goal and the consequences of poor adherence
- Explain the reason of treatment change
- Explore the feelings of the client (shame, guilt, embarrassment or fear of failure…)
- Discuss the new treatment plan based on the client's previous experience on HIV treatment: what worked and what did not work?
- Discuss treatment supporter role if the client maintains the same or wish to change

II.2.2.3.6.2. Counseling for patients shifting from unstable to stable group or vice versa

- DSDM categorizes patients into stable and unstable groups. It allows patients to move from one category to another. The counselor should give that information from the enrollment that there is possibility to switch/shift from one category to another.

From unstable to stable category

The counselor should consider the following:

* Discuss with the patients the goal of ART treatment
* Congratulate the client for good adherence
* Remind the client that there are two categories of patients (stable & unstable)
* Inform the client that s/he is qualified to move to stable category

* Ask the consent of the patient to shift in stable group
* Explain to the client his or her schedule of pharmacy pick-up and clinical visits as a stable patient and peer support group
* Discuss with the client the storage of the drugs
* Encourage the patient to respect the treatment plan for good outcome in the future.

From stable to unstable category

* Avoid to judge the client
* Discuss ART treatment goal
* Discuss the possible causes of VL increase
* Discuss treatment plan
* Ask the patient the treatment plan challenges s/he faced
* Explain to the client his or her schedule of pharmacy pick-up and clinical visits as an unstable patient and peer support group
* Help the client to find strategies to overcome barriers of good adherence and ensure regular follow up.

Ensure the client that when she/he respects treatment plan and VL is suppressed again, will be shifted to stable group.

II.2.2.4. Adherence and retention to HIV care and treatment

In the context of ART medication, a client is adherent when s/he takes the doses at least at 95% to maximize the long term benefits of ART.

II.2.2.4.1. Definitions

ART Adherence refers to a client's ability to follow an ART treatment plan. This includes the client's ability to take medication as prescribed (the right regimen, frequency, dose and time) and to follow any prescribed dietary restrictions

Retention in care is the ability to adhere to critical aspects of care: attend regular follow-up appointments, scheduled lab tests, and other monitoring activities according to health system standards and as prescribed by a health care provider.

II.2.2.4.2. ART adherence barriers and retention in care

For addressing adherence among PLHIV, HCP should know what could be the barriers of adherence Poor adherence can be related to cause different issues:

- Drug related issues: Number of pills prescribed, the complexity of the regimen, medication side effects
- Patient related issues:
- Socio demographic factors (age, gender, income, education, housing status, insurance status,)
- Psychosocial factors (mental health, substance use, knowledge and attitudes about HIV and its treatment),
- Stigma, peer pressure, low self-esteem, Fear and lack of belief in the effectiveness of medications, Disclosure issues, denial, forgetting, cultural/spiritual beliefs
- Stage and duration of HIV infection, associated opportunistic infections, and HIV-related symptoms.

Provider related issues: Patient-Provider relationship, wrong prescription, incorrect dosage, delay of drug requisition, scheduling appointments…

II.2.2.4.3. Adherence assessment methods

Continuously assessing adherence is vital to a comprehensive and sustainable approach to ART delivery. It should be the duty of every health care provider participating in care of HIV positive people.

Adherence is assessed in every service: pharmacy, consultation, nutrition and social services.

There is no standard gold method to assess the adherence but they complete each other. Below are four to be used at heath facility:

a. Pill identification test (in pharmacy service)

- Could you share with me the name or show me the medication that you take/ your child takes?
- Explain more how and when these medications are taken

b. Pharmacy record form review (in pharmacy service)

Health care providers check if the caregivers/adolescent or adults respect the appointment for picking the medication, if he/she does not experience any medication stock out.

c. Pill count method (in pharmacy service)

At every visit, clients are encouraged to bring the remaining pills for the next appointment.

When the child is taking the syrup, the caregivers bring the bottles and in collaboration with health care providers they compare the remaining quantity with the full bottles.

With this, HCP in collaboration with clients, calculate the proportion of adherence by using the bellow formula:

% Adherence = Dispensed – Returned x 100/ Expected to be taken

d. Self-report (consultation, counseling and pharmacy service)

Through individual counseling, HCP encourage the client or caregiver/ to be honest and report on how he/she is taking or giving medicine and the challenges he/she is facing in order to address them together for a good adherence.

The provider must avoid to use a judgmental language during assessment

Table II.3. Strategies for improving and supporting adherence and retention

Strategies	What to do
Clients friendly services	**1. For children** • Make the environment pleasant and comfortable, with not-too-long wait times and a shady waiting area, convenient hours, and welcoming staffs • Prioritize young children • In the case of HIV positive parents/caregivers, ART visits for caregiver and the child occur on the same day. For the children aged 2 years and above who have parents/caregivers who are in stable groups, they will have also the provision of drugs for three months. • Arrange appointments for other support services (nutritional and social) on the same day of pharmacy/clinic visits **2. Adolescents /adults** • Arrange appointments for adolescents who have to see more than one services at one visit • Arrange appointments for adolescent at a time when they don't go to school (in the weekends) • Arrange a good environment (where clients could sit with shade • Arrange special consultation time for adolescents • Avail education materials • Reduce clinical visits • Building trust relation with clients
Good communication	• Heath care providers must have good attitude for all patients • Active listening • Respect and dignity to the patients / caregiver • Never judge someone that you are counselling. • Be sensitive with adolescent culture * • Ask open-ended questions about adherence to help the client share. • Encourage for big steps achieved
Confidentiality	• Remind adolescents /adults or caregivers that care and treatment information may be shared among the multidisciplinary team but will not be disclosed outside that group • Make sure all clients understand that what is said at the health facility is confidential • Assure adolescents /adults or caregivers that their HIV status / of their children will not be disclosed without their consent

Ongoing education, counselling and peer support	**For children** • At every visit, provide ongoing education session to caregivers in group or individual and insist on the following key points: • Importance of early HIV testing among children • Importance of ART medication to their health life (in case the caregiver is HIV positive) as well as to child • Importance and participation in peer support group. • In the case of HIV positive caregivers, health care provider assesses their adherence on ART medication • Through counseling session, health care providers assess the psychological and mental health status of caregivers • Remind how to take the medication properly • Disclosure the HIV status to the child at the right time • Encourage the caregivers to have and participate in peer support group. • Health care providers have to ensure that the disclosure process is done according to development age **For Adolescents and adults** • Provide regular individual counseling to adolescents/adults. • Especially for adolescent's health care providers ensure that the adolescents know his/her HIV status especially when the diagnosis was disclosed to their parents when the adolescent was young. If the disclosure is not yet done, plan it in collaboration with adolescents/ caregivers
Follow up and linkage	• Health care provider has to assess coping ability of adolescent
	At every visit, health care providers have: • To conduct IEC session on different topics such as the importance of taking the drugs every day, drugs resistance, safe sexual activity, how to handle medications adverse effects • Remind clients how to take the medication properly • To discuss about traditional medicine, religious beliefs, sexual reproductive health, family planning etc. • Encourage adolescents/adults to use phones, watches or any other new technologies for reminding them to take the medication and to respect the appointment • Connect the adolescent /adults to community peers support group and monitor it. • Encourage adolescents/ adults to attend in peer support groups Encourage adolescent /adults to have treatment supporters. For adolescents who are in boarding school, encourage them to identify a teacher or any adult person who can play a role of treatment supporter at school

	• At every 6 months, health care workers arrange the education session with adolescent and their caregivers. This help to increase the literacy of adolescents as well as their parents/caregivers about the HIV, its treatment and the importance of a good adherence. **For all clients** • Managing adverse effects of ART • Assess mental health of caregivers of adolescents/adults at every six months • Identifying a backup caregiver to be involved in providing care. In case of adolescents of adults identifying a treatment supporter • When caregiver(s) is HIV positive, encourage him/her to have treatment supporters who might help when the caregiver(s) is unwell. • Use an appointment system to track which patients are supposed to come to the clinic each day, and for each service • Give the clients reminder cards (carte de rendez- vous) • Advise clients to use phones reminders, calendar, radio and watches for helping them to remind them to give the medication or go to their next medical appointment • Link clients to supports groups or associations in the community that can help • Keep the contact information updated • Conduct home visits for the clients who miss the appointment without any reason • Link HIV positive caregivers with PLHIV associations and nongovernmental organizations (NGOs) in the community that can help support adherence

II.2.2.5. Psychosocial support groups

People facing the same problem such as HIV can support each other and improve their wellbeing. A support group of PLWH brings them together to talk about the challenge, experience and/or role, what they have in common as PLHIV.

By joining support groups, PLHIV realize that they are not alone in their situation. They also brainstorm solutions of the challenges they face, and provide advice each other.

II.2.2.5.1. Support group Organization

Membership and participation: A PLHIV support group member is any person living with HIV who has voluntarily decided to join a support group and is willing to take part in the group activities.

A support group is formed by PLHIV from the given geographic area; preferably the same cell and should not have more than 50 people. The participants in support group can be PLHIV, HCP, parents/caregivers,

Venue: The support group meeting venue needs to be accessible, affordable, safe and agreeable to group members. It can take place in the HF or in the community.

Rules: The group should establish meeting ground rules. These rules are more specific than the constitution and include things such as agreeing to listen when others are speaking, respecting time, respect confidentiality....

Facilitation: The support group meeting facilitators may come from inside or outside the group. Eg a peer educator, a HCP, an expert in a given domain…

Topic and Material: The topics are scheduled depending on the age category, previous sessions and level of the group. Material is determined and prepared based on the target group and the topic of the day.

II.2.2.5.2. Process of support group

* Welcoming members
* Introduction of each participants
* Remind the ground rules
* Introduction of the topic of the day
* Encourage the participants to discuss about it
* Concluding the topic
* Fix the next appointment and next topic
* Closing

Table II.4. Psychosocial support group according the age group

Age category	Topic
Children 0-4years	At this age the role of support group is to support the caregivers by sharing problems related to care of the HIV children they face day to day Topics to be discussed include • HIV/AIDS, transmission and prevention • Medical and biological Follow up of exposed enfant • Monitoring of drugs taking for the child • follow up, etc.
Children 5-7years	At this age the role of PSG is for caregivers support too. The aim is for strengthening adherence to prophylactic and antiretroviral treatment, and facing the problems that crop up when psychosocial needs of the child are not met. Topics to be discuss should be the same that those for 0-4 years but the providers have to be attentive for any question from caregivers.

Children 8-10years	The aim is to promote emotional support and exchange of experience and to strengthen compliance to prophylactic and antiretroviral treatment for children. Topics to be discuss: • Define HIV • The body, the role of blood, immunity • Taking drugs • Life hygiene In additional to the discussion, the following should also be done for the 8-10 Years Old range category: • Evaluate expectations and proper needs of children aged between 8 – 10 years old. • Support the integration of children in school, social and family life. • Help children to express themselves through leisure activities. • Sensitize children on the importance of regular taking of drugs.
Adolescent 11-14years	The objectives are to understand: how the virus affects the body (i.e. how HIV affects cells)' identify the three modes of transmission of HIV, what does NOT transmit HIV (the myths/ misconceptions); confidentiality (age appropriate discussions; and challenges to taking medicine at school. Topics • The multiplication of the virus and the role of ARV; • Life experience with HIV, secret; • Taking drugs; • Life hygiene; • Hard times in the life of the child and the future; • HIV transmission and prevention; • Positive behavior;

15-21 years	• Identifying their own emotions • Sharing these emotions with the class (optional) • Talking about ways of dealing with these feelings • Understanding that HIV is not something to be ashamed of and to talk about ways of combating stigma • Define self esteem • Share some problems they are facing at home or in school because of stigma * Define school, home, and self-stigma * Talk about reproductive health and positive prevention * Life skills
Above 21 years	• HIV transmission, prevention and treatment Prevention and treatment of STIs • Side effects • Positive living • Reproductive health • Opportunistic infection • stigma and discrimination • Disclosure • Nutrition • Life skills

Note: The meeting of peer support group should be reported in register: Date, topics discussed, facilitator, participants (names), next topics, observation

II.2.2.6. Home visit

Home visit is one of strategies to support adherence. It can be conducted by HCP or a peer educator (PE).

In this case a HCP or a PE should develop and provide a personalized plan of care that helps the client adhere to care and to treatment plan.

II.2.2.6.1. Objectives of home visits:

* Identify the residence of the patient: to verify and complete the information that was recorded earlier in the patient's dossier.
* Ensure more intensive counseling (Eg. For clients failing to disclose HIV status, refusal of testing by the partner, patients missing appointments to follow up, and loss…).
* Assess socio-economic status of the patients and provide support where possible.
* Trace and bring back patients who have missed an appointment or are lost to follow up in care and treatment.
* Catalyze participation of the family in the treatment process.
* Break the isolation of the patient.

II.2.2.6.2. Clients in need of home visit

* Patients newly enrolled
* Patients who missed their appointment (clinical, lab, and pharmacy visits…)
* Clients who missed peer support group meeting without informing the peers
* On client's demand

NB : Before conducting any home visit, the HCP or a PE should be sure if the client or care giver has given the consent during enrollment.

II.2.2.6.3. Organization of home visits

Before :

* Determine the individual objective of the home visit for each patient.
* HCP in collaboration with PEs identify cases that need home visits
* Inform the patient of the visit where possible, date and time, team to conduct the home visit,
* Prepare all logistics (Transport means, forms, etc.)

During :

* Introduce the team and the objective of the visit
* Take time to interact with the client or the care giver
* Listen carefully to the client/care giver and provide advice
* Discuss the expected outcomes and summarize key points discussed
* Set up a plan for the future
* Close the session

After :

* Record all necessary information in the home visit register
* Report the home visit to the HCP team
* Make a follow up

NB : Ideally home visit should be conducted between 45-60 minutes

II.2.2.7. Community support of people living with HIV

At the community level, peer educators chosen by their peers according to selection criteria, ensure the psychosocial care of PLHIV. They play a role to support the adherence and the retention of their peers through the following activities :organize monthly support group, conduct home visits, conduct referrals and linkages at HCP level, facilitate referrals and linkages to services available at community level, sensitize the community on HTS and produce reports of activities performed.

The spacing nature of DSDM allows a big number of patients enrolled in HIV program to spend much of their time in the community without coming at health facility. It is understandable that DSDM to be successful needs to be supported by a community-based approach through peer education.
The peer education provides moral and psychological support to patients and promote adherence to treatment and retention. The peer education contributes to reducing the financial and time costs associated with frequent clinical visits.

From a health system perspective, reducing clinic contact required for clinically stable ART populations and refocusing resources towards managing sick patients with complex clinical problems is a key objective, with anticipated reduction of staff workload and improvements in quality of care.

From the perspective of social impact mitigation of HIV, the peer education approach will also play a key role in improving referrals and linkages between the community and health facility.
The peer education is expected to contextualize the approach in Rwanda to ensure efficiency and quality of services depending on resources, drug supply mechanisms, and monitoring system that can follow patients in and out of the community to the HF.

II.2.2.7.1. Objectives and outcomes of the community support of PLHV

- **Main objective:**

Improve and sustain adherence and retention to HIV services.

- **Specific objectives:**

* Minimize the lost to follow up (LTFU)
* Strengthen community based follow up of PLHIV
* Promote HIV prevention services
* Improve self-efficacy among PLHIV to access all support services available.

II.2.2.7.2. Expected outcomes

The expected outcomes include:

* Improved adherence on ART
* Improved retention on care and treatment services
* Improved access to HIV services
* Improved social impact mitigation of HIV

II.2.2.7.3. Peer education approach

Peer Educators are an excellent source of practical and psychosocial support for other PLHIV who may feel more at ease sharing feelings, concerns, experiences, and problems with someone who has faced a similar situation.
The greater involvement of PLHIV (PE) and their continuous engagement through peer education and community HIV/AIDS support groups can complement the work of health care providers and play an important role in ensuring access to effective and sustained adherence on ART and retention into care and treatment. PEs play an important role not only in HIV prevention, treatment but also, contribute to social impact mitigation.

II.2.2.7.3.1. Definition of Peer education

Peer education is the sharing of knowledge by someone who is either directly a part of the same social group as the individual with whom the knowledge is being shared, or who is of the same age, gender, sexual orientation, race and ethnicity, occupation, socio-economic, and/or health status. But, most importantly, they inspire trust.

In relation to HIV education, peer education is a less formal and more intimate approach to education that helps people who are unfamiliar with, or dislike a formal way of learning, to be presented with knowledge by their peers.

This educational intervention occurs at various levels, depending upon where the person finds herself/himself within the continuum of HIV diagnosis to HIV care.

For instance, the peer education process has helped many individuals deal with the first emotional reaction at the time of diagnosis by learning from a person who has experienced it or can relate to the experience firsthand.

II.2.2.7.3.2. Selection criteria of peer educators

Below are general criteria that each person should have in order to be selected as a peer educator depending on the target group:

- Be HIV+
- Be willing to volunteer and be available for peer education
- Able to maintain confidentiality
- Reside in the same geographic area with the peers (within at least the same cell)
- Be stable as defined in the DSDM
- Able to read and write at least local language (Kinyarwanda)
- Able to disclose his or her HIV status to others
- Be non-judgmental, compassionate, honest, upright (inyangamugayo).
- Be able to communicate effectively, comfortable discussing sensitive topics including sexuality-related matters.
- Be a member of a recognized association/ group of PLHIV is an added value

II.2.2.7.3.3. Exclusion criteria

The following are criteria that can lead to the exclusion:

- PE not fulfilling his/her role of a peer education
- Not behaving as a peer educator
- Change of residence/location
- Death of a PE
- Not willing to continue to be a PE

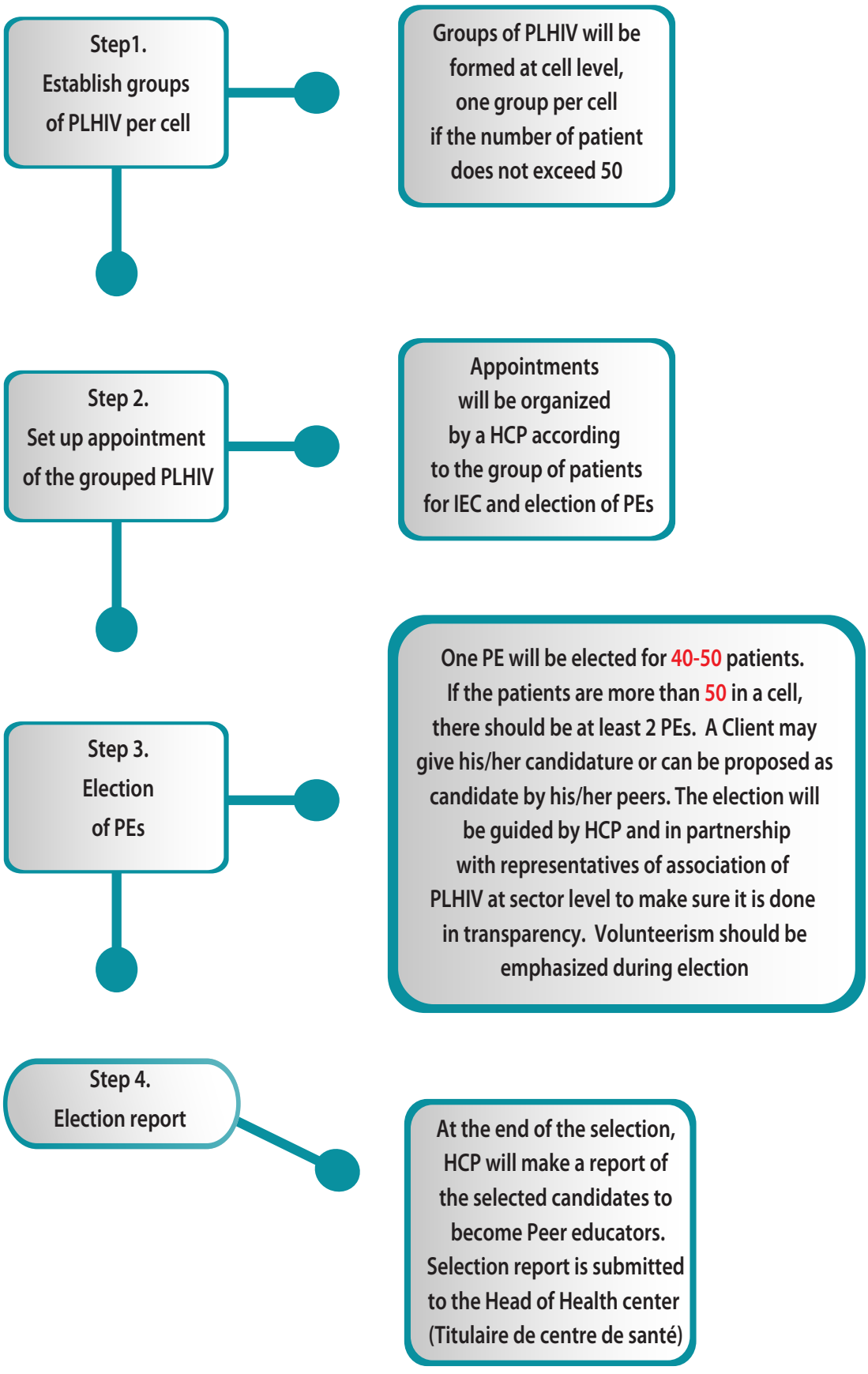
II.2.2.7.3.4. Selection/Election process of peer educators

A PE will be elected at the health facility level by the peers supported by a health care provider (HCP) working in ARV services.

Patients should be given enough information and well prepared in advance as well as the benefits for joining a group of peers. Patients will be encouraged to join support groups but it is patients' right to or not adhere to any group.

Below are the steps of electing peer educators:

Figure: II.1. Flow chart for PE elections



II.2.2.7.3.5. Roles/Scope and responsibilities of peer educators

The scope of work for a PE includes the following:

1. **Organize monthly support group meetings with peers at community or health facility as convenient.**

The meetings are suggested to be organized at a convenient time for participants (e.g in the evening, weekend or any time agreed upon). These meetings will include the following activities:

- PE leads the group education on ART adherence
- Experience sharing and challenge on adherence:
- Drug storage
- Health status in general (any illness)
- Linkages and referral to existing services in the community-based on needs.
- Positive living
- Sensitize group members to HTS amongst dependents/ family members,
- Discuss on other topics related to health (STIs, TB, FP, Condoms use, PMTCT, nutrition, to name a few)

2. **Conduct home visits**

- Home visits should be catered to the client's needs and willingness to participate. If a quarterly appointment is missed, the health care provider should inform the PE the same day. In case, home visit should be made within 24 hours; and the outcome should be reported immediately to the health care provider. Individuals choosing not to be enrolled in the peer education model will require follow up by a health care provider.
- Missing the appointment at the health facility without prior communication.
- Failure to attend support group meeting without prior communication
- Conducting follow up visits to track the progress of previous visits.

When conducting home visits, the PE should address the following:

- ART literacy
- Drug storage
- Health status in general (Any illness)
- Broader psychosocial needs
- Complaints related to common opportunistic infections (TB/STIs)
- Nutrition including breastfeeding and food security
- Adherence
- Sexual and reproductive health

3. **Conduct the referral and linkages at HCP level.** The referral and linkage is both ways: from HCP to the peer educators and peer educators to HCP.

4. **Facilitate referral and linkages with available services in the community** (including collaboration with other community based volunteers)

5. **Sensitize the community on HIV testing services**

6. **Produce a report of the activities performed**

II.2.2.7.3.6. Capacity building of peer educators

Building the capacity of PEs (as they will serve as active givers and receivers of prevention, care and treatment, and support services) will ensure greater involvement of people living with HIV.

Community-based PEs can also contribute to increased uptake of care and treatment services, adherence to treatment, treatment literacy, and improved quality of HIV/AIDS services in Rwanda.

The capacity building activities include:

- Reviewing the PE training manual by central level/RBC
- Training health providers at health centers to train peer educators
- Training peer educators. Every new peer educator must be trained before starting responsibilities
- Organizing the refresher training according to the new guidelines

II.2.2.7.3.7. Leadership, Coordination and implementation

- Overall leadership and coordination is for MOH through RBC
- The implementation is led by the Rwanda Network of PLHIV (RRP+) in close collaboration with health facilities and community-based partners/stakeholders

RRP+ being a network of PLHIV and based on its expertise in implementing peer education approach with a decentralized structure of its members up to sector level, with staff on the field, their role will be crucial to support DSDM implementation. A set of activities will be conducted mainly quarterly supervision conducted by Field Officer and **quarterly** coordination meetings. Monthly supervision will be aiming at (i) coaching the PE when providing the PE sessions (ii) strengthening the collaboration with health facilities (iii) identifying the challenges encountered by PE and patients at the community level and address them or escalate to higher level, (iv) documenting and ensure that the PE supports their peers regularly through home visit and monthly meeting.
The findings from **quarterly** supervisions will be shared during the **bi annual** coordination meetings organized at national level. Coordination meetings will involve different stakeholders including health facilities, NGOs,MoH-RBC, local government in order to share with them the findings, best practices, lesson learnt from the field and discuss how challenges can be addressed.

RRP+ will have to share the compiled report to central level (MoH/RBC), Local leaders, Heads of Health facilities which should include recommendations from the beneficiaries.

II.2.2.7.3.8. Monitoring, Evaluation and Learning

A PE will have a checklist of tasks that will be used during the home visit. S/he will compile the information collected and submit a monthly report to the health center.

The health care provider will have a tool that will be used to compile monthly reports from peer educators into a quarterly report. The flow of reporting will go into the following steps:

- Health care provider (HCP) convenes a peer educators' (PE) monthly Organizational meeting at health facility. All the Peer educators reporting to a specific health facility will attend this meeting as it will be an opportunity for review and compilation of different reports.
- The health care providers at health center level compiles monthly reports from peer educators and

enter the report into HMIS.
RRP+ will also submit a quarterly narrative report detailing how the work of PE has been conducted, key successes, lessons learned, challenges and propose recommendations.

The Health facility leadership in collaboration with RRP+ on quarterly basis will hold meetings with all community-based partners and key local authorities to share the progress and lessons learned about the peer support program in their respective locations.

II.2.2.7.3.9. Motivation of peer educators

The motivation of peer educators is important and will be done in different ways. The suggested ways of motivating the peer educators include:

- **Emotional and social motivations:** Respect and recognition are key motivational factors for PEs. PEs should be known by local authorities and given time to talk during various community gatherings when needed. Appreciation may also be provided through certificates of recognition.

- **Educational and developmental motivations:** PEs will have access to training and information to build their personal and professional skills. These include access to up-to-date facts and figures, good-quality training, opportunities to exchange lessons learned (eg, study tours, meetings among themselves and with local officials, community radio programs, conferences and peer educator fora), and opportunities to share their experiences and skills with others (eg, acting as mentors or trainers for new peer educators).

- **Financial motivation:** PEs will be incentivized to carry out their work. PEs may be supported in accessing loans and creating saving and lending groups.

However, the motivation will continually be reviewed, as needed especially financial motivation depending on available funds.

II.2.2.7.3.10. Special considerations

Some PLHIV depending on their particular characteristics will be encouraged by a HCP to form their own support groups at health facility level. Like others they will elect their PE respecting the ratio of 1 PE per 40 to 50 patients at maximum. The groups include:
1)Key populations (female sex workers and Men who have sex with men),
2)Adolescents (in and out schools) and young adults in the range of 15 to 24 years old.

II.2.2.7.3.11. Key Indicators to be reported by peer educators

- Number of patients followed up by a PE (disaggregated into stable and unstable)
- Number of patients who missed monthly support group meeting
- Number of home visits conducted
- Number of patients referred/linked to other services

II.3. NUTRITION ASSESMENT, CARE AND SUPPORT(NACS)

Nutritional assessment, counseling and support (NACS) are essential pillars and constitute an important component of care and treatment of PLHIV. Malnutrition management should be done as per the national protocol of management of Malnutrition

II.3.1. Introduction

Nutrition and HIV are strongly interdependent and interconnected and aggravate each other in a vicious circle. HIV can cause or worsen under nutrition by causing reduced food intake, increased energy requirements, and poor nutrient absorption. Under nutrition in turn further weakens the immune system, increasing vulnerability to infection and worsening the disease's impact.

Nutrition care and support helps PLHIV maintain and improve their nutritional status, improve their immune response, manage the frequency and severity of symptoms, and improve their response to antiretroviral therapy (ART) and other medical treatment.

Nutritional Assessment, Counseling and Support (NACS) are essential pillars and component of Care and Support for PLHIV. The purpose of this chapter is to provide practical guidance to health care providers on how to ensure nutritional monitoring of PLHIV.

The detailed knowledge and skills on nutritional management are developed in the national protocol for the management of malnutrition

II.3.2. Components of NACS

II.3.2.1. Nutrition Assessment

Nutritional assessment must be done at every clinical visit whereby measuring all anthropometric parameters, classifying and plotting them to WHO charts/BMI Curve in patient file.

For severe acute malnutrition with complications , the client should be treated as inpatients
For PLHIV with severe acute malnutrition without complications treated as outpatient, follow-up should be done weekly for children and 2 weeks for adults.

For PLHIV with moderate malnutrition, follow-up should be done monthly.

Good nutrition care starts with good assessment (measurement and classification) of nutritional status. Nutrition assessment is a critical first step in improving and maintaining nutritional status. NACS aims to establish routine nutrition assessment as an integral component of Health facility screening, care, and support.

Nutrition assessment will help to:

- Identify medical complications that affect nutritional status
- Track growth and weight trends
- Detect diet habits that make it difficult to improve health or that increase the risk of disease
- Inform nutrition messages and counseling

II.3.2.2. Nutritional counseling

Nutritional counseling, when informed by nutrition assessment, assists clients to understand nutritional needs, identify constraints and options for improved diet, and plan feasible dietary actions to achieve or maintain good nutritional status.

Nutrition counseling is an interactive process between a client and a trained counselor that uses information from nutrition assessments to prioritize actions to improve nutritional status.

Counseling helps identify client preferences, barriers to behavior change, and possible solutions to overcome those barriers.

With this information, the client and care provider jointly plan a feasible course of action to support healthy practices.

The health care provider may use job aids to select appropriate messages and guide counseling sessions. Group education on key nutrition topics can be provided in health facility waiting rooms or for community groups using various print and audiovisual media.

II.3.2.3. Nutritional Support

Nutritional support includes therapeutic, supplementary food and micronutrient supplements for the clients with or at risk of under nutrition.

Nutrition support includes:

- Therapeutic and supplementary foods to treat clinical malnutrition
- Complementary food supplements for children 6–24 months old to prevent malnutrition
- Micronutrient supplements to prevent vitamin and mineral deficiencies
- Referral and linkage

II.3.2.3.1. Nutrition Assessment Counseling and Support of Children under 5 years living with HIV

Strong recommendations

HIV-infected children should be routinely assessed for nutritional status every month, this includes weight for height, weight for age and height for age.

- HIV-infected children who are moderately or severely malnourished should be managed as per the current national protocol for nutrition
- HIV-infected infants and children between 6 and 59 months of age should receive high-dose vitamin A supplementation every 6 months as per the current national guidelines for nutrition
- HIV-infected infants and children between 6 and 24 months of age should receive 2 to 3 sachets a week of Micronutrient Powders (MNP) supplementation
- HIV-infected children who have diarrhea should receive zinc supplementation
- For infants and young children known to be HIV positive, mothers are strongly encouraged to exclusively breastfeed for 6 months and continue breastfeeding as per recommendations for the general population (at least up to two years of age.)

Table II.5. Nutrition Assessment, Diagnosis and Interventions for under 5 years

For the acute malnutrition assessment of children under five refer to WHO, 2006 Unisex Weight/Height tables that are found in the patient file.

Assessment	Diagnosis	Intervention
Measure the height, weight and MUAC of the child, - Note the age in months -Observe the signs of malnutrition -Record in the patient file	Severe acute malnutrition if weight/ Height= <3Zs, If MUAC <12 cm If bilateral Oedema Severe chronic malnutrition if Height/ Age = <3Zs,	If medical complications (e.g., infection, severe anemia, dehydration....) Admit or Refer the child to Hospital. Treat urgently complications Give theF75, F100orRUTF according to the national guidelines (page...) and continue breast feeding if the child is under18 months If no medical complications: Treat as an outpatient with RUTF and continue breastfeeding if the child is under 18 months Provide appropriate nutrition counseling Follow-up must be done weekly Refer to community nutrition-sensitive interventions
	Mild or moderate acute malnutrition if weight / height >-3ZS-2Zs/ 2 ZS-1Zs and MUAC between 12cm and 13 cm Moderate chronic malnutrition if height /age >-3ZS-2Zs/	If medical complications, admit the child and treat these complications Give the CSB+ and continue breast feeding if the child is under18 months. Provide appropriate nutrition counseling Follow-up must be done monthly Refer to community nutrition-sensitive interventions
	Good nutritional status if W/H>-1ZS and MUAC>>-13cm	Praise the mother and encourage him. Continue breastfeeding if the child is below 18 months Provide appropriate nutrition counseling
	If the Weight/ Height is ≥3 SD: overweight or obesity.	Identify the possible causes and provide appropriate dietary counseling to prevent obesity and complications

II.3.2.3.2. Nutritional management for 5-19 years living with HIV

Assessment	Diagnosis	Intervention
Measure the height and weight, know the age Observe the signs of malnutrition and Record	Refer to WHO 2006 growth tables for boys. Severe acute malnutrition if Weight for Height <3Zs or oedema	If medical complications (e.g., infection, severe anemia, dehydration....) : • Admit or refer the child to Hospital. • Treat urgently complications • Give the F75, F100 or RUTF and continue breast feeding if the child is under18 months If no medical complications: • Treat as an outpatient with RUTF and continue breastfeeding if the child is under 18 months. • Provide appropriate nutrition counseling • Follow-up must be done weekly
	Mild and moderate Malnutrition if the weight for height - -2ZS to -1Zs: Mild/ >-3ZS to -2Zs: moderate Good nutritional status if weight for Height > 1ZS	If medical complications, treat these complications, give CSB+. If no complications give CSB+ and continue counselling Provide appropriate nutrition counseling follow-up every monthly If medical complications, treat these complications Give the CSB+. If no complications give CSB +. Provide appropriate nutrition counseling.
	If the Weight/ Height is ≥3 SD: overweight or obesity.	Identify the possible causes and provide appropriate dietary counseling to prevent obesity and complications

II.3.2.3.3. Nutrition Assessment Counseling and Support for Adults living with HIV

Among adults, weight loss and wasting are strongly associated with poor health outcomes for PLHIV. Maintaining weight is a key component of any health care plan for PLHIV. Many anthropometric indices can be used for adults but the most commonly used are: BMI and MUAC. PLHIV at risk of malnutrition should be weighed every month, and keep a record of weight to detect changes as quickly as possible. Weight should be assessed using the same scales.

Table II.6. Assessment, Diagnosis and Interventions adults living with HIV

Assessment	Diagnosis	Intervention
Measure weight and height then calculate BMI= Weight(kg)/ height(m2)	If BMI 18.5-24.9 or MUAC ≥23: Good Nutritional status	Encourage the client and ensure regular monitoring
	If BMI between 16-18.49: malnutrition or MUAC between 19-23 cm	Treat with CSB+(250gr/day) and identifying possible causes and provide appropriate nutritional counselling
	If BMI <16 or MUAC <19 cm Severe malnutrition	Treat with RUTForF75, F100according to the national protocol Admit or Refer to the Hospital if medical complications.
MUAC if unable to measure height and weight or client is pregnant or lactating	If BMI between 25 and 29.9: Overweight If BMI≥ 30: Obesity	• Identify the possible causes and provide appropriate dietary counselling to prevent obesity • Identify the possible causes and provide appropriate dietary counselling to prevent complications

II.4. CARE AND TREATMENT

The initiation of ART for all PLHIV as soon as they are tested HIV positive is the mainstay of care and treatment.

II.4.1. Goals of Antiretroviral Therapy (ART)

Initiation of ART has several different goals: (1) to reduce the amount of virus in human body (viral load) to undetectable levels, (2) to improve the immune reconstitution, (3) to reduce the transmission of HIV (4), to minimize the risk of resistance and, (5) to minimize the cost of care.

II.4.2. Differentiated Service Delivery Model (DSDM)

DSDM is an approach that simplifies and adapts HIV services and puts patients into visits categories according to their needs.

a. Definition

WHO defines "Differentiated service delivery model "(DSDM) as an approach that simplifies and adapts HIV services to better serve the needs of people living with and at risk of acquiring HIV and reduce unnecessary burdens on the health system.

b. Rationale

Treat All strategy" implementation substantially increased the number of patients on ART and increased the burden on health care system.

To reflect the preferences and expectations of various groups of PLHIV and to reduce unnecessary burden on the health system and multiple clinical visits for patients, HIV national program has adopted a differentiated model for service delivery.

DSDM aims to adapt patient clinical visits and pharmacy pick up based on patients' categorization.

c. Patients categorization

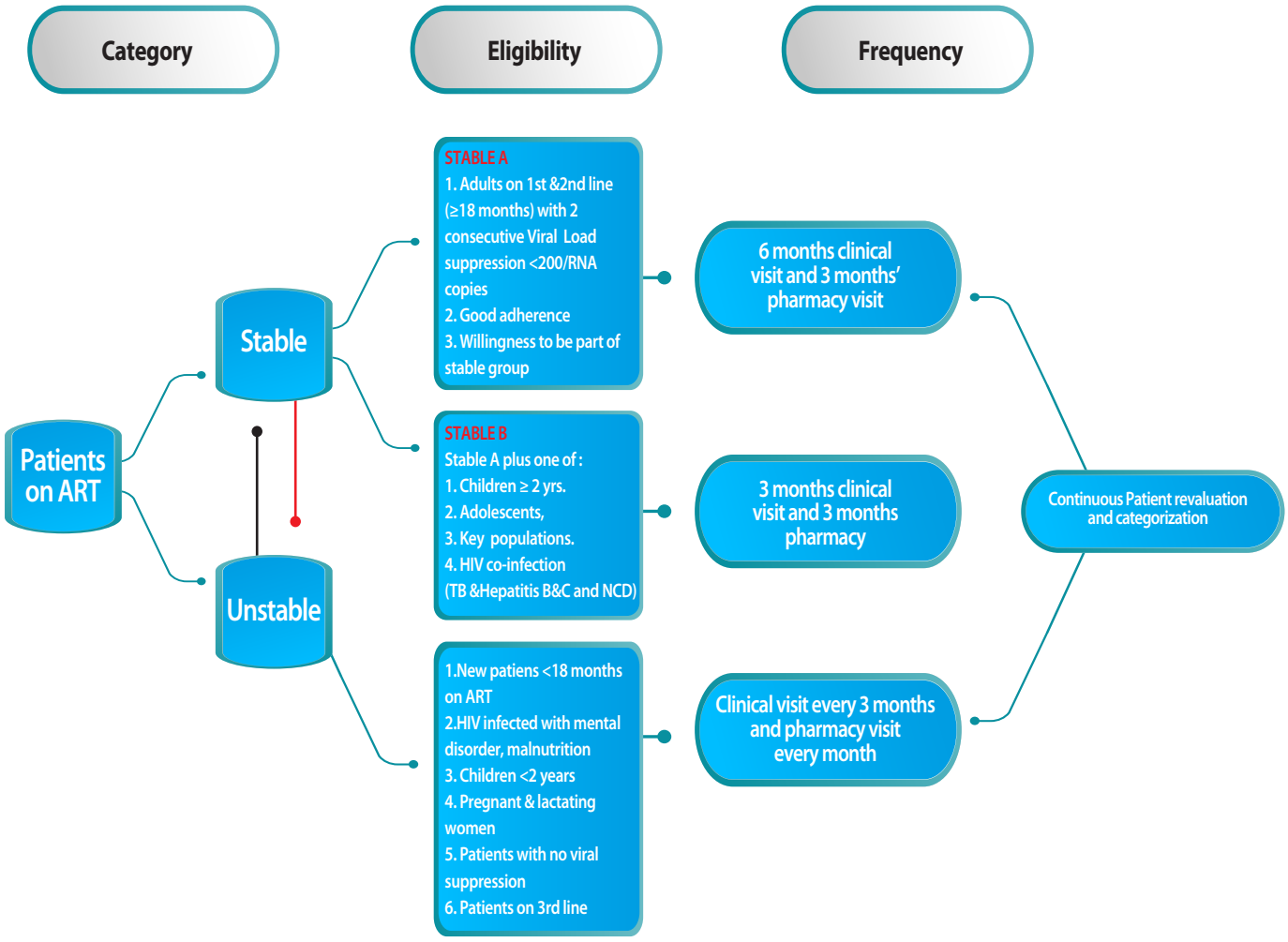
DSDM categorizes HIV infected patients on ART into two broad groups which are:

- Stable patients
- Unstable patients

Health care providers will use patient registers and patient charts to classify patients receiving ART in different two mentioned categories.

These two groups are defined in the following flow chart.

Figure II. 1. Flow chart for Differentiated Service Delivery Model (DSDM)



Note :

- ***Patients can move to unstable to stable and vice versa***
- ***Stable group is composed by two subgroups Stable A and Stable B***
- ***Patients can also move from stable A to stable B vice versa***

Health Care Providers (HCP) supported by mentor have to coordinate routine clinical consultations, planned medicine pickup with laboratory visit to reduce visit frequencies for clients.

Health care provider will map stable and unstable clients and group them as a cohort according to their locations.

DSDM to be successful, there is a need of community support through peer education approach.

Peer education is the sharing of knowledge by someone who is either directly a part of the same social group as the individual with whom the knowledge is being shared, or who is of the same age, gender, sexual orientation, race and ethnicity, occupation, socio-economic, and/or health status.

But, most importantly, they inspire trust.

The role of health facility will be:

- To support PLHIV to elect their peer educators(PE)
- To Train and supervise peer educators
- To link new PLHIV enrolled in the HF with PE
- To compile, analyze reports from PE and provide feedback

II.4.2. HIV CARE AND TREATMENT FOR CHILDREN UNDER 10 YEARS

Clinical and laboratory evaluations are the cornerstones of care and treatment of HIV positive children of ≤10 years old.

The preferred 1st line option for children of ≤ 3 years old is ABC+3TC+LPV/r.

The preferred 1st line option for children of 3 to ≤10 years is ABC+3TC+EFV.

TDF may be considered for children of >2 years old in case of HBV co-infection.

For children of ≤ 3 years old, the preferred LPV/r formulation is pellet.

TB screening is mandatory for all children at enrolment and at each clinical visit

IPT (Isoniazid 10mg/Kg)is used for 6 Months to all HIV children of ≤5y.o without active TB but with a history TB contact.

Anti-TB and ART should be initiated immediately and within 8 weeks respectively.

For TB-HIV co-infected children of≤3y.o ,ABC+AZT+3TC and for the ones of 3 to 10 y.o, EFV based regimen, are the preferred options until when the course of anti-TB ends.

The treatment failure(TF) is defined by the virological failure (plasma viral load >1000 copies/ml) based on two consecutive viral load measurements after 3 months with intensive adherence support.

The management of 1st line TF is done, after highlighting its probable cause and act as shown by figure II.2.

If the cause of TF requires shift to 2nd line ,please refer to Table II.10.

The recognition of 2nd line TF is similar to the 1st line TF and the shift to 3rd line is guided by Genotyping and expert opinion.

The monitoring of children on ART comprises clinical and laboratory monitoring in order to assess treatment response and potential drug toxicity, it's done as shown by the table II.12.

II.4.2. 1. Initial clinical and laboratory evaluation

Clinical evaluation

* General history taking and comprehensive physical examination
* WHO HIV staging in children
* Growth assessment and malnutrition screening
* Neurodevelopment and intellectual assessment
* Drug history for the child and mother

Laboratory evaluation

* Baseline:

- CD4 count (% preferred if < 5years old)
- CD4 absolute figures for children of 5years and above
- Hepatitis B surface antigen,
- Hepatitis C antibody,
- Liver Function (ALAT*, ASAT*)
- If creatinine clearance is needed for children younger than 10 years (in cases of HIV coinfection eg. Hepatitis B) please refer to expert opinion
- Cryptococcus antigen (if CD4 count < 200 cells/mm3) < 5years old consider CD4<20%.

* Additional lab exams as clinically indicated

II.4.2. 2. ART regimen for children younger than 10 years of age

Table II.7. First line options for ART regimen in children

Preference / Alternatives	Children<3 years	Children of 3-10 years old
Preferred	ABC+ 3TC+ LPV/r	ABC+3TC+ EFV
Alternatives	AZT + 3TC + LPV/r	AZT + 3TC + EFV
	b) AZT + 3TC + LPV/r	HBV co-infection: TDF+3TC + EFV

1. **In case of Hepatitis B co-infection, TDF may be considered in children older than 2 years with expert opinion.**
2. **For children with more than 15kg, ATV/r can be used to replace LPV/r**
3. **From 3 years of age, a child can be switched from LPV/r to EFV based regimen if the VL is undetectable (<20copies/ml)**

II.4.2.2.1. Formulation and dosage of first-line ART regimen in children

For children younger than 3years the preferred LPV/r formulation is pellet (40mg/10mg oral pellet) due to its storage and palatability reasons.

For detailed ART dosage, refer to the dosing chart in the patient medical file.

II.4.2.2.2. HIV-TB Co-infection screening diagnosis and management in children younger than 10 years

All HIV positive children should be screened for active TB disease at enrolment and regularly at each encounter with a health worker or visit to a health facility.
Children having the following symptoms should be evaluated for TB disease:

- Any cough,
- Fever,
- Loss of weight
- History of contact with an infectious TB case.

Diagnosis of TB in children with history of contact with an infectious TB case bacteriologically confirmed:

- Ask for the following symptoms: Cough, Fever, Night sweats, weight loss
- Give Counseling for HIV Test
- Systematic chest X-ray

Isoniazid Preventive Therapy (IPT) in Children

Children ≤ 5 years old living with HIV who are unlikely to have active TB based on screening and normal chest x-ray and has been in contact with a TB case should receive 6months of IPT (10 mg/kg/day).
Children aged more than 5 years old will be advised to consult in case of cough and or other symptoms of TB.

a. Screening and diagnosis:

The following examinations are used to diagnose active TB infection:

- Sputum if child is able to produce sputum sample, induced sputum if available, or gastric aspirate if child unable to provide sputum sample (typically younger than 10 years old)
- AFB Microscopy with Ziehl Neelson stain and culture, if available GeneXpert (based on availability).
- Tuberculin skin test: A negative TST does not exclude TB disease. It may be negative despite the child having TB, especially in severe disseminated TB, malnutrition and HIV disease
- Chest X-ray

b. Management

Treatment of TB-HIV co-infection in Children

- As for TB uninfected children, all HIV-positive children with confirmed TB co-infection are eligible for ART regardless of CD4 count and clinical stage.
- ART should be started in any child with active TB disease as soon as possible and within eight weeks following the initiation of anti-TB treatment irrespective of the CD4 count and clinical stage
- The TB treatment in children diagnosed with TB disease should be initiated immediately. The TB treatment lasts for 6 months for newly diagnosed cases and for 8 months for previously treated cases, but lasts 12 months for meningeal and osteo-articular forms of TB disease.

1. **For more details on TB-HIV co-infection screening and management in children refer to the current TB-HIV algorithms**
2. **Children suspected of having extra-pulmonary TB should be managed at a referral centre. Fine needle aspiration (FNA) or a lymph node biopsy may be performed if a lymph node is suspicious for tuberculosis.**

Table II.8. TB Treatment for children: 2(RHZ)E/4(RH)

Phase	Months / Dosage	Drug	Paediatric tablets		
			5-7Kg	5-7Kg	15-20 kg
Intensive	2 months (56 doses)	(R60H30Z150)	1	2	3
		(R60H60)	1	2	3
		(E100)	1	2	3
Continuous	4 months (112 doses)	(R60H30)	1	2	3
		(R60H60)	1	1	2

Infant with weight below 4kg

DOSAGE	
Drug Name	**Dosage**
Rifampicin(R)	15mg/kg(10 to 20mg/kg),max600mg/day
INH(H)	10mg/kg(10 to 15 mg/kg),max300mg/day
Pyrazinamide(Z)	35mg/kg(30 to 40mg/kg)
Ethambutol(E)	20mg/kg(15 to 25mg/kg

Table II.9. ART and Anti-TB therapy in Children

Current ART	ART Adjustment with Anti-TB Therapy	
	Children < 3 Years Old	Children > 3 Years Old
ABC/AZT+ 3TC + EFV	ABC+AZT+3TC EFV currently not recommended under 3 years*	ABC/AZT+ 3TC + EFV
ABC/AZT+ 3TC+LPV/r	Increase NVP by 30%* Or switch to EFV if > 3.5kg	Substitute NVP with EFV
	ABC+AZT+ 3TC	Increase the dose of Ritonavir to achieve 1:1 ratio (LPV/r)
	Alternative: Substitute LPV/r with NVP increased by 30% for < 3.5kg	Alternative: ABC + 3TC + AZT (not a strong combination)
Note: If NVP dosing is increased, ALAT should be done at 2 weeks after initiation then at 1, 3 and 6 months.		

II.4.2.2.2. Management of Opportunistic Infections in Children

For management of common opportunistic infections refer to Annex__. of this guideline.

II.4.2.2.3. Identification and Management of unsuppressed viral load and Treatment Failure

Identification of Treatment Failure

The treatment failure is defined by the virological failure (plasma viral load >1000 copies/ml) based on two consecutive viral load measurements after 3 months with intensive adherence support.

Monitoring people living with HIV receiving ART is important to ensure successful treatment, identify adherence problems and determine whether and which ART regimens should be switched in case of treatment failure.

However, a poor immune reconstitution despite a good virological control is frequent during the first year of HAART.

This condition seems mainly driven by the age and the low baseline CD4 count of the patients.

The monitoring of ART response and identification of treatment failure are the same as for adolescent and adults except the following specifics to children.

Management of treatment failure

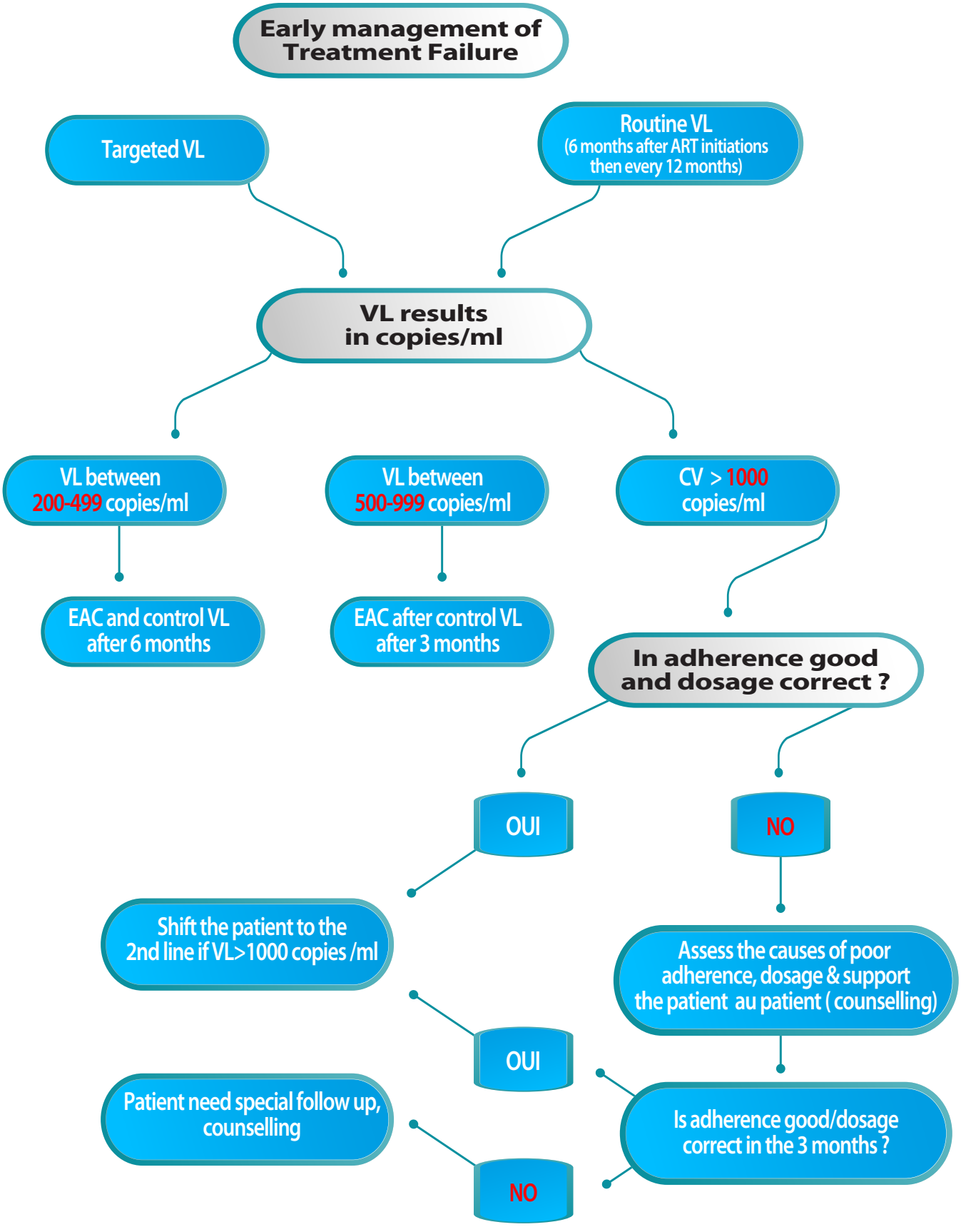
Below are the main steps in the management of treatment failure.

The first step in management of treatment failure is to assess probable causes of treatment failure, which can be related to Patient/care giver, drug, virus and provider

1. **Patient/care giver related causes:** Bad adherence, co-morbidity, malabsorption
2. **Drug related causes:** Pill burden, drug taste, side effects, drug-drug interactions
3. **Clinician related causes:** wrong prescription of the regimen, inadequate dosage, …
4. **Virus related causes:** Resistant mutations

Figure II.2. Early management of treatment failure

The next step will be to address the causes identified of treatment failure.



If the cause requires change in ARV regimen, refer to the summarized tables below.

II.4.2.2.4. Second-line ART in Children

Table II.10. Second Line ART in Children

First-line Regimen	Preferred Second-line regimen	Alternative Second-line regimen
Children < 3 years		
ABC + 3TC + LPV/r	AZT+3TC+RAL (Raltegravir)	AZT+3TC+LPV/r
ABC + 3TC + NVP	AZT+ 3TC + RAL	AZT+3TC+LPV/r
AZT + 3TC + LPV/r	ABC + 3TC + RAL	ABC + 3TC + LPV/r
AZT + 3TC + NVP	ABC + 3TC + RAL	ABC + 3TC + LPV/r
Children 3 to 10 years of ages less than 35 Kg		
ABC + 3TC + EFV	AZT+3TC+LPV/r if < 6years AZT + 3TC + ATV/r if > 6 years	AZT+ 3TC + RAL
AZT + 3TC + EFV or NVP	ABC + 3TC + ATV/r if > 6 years	ABC+3TC+ LPV/r if children less than 6 years

- **For children (3 to 10 years) with more than 35kgs change ABC to TDF**
- **Keep TDF in second line if active HBV infection (with Expert Opinion)**
- **ATV cannot be co-administered with rifampicin,**
- **ATV boosted with RTV (ATV/r) is recommended for children aged at least 6 years (see dosing below)**

II.4.2.2.5. Dosing of Second-line Drugs in Children

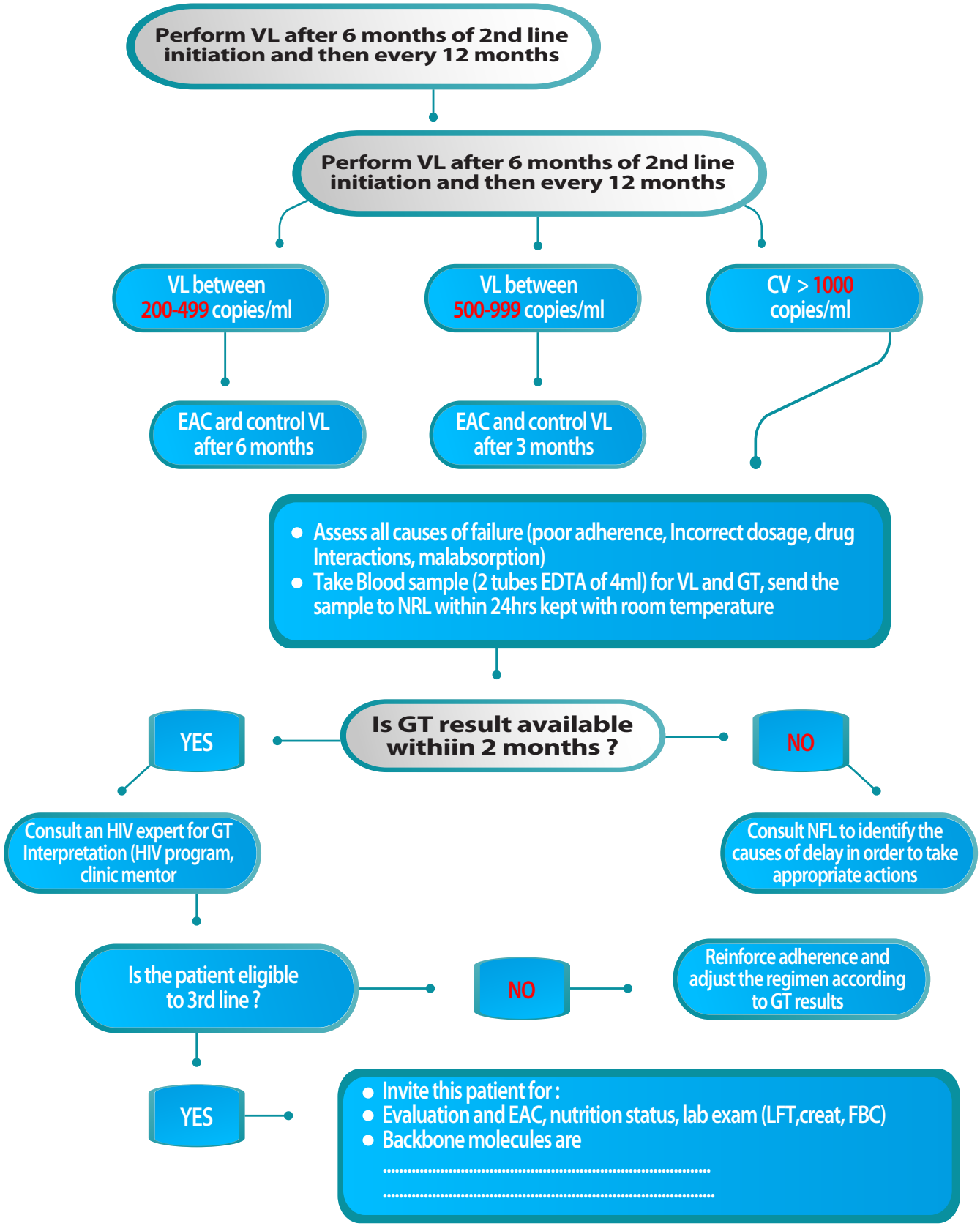
- ABC/TDF/3TC and LPV/r refer to the first line regimen dosage in the patient medical file (Paediatric dosage)
- ATV/r capsules: 100 mg, 150 mg, 200 mg, and 300 mg

Weight (kg)	Once-Daily Dose
15–<20 kg	ATV 150 mg + RTV 100 mg, both once daily with food
20–<40 kg	ATV 200 mg + RTV 100 mg, both once daily with food
≥40 kg	ATV 300 mg + RTV 100 mg, both once daily with food

Note: *FDC is preferred where possible

- In some cases, switching to second line may require genotyping (clinical decisions in case of poor adherence suspicion)

Figure II.3 Management of Treatment Failure for patients on second line regimen



*EAC: Enhanced adherence and counselling

II.4.2.2.6. Regimens for Third-line ART in Children

The third line regimen will be guided by genotyping results and will require expert opinion.

The available drugs for the third line treatment: ETV (Etravirine), DRV/r (Darunavir), RAL (Raltegravir)

II.4.2.2.7. Monitoring of children on ART

Clinical and laboratory monitoring of children on ART play a key role to assess the treatment response and potential drug toxicity. Note that ART is a treatment for life but could be changed in the following cases:

- Drug toxicity or severe side effects
- Drug interaction
- Co-infection
- Treatment failure confirmed by viral load
- Others

II.4.2.2.8. Recommendations on Monitoring of children

Table II.12. Recommendations on Monitoring of children

Period	Laboratory	Clinical	Psychosocial and Nutrition
M0 (Baseline	Creatinin, CD4, Gen expert, HBsAg, HCV Ab, CRAG if CD4 <200/ml, LFTs if NVP or DTG	Comprehensive clinical assessment (TB, STI & NCD screening	Readiness assessment to start ART Growth monitoring,
M1	Creatinine (Clearance) if TDF	Screen side effects and comprehensive Clinical assessment	Adherence and growth monitoring
M2	None	+	+
M3	Creatinine (Clearance) if TDF	+	+
M6	VL, Creatinine (Clearance) if TDF, LFTs if NVP or DTG	+	+
M12	Creatinine (Clearance) if TDF	+	+
M18	VL, Creatinine (Clearance) if TDF, LFTs if NVP or DTG (yearly)	+	+
After 18months	VL every 12 months, Creatinine (clearance) if TDF every 6 months	comprehensive clinical assessment, side effects screening	Continue Adherence support

II.3.2.HIV CARE AND TREATMENT FOR ADOLESCENTS & ADULTS

- *Clinical and laboratory evaluations are the cornerstones of care and treatment of HIV positive adolescents and adults.*
- *Renal creatinine clearance is mandatory for adolescents and adults since they initiate with TDF based regimen.*
- *The 1st line comprises 2 options: NNRTI (NVP,EFV) and DTG based regimens.*
- *New HIV patients (adolescents and adults) to initiate ART who weigh ≥35 kgs will take ABC/TDF+3TC+DTG. refer to table II.13.*
- *Existing patients on ART,they will keep 2NRTI +1NNRTI (EFV or NVP).*
- *AZT is to be phased out in 1st line due to its cross mutations to other NRTIs, the official phase out date will be communicated depending on stock in country.*
- *TB screening should be done at enrolment and at each clinical encounter*
- *All HIV positive adolescents and adults diagnosed with TB should initiate anti-Tb immediatey and ART within 2 weeks if CD4<50 and between 2 and 8 weeks if CD4>50.*
- *In case of TB-HIV co-infection: if DTG based regimen, double the dose of DTG, if NVP based regimen, replace NVP by EFV, if EFV based regimen no adjustment should be done, If PI based regimen ,rifampicin is replaced by Rifabutin.*
- *Cotrimoxazole should be given to patients with advanced diseases only*
- *The identification of TF and Its management are the same as in children.*
- *PI(LPV/r and ATV/r) and DTG based regimen constitute the 2nd line with TDF maintained in HBV co-infection.refer to table II.18.*

II.3.2.1. Initial clinical and laboratory evaluation

Clinical evaluation

- General health status
- Past medical history:
- Drug history
- Sexual History,
- History of STIs; past HIV-related illness
- Screening:
- Opportunistic infections (eg: TB, STIs etc.) and HIV staging (WHO stage)
- NCDs
- Mental health illness
- Comprehensive physical examination

Laboratory evaluation

* Baseline:

- CD4 Cell Count,
- Cryptococcus antigen (if CD4 count < 200cells/mm3)
- Renal Function (Creatinine and calculation of creatinine clearance)
- Hepatitis B surface antigen (Ag HBs),
- Hepatitis C antibody (HCV Ab),
- LFTs (for patients starting NVP based regimen)
- Gene Xpert if TB screening is positive

* Additional investigations as clinically indicated

Creatinine clearance calculation

If Creatinine machine reports in mg/dl:

(140-age) X weight (kg)
---------- X 0.85 for a woman and X 1 for a man
72 X creatinine (mg/dl)

Or

If Creatinine machine reports in µmol/L:
(140-age) X weight (kg)
---------- X 0.85 for a woman and X 1 for a man
0.81 X creatinine (µmol/L)

Interpretation of Renal Creatinine Clearance

≥ 90 ml/min. = Normal
60-89 mL/min = Mild renal insufficiency
30-59 ml/min = Moderate renal insufficiency
≤ 29 mL/min = Severe renal insufficiency

Note:

- If clearance > 50 mL/min, OK for TDF; if clearance < 50 ml/min, give ABC
- If decrease in creatinine clearance ≥ 15%, consider possible TDF toxicity and switch to ABC.

II.4.2.2. ART Regimen

II.4.2.2.1. First line ART regimen options

There are two options recommended in first line regimen:
1. NNRTI based
2. DTG based

Table II.13. New clients to initiate ART

	NRTI	Integrase Inhibitor (II)
1	Tenofovir(TDF)**+ Lamivudine (3TC)*	Dolutegravir (DTG)
2	Abacavir (ABC) + Lamivudine (3TC)*	Dolutegravir (DTG)
Note: For adolescents less than 35kgs replace DTG by EFV		

Table II.14. Existing clients on ART

	NRTI	NNRTI
1	Tenofovir(TDF)** + Lamivudine (3TC)*	Efavirenz (EFV)
2	Tenofovir(TDF)** + Lamivudine (3TC)*	Nevirapine (NVP)
3	Abacavir (ABC) + Lamivudine (3TC)*	Efavirenz (EFV)
4	Abacavir (ABC) + Lamivudine(3TC)*	Nevirapine (NVP)

* ***Lamivudine can be substituted by Emitricitabine (FTC)***
** ***TDF can be substituted by Tenofovir Alafenamide(TAF) from 12years old***
- **If contra-indication to Efavirenz prefer ATZ/r or Lop/r**
- **If contra indication to TDF then give Abacavir**
- **NVP should be phased out due to its low efficacy. This will be effective based on an official communication considering the stock in country**

II.4.2.2.2. Dosage and administration of first-line regimen

Table II.15. Dosage and administration of first-line regimen

Molecule	Dosage
Tenofovir (TDF	300 mg once a day
Abacavir (ABC	300 mg twice a day or 600 mg once a day
Lamivudine (3TC)	150 mg twice a day or 300 mg once a day
Emtricitabine (FTC)	200 mg once a day
Dolutegravir (DTG)	50 mg once a day
Efavirenz (EFV)	600 mg once evening
Nevirapine (NVP)	200 mg once a day for 14 days and then 200 mg twice a day

II.4.2.2.3. Prescription of ART first line regimen

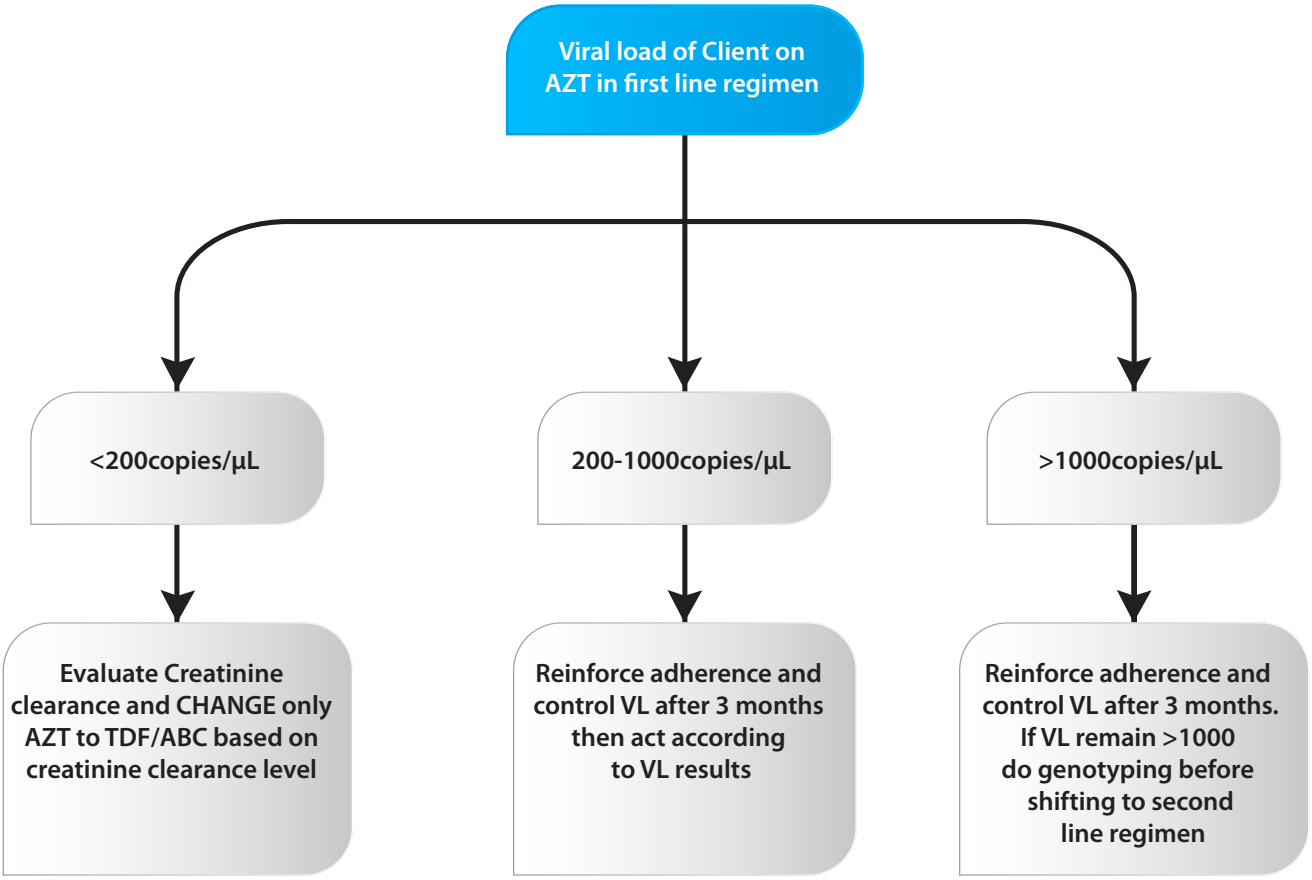
1) TDF + 3TC + DTG: TDF300mg+ 3TC300mg (OD) + DTG (50 mg OD)
2) TDF + 3TC + EFV (FDC): TDF 300mg + 3TC 300mg + EFV* 600mg
3) ABC + 3TC + EFV: ABC 600mg+ 3TC300mg+ EFV 600mg
4) ABC/TDF+ 3TC + NVP:

- Initial Phase (15 Days): ABC600mg/ TDF 300mg + 3TC 300mg + NVP (200 mg OD)
- Maintenance phase: ABC600mg/ TDF 300mg + 3TC300mg(OD) + NVP (200 mg BID)

- Encourage taking EFV based regimens in the evening before 8:00pm due to daytime side effects
- Patients with EFV associated side effects should be advised to take it, either 1-2 hours before or after meals to minimize side effects

II.4.2.2.4. Phasing out of AZT in first line regimen

AZT mutations lead to cross mutations to all NRTI molecules compared to other NRTIs. There is a number of clients taking AZT as their first line NRTI that may cause the loss of all NRTIs in case of treatment failure. That is why AZT phase out in first line regimen is recommended per the algorithm below:



II.4.2.3.HIV-TB co-infection

II.4.2.3.1. Screening and diagnosis of TB-HIV co-infection

All HIV-positive adolescents and adults should be screened for active TB infection at enrolment and regularly at each clinical encounter with a clinical algorithm using the following symptoms or signs:

1. Current cough
2. Fever
3. Night sweats
4. Weight-loss
5. Contact with someone known to have TB

II.4.2.3.2. Treatment of TB-HIV Co-infection

The following are national recommendations on TB-HIV Management:

1. The standard first-line anti-tuberculosis regimen in Rwanda is 2RHZE7/4RH7 (see Rwanda National TB Guidelines for detailed instructions regarding management of TB).

2. TB-HIV Co-infected patients on PI based ART regimen should receive anti TB treatment based on Rifabutin to replace Rifampicin
3. Patients with MDR TB should be referred to appropriate treatment centers
4. TB-HIV Co-infected patients should receive Pyridoxine 25mg daily (100mg daily for MDR-TB/HIV).

In co-infected patients, the priority is to first treat TB basing on patient's clinical status and CD4 count. Time for ART initiation varies between 2 and 8 weeks as follows:

* CD4 count <=50: Start ART within 2 weeks
* CD4 count >50: Start ART between 2-8 weeks.

Table II.16. Recommendations on TB-HIV Management

For more details on TB screening, diagnosis and management among HIV+ adolescents and adults, refer to the current algorithms of TB-HIV

People on different ART regimens	ART regimens adjustment
TDF/ABC+3TC+DTG	Double dosage of DTG (50mg BID) if Rifampicin is used
TDF/ABC/AZT + 3TC + EFV	No adjustment (EFV remains 600mg daily)
TDF/ABC/AZT + 3TC + NVP	Substitute NVP with EFV
TDF/ABC/AZT + 3TC + LPV/r/ATV/r	Substitute Rifampicin with Rifabutin
ETV + DAR/r + RAL	Substitute Rifampin with Rifabutin
Rifampicin decreases Fluconazole concentration: increase Fluconazole from 800 to maximum dose (1200mg) and double dosing if maintenance.	

II.4.2.3.2. Cotrimoxazole prophylaxis

Based on the evidences and WHO recommendations, Cotrimoxazole should be given to patients with advanced disease. The following are the new guidelines for Cotrimoxazole prophylaxis elligibility in Rwanda:

1. All children HIV+ under five years old
2. All new patients(all ages) up to suppression(VL<200copies)
3. All existing patients of 5 years old and plus not suppressing their viral load (VL>200 copies).

Note: Cotrimoxazole should be phased out to all 5+ years old existing patients'with viral suppressions (VL<200 copies/µL).

II.3.2.3.3. Management of Treatment failure among adolescents and adults

- **The monitoring of ART response and identification of treatment failure are the same as for all children**
- **For early management of treatment failure as well as second line treatment failure refers to the treatment failure algorithm in children section.**

I.4.2.3.4. Recommended Regimens for First and Second-line ART

Table II.17 Recommended Regimens for Second-line ART in adults after Failure of Specific First Line Regimens

First-line Regimens	Second-line Regimens
TDF+3TC + EFV/NVP/DTG	AZT+3TC+ATV/r or LPV/r* /DTG**
ABC+ 3TC+EFV/NVP/ DTG	AZT+3TC+ATV/r or LPV/r * /DTG**
AZT+ 3TC+EFV/NVP	TDF/ABC+ 3TC+ATV/r or LPV/r *
PI based as first line	Based on genotyping results

*** In case of Hepatitis B co-infection, maintain TDF: AZT + TDF + 3TC + ATV/r or LPV/r**
**** if a patient fails DTG in first line, DTG can be used in second line based on genotyping results where possible.**

II.4.2.3.5. Dosing of Second Line ART

Table II.18. Dosing of Second Line ART in adults

Molecules	Dosage
DTG 50mg	50mg
ATV/r 300 mg /100 mg (FDC)	300/100 mg orally once a day
AZT+ 3TC+EFV/NVP	LPV/r 200mg/50 mg (FDC)

For TDF, ABC, AZT refers to the dosing table for the first line regimen

Note: The pill burden for LPV/r regimen is 2 pills twice a day compared to ATV/r which is one pill once per day (Both in combination with NRTIs.

II.4.2.3.6. Recommended Regimens for Third-line ART

Generally, in Rwanda, the 3rd line regimen combination is: RAL/ETV/DRV/r* but:

- The 3rd line regimen must only be given upon expert consultation and usually with the assistance of genotyping results.
- Before prescribing third-line therapy, the patient MUST undergo extensive additional adherence counselling and should have a treatment partner involved with assisting in adherence. Adherence counselling is critical to the success of this regimen.
- NRTI backbone may be necessary based on genotyping test or in case of Hepatitis B co-infection

Any patient on the second line with VL > 1,000 copies/ml based on 2 consecutive viral load measurements after 3 months with adherence support is eligible for genotyping.

II.4.2.3.7. Dosing of Third Line Drugs

Table II.19. Dosing of Third Line ART in adults

Molecules	Dosage
Raltegravir	400 mg twice a day
Ritonavir	100 mg twice a day
Darunavir	600 mg twice a day
Etravirine	200 mg twice a day

II.4.2.3.8. Monitoring of adolescents and adults on ART

Clinical assessment and laboratory tests play a key role in assessing adults on ART initiation and then monitoring their treatment response and possible toxicity of ARV drugs.
Note that once started, ART is a treatment for life but should be changed in the following cases:

- Drug toxicity
- Drug-drug interaction
- Co-infection
- Treatment failure confirmed by viral load

Table II.20. Recommendations on Patient Monitoring

Period	Laboratory	Clinical	Psycho
Mo (Baseline)	Creatinin, CD4, Gen expert, HBsAg, HCV Ab, CRAG if CD4<200/ml, LFTs if NVP or DTG	TB, STIs and NCDs Screening	+
M1	Creatinine (Clearance) if TDF	TB and STI Screening	+
M2	None	+	+
M3	Creatinine (Clearance) if TDF	+	+
M6	VL, Creatinine (Clearance) if TDF, LFTs if NVP or DTG	+	+
M12	VL, Creatinine (Clearance) if TDF, LFTs if NVP or DTG (yearly)	TB, STIs and NCDs Screening	+

Note:
1. Follow up CD4 should be done only for clients that have not suppressed their VL *on yearly basis*
2. regimen

ANNEXES

Diagnostic algorithm of TB-HIV co-infection

Annex. I: Management of Common Opportunistic Infections

I. INFECTIONS

A. Bacterial infection

1. Pneumococcal and other bacterial pneumonia	
Symptoms & Signs	**Diagnostic Test(s)**
Symptoms: • Fever and Productive cough of acute onset, Pleuritic chest pain, Malaise, Chills and dyspnoea **Clinical findings:** • Fever, signs of consolidation on the diseased side or simply crackles, low blood pressure, tachypnea, sometimes leading to confusion or decreased level of consciousness in advances cases.	• CXR • Sputum Microbiology, GeneXpert, Culture &Sensitivity • Blood Culture
Treatment	
The assessment of severity is important to decide about the right treatment. If the patient presents with 3 of severity signs, transfer to a facility with ventilation should be considered. - O2 and rehydration - Analgesics and antipyretics - Antibiotics : **Mild to moderate:** • Infants under 3 months: Amoxicillin 30mg/kg/day BID Po for 7 days • Children less than 40 kg (3 months -15years) : Amoxicillin 50mg/kg/day BID Po for 7 days • Adult and children with more than 40 kg: Amoxicillin 500 mg TDS Po X 7days ***If severe pneumonia:*** **Children :** Amoxy-clavulinic acid 90mg/kg/day IV BID; not to exceed 4g/day or ceftriaxone IV50-100mg/kg/day OD or cefotaxime IV 150-200 mg/kg/day divided in 4 doses **Adult:** Amoxy-clavulinic acid 1000/250 mg IV BID for 7-10 days or cefriaxone IV 1g BID or cefotaxime IV 1g TDS	

2. Pulmonary TB (refer TB/HIV sections) 3. Miliary TB	
Symptoms & Signs	**Diagnostic Test(s)**
Fever, night sweats, weakness, weight loss, cough sometimes and dyspnoea, hepatomegaly, splenomegaly, lymphadenopathy, choroidal tubercules on eye examination.	CXR: Miliary pattern. Lab: Sputum ZN staining is negative in 80% Anaemia, leukopenia, DIC.
Treatment: 2 RHZE7 4RH7.	

1. Disseminated M. Avium Complex	
Symptoms & Signs	**Diagnostic Test(s)**
• Fever, • Night sweats, • Weight loss, • Diarrhoea, • Abdominal pain • Hepato-splenomegaly	• Culture from non-pulmonary sterile site, • AFB blood culture • Biopsy from liver, bone marrow or lymph node • CD4 less than 100 cells (adult and children more than 5 years) or < 20% or less than 500 cells for children less than 5 years • Elevated alkaline phosphatase and LDH
Treatment:	
Children : clarithromycin 15-30 mg/kg/day BID (note exceed 500mg) + Ethambutol 15-25mg/kg/day once for 12 months **Adult :** Clarithromycin 500mg BID Po + Ethambutol 15 mg/kg/day once for 12 months - Criteria for prophylaxis: • Not active signs of MAC disease • CD4 less than 50 cells **Children:** Clarithromycin 7.5mg/kg/day BID **Adult :** Clarithromycin 1200 mg/week Note that prophylaxis can be discontinued if CD4 are more than 100 cells for adult and children more than 5 years, and CD4 more than 200 cells for children less than 5 years and at least 6 months on ARVs. Check CD4 count every 6 months. - ARV simultaneously or in 1-2 weeks	

B. Viral infection

1. Oral Hairy Leucoplakia	
Symptoms & Signs	**Diagnostic Test(s)**
Signs: • White asymptomatic lesion with corrugated surface, • Very often on lateral surface of the tongue.	CXR: Miliary pattern. Lab: Sputum ZN staining is negative in 80% Anaemia, leukopenia, DIC.

Treatment
Indicated if pain: **Children :** • < 12 years:20mg/kg/dose 5x/day for 2 to 3 weeks • > 12 years:10mg/kg/dose 5x/day for 2 to 3 weeks **Adult:** Acyclovir 800mg Po 5x/day for 2 to 3 weeks ARV

2. Herpes Zoster (Zona)	
Symptoms & Signs	**Diagnostic Test(s)**
• Lesions are vesicles, painful and involve several dermatomes, • Lesions can take a long time to heal when they become necrotic. • They can show secondary infection and deep scarring. • Zoster Ophthalmic is when the ophthalmic branch of the trigeminal nerve is often involved and cause corneal scarring with loss of vision in that eye.	**Diagnosis:** • Based on clinical symptoms and signs. • A Tzanck test show multinucleated giant cells with inclusion bodies which are pathognomonic.
Treatment:	
Children : • < 12 years: Acyclovir 20mg/kg/dose 5x/day for 7 to 10 days • > 12 years: Acyclovir 10mg/kg/dose 5x/day for 7 to 10 days **Adult :** Acyclovir 10mg /kg IV every 8 hoursfor 7-10 days (fencephalitis: 21days) **Or** Acyclovir 800mg PO 5 times daily for 7 to 10 days + Systemic antibiotics + Analgesics for pain and fever + Non Steroids Anti Inflamatory Drugs (NSAID) Or Carbamazepine 200-600mg daily or Amitriptyline 25-75 mg (effective in controlling post –zoster neuralgias)	

3. Disseminated CMV	
Symptoms & Signs	**Diagnostic Test(s)**
- Retinitis/esophagitis, Colitis/encephalitis, Polyradiculomyelopathy, Dementia/pneumonitis.	Fundoscopy/biopsy/CSF/ BAL fluid
Treatment	
Adult and children: Ganciclovir 5mg/kg IV BD for 3-4 weeks Add foscarnet 60mg/kg/day TDS if CNS signs	

4. Progressive Multifocal Leukoencephalopathy (PML)	
Symptoms & Signs	**Diagnostic Test(s)**
• Cognitive disorder ranges from mild impairment of concentration to dementia. • Insidious onset. • Focal neurological deficit seizures, loss of sensation. • Fever and headache are rare.	Initial recognition of PML relies on a combination of clinical and neuro imaging findings. The first step is usually identifying the clinical picture of steady progression of focal neurological deficits. CT scan but MRI is the best imaging modality to exclude other pathologies CSF: elevated protein
Treatment	
ARVs.	

5. Herpes Simplex infection	
Symptoms & Signs	**Diagnostic Test(s)**
Orolabial herpes (e.g., cold sores, fever blisters) is the most common manifestation of HSV-1 infection. Classic manifestations include a sensory prodrome in the affected area, rapidly followed by the evolution of lesions from papule to vesicle, ulcer, and crust stages on the lip. The course of illness in untreated patients is 5 to 10 days. Lesions recur 1 to 12 times per year and can be triggered by sunlight or physiologic stress. Genital herpes is the most common manifestation of HSV-2 infection. Typical genital mucosal or skin lesions evolve through stages of papule, vesicle, ulcer, and crust.	Clinical examination or HSV DNA polymerase chain reaction (PCR), and viral culture are preferred methods for diagnosis of mucocutaneous HSV lesions caused by HSV.
Treatment	
Orolabial and genital lesions (Duration: 5–10 days) • Children less than 45kg :20 mg/kg/day Po TID (not exceed 400mg) • Adult and children more than 45kg: Acyclovir 400 mg PO TID (AIII) **Severe Mucocutaneous HSV Infections (AIII)** • For adult and children, Initial therapy acyclovir 5 mg/kg IVTID • After lesions begin to regress, change to oral therapy as above. • Continue treatment until lesions have completely healed	

6. Kaposi's sarcoma	
Symptoms & Signs	**Diagnostic Test(s)**
Signs: • Hyper pigmented nodules, • Purpuric or erythematous plaques sometimes progressing to ulcerative lesions on the face, trunk, limbs, or oral cavity. • They are usually asymptomatic either painful nor pruritic. • Lymphadenopathy, • Respiratory, GIT, pericardial or ocular symptoms	Clinical diagnosis, histology by biopsies if available
Treatment	
• **ARV** • **Bleomycin** **Children:** 15IU/m2/week IV/IM/SC for 3 weeks then twice a month for 3 months Adult :0.25-5 UI/kg/week IV/IM/SC for 3 weeks then fortnightly twice a month for 3 months	

7. Lymphomas (Non Hodgekin Lymphoma)	
Symptoms & Signs	**Diagnostic Test(s)**
NHL B Cell Types, Stage 4 disease with B symptoms, Weight loss, Fever, hepatic dysfunction, marrow failure, lung disease and effusion, CNS signs.	Biopsy
Treatment	
Chemotherapy: CHOP Cyclophosphamide, Doxorubicin, Vincristine, Prednisone	

C. Parasitic infections

1. Pneumocystis Jirovecii Pneumonia (PJP)

Symptoms & Signs	Diagnostic Test(s)
Symptoms: • Sub-acute onset of shortness of breath. • Dry cough • Fever, fatigue, chest pain • HIV + with low CD4 Count **Clinical Findings:** • Fever, • Tachypnea, • Tachycardia, • Normal chest exam in 50%, rales/ rhonchi, • Cyanosis.	• Hypoxia (Low saturation on walking • Elevated LDH: Sensitive but not specific. • CXR: Usually a diffuse, bilateral interstitial pattern, pneumothorax • CXR normal in early disease in up to 10 to 20%. • Sputum induction and staining

Treatment

- Oxygenation
- Rehydration

For Moderate to Severe PJP—Total Duration = 21 Days (AII):

Preferred Therapy:

- **Children:** TMP-SMX: (TMP 15–20 mg/day but not exceed 300 mg IV given q6h (AI), may switch to PO after clinical improvement (AI).
- **Adult :**TMP-SMX: (TMP 15–20 mg /day IV given q6h (AI), may switch to PO after clinical improvement (AI).

Alternative Therapy:

1. Pentamidine

Adult and children more than 4 months:4 mg/kg IV/IM once daily (AI); may reduce the dose to 3 mg/kg IV once daily because of toxicities (BI) or •

2. Primaquine

For adult only:15-30 mg (base) PO once daily + (Clindamycin IV 30 mg/kg/day TID or PO 450 mg4 times a day]) (AI).

**Adjunctive corticosteroid may be indicated in some moderate to severe cases
(see indications and dosage recommendations below)

For Mild to Moderate PJP—Total Duration = 21 days (AII):

Preferred Therapy:

Adult and children : IV TMP-SMX: (TMP 15–20 mg/kg/day
TID (AI) or TMP-SMX DS (960Mg) - 2 tablets TID (adult)(AI).

Alternative Therapy:

1. Dapsone

Children more than 1 month: 2mg/kg /day for 21 days
Adult and adolescent: 100 mg PO daily for 21 days

2. Primaquine

For adult only:30 mg (base) PO daily + Clindamycin PO (450 mg 4 times a day) (BI) or
Adjunctive Corticosteroids:
For Moderate to Severe PJP Based on the Following Criteria:
If SaO2 < 90%, beginning as early as possible and within 72 hours of PJP therapy) (AI):
Prednisone tablet:

- Children less than 13 years:
- 1-5 days:1mg/kg BID
- 6-21 days: 0.5mg/kg OD

Adult and Children more than 13 years :

- 1-5 days:40mg Po BID , 6-10 days: 40mg OD, 11-21 days: 20 mg OD or IV methylprednisolone IV 75% prednisone dosing for adult

IV methylprednisolone for children:
1-7 days:1mg/kg q6hr, 8-9 days: 1mg/kg OD, 10-11days: 0.5 mg/kg BID, 12-16 days: 1mg/kg OD

2. Cerebral Toxoplasmosis/ Toxoplasma Gondi Infection

Symptoms & Signs	Diagnostic Test(s)
• Focal neurological signs (hemiparesis/hemiplegia) • Cognitive dysfunction • Seizures • Headache and Fever • Symptoms of diffuse encephalopathy • Meningeal irritation is less frequent • Sometimes signs of raised ICP (papilledema/ vomiting).	**LP:** • CSF may be normal or nonspecific (Mild mononuclear pleocytosis and mild to moderately elevated protein). • Toxoplasma antibody absence has a high negative predictive value of 94-97%. • CT Scan Brain

Treatment:

Preferred Regimen (AI):

- **Cotrimoxazole**

Children: TMP-SMX: (TMP 15–20 mg/day but not exceed 300 mg IV given q6h (AI) for 6 weeks
Adult: 960 mg PO TID or TMP-SMX: (TMP 15–20 mg /day IV given q6h for 6 weeks
Adult and Children more than 13 years:
Prednisone tablet:

- 1-5 days:40mg Po BID
- 6-10 days: 40mg OD
- 11-21 days: 20 mg OD
- or IV methylprednisolone IV 75% prednisone dosing

Antiepileptic in case of seizure:
Children :

- 15-20 mg/kg as loading dose
- maintenance:4-8mg/kg/day BID

Adult :Phenytoin 300 mg OD

D. Fungal infections

1. Cryptococcal meningitis	
Symptoms & Signs	**Diagnostic Test(s)**
Symptoms: • Insidious onset of fever, Malaise, • Headache with / without vomiting **Clinical Findings:** • **Features of AIDS, Neck stiffness, Behaviour changes, Confusion and sometime seizures**	CT Scan Brain Lumber puncture and India Ink staining, Cryptococcal Ag testing

Treatment

a. Scenario 1: If patient has symptoms and CRAG is Positive or/and Cerebrospinal fluid analysis is suggestive:

Treatment for cryptococcal meningitis consists of 3 phases: induction, consolidation, and maintenance therapy.

1. Induction Therapy for 2 Weeks:

- Children: B 0.7-1 mg/ kg/day, slow IV infusion for 2 weeks
- Adult: Amphotericin B 0.7-1 mg/ kg/day, slow IV infusion for 2 weeks + fluconazole 800-1200mg / day
- If contraindication to Amphotericin B or Amphotericin B not available, give Flucanozole high dose 400-600mg BD for adult and 12mg/kg/day for children
- Repetitive lumbar punctures to decrease Intra Cranial Pressure.
- Antiepileptic if seizures.
- Management of coma if comatose

2. Consolidation Therapy for at least 8 Weeks: To begin after 2 weeks of successful induction therapy (defined as substantial clinical improvement and a negative CSF culture after repeat LP)

Regimen:

Children: fluconazole12mg/kg OD for day 1, then 6mg/kg daily for 8 weeks
Adult: Fluconazole 400 mg PO or IV once daily.

3. Maintenance Therapy

Re*gimen:*

Children: 3mg/kg Po daily for at least 1 year
Adult; Fluconazole 200mg PO for at least 1 year

4. Stopping Maintenance Therapy

If the Following Criteria are fulfilled:
Completed initial (induction, consolidation) therapy, and at least 1 year on maintenance therapy, and Remains asymptomatic from cryptococcal infection, and CD4 count ≥200 cells/μL for ≥3 months for adult or ≥20% for children and suppressed HIV RNA in response to effective ART.

Note:
Corticosteroids and mannitol are ineffective in reducing ICP and are NOT recommended

b. Scenario 2: If patient has no symptoms and CRAG is Positive:

Induction phase: Children: 12mg/kg daily for 2 weeks
Adult : Fluconazole 800 mg daily for 2 weeks.
Consolidation phase:

- Children: 6mg/kg daily for 10-12 weeks
- Adult: Fluconazole 400 mg daily for 10 weeks

Maintenance phase:
- Children: 3mg/kg/daily CD4 >20% for 1 year on ART
- Adult: Fluconazole 200 mg daily until CD4 >200 for 1 year on ART

Note:
- Perform ASAT/ALAT every 2 weeks if Fluconazole >= 800 mg /day for adult and > 6mg/kg for children
- Avoid combination of Fluconazole with NVP: use EFV
- Do not use Fluconazole in the first trimester of pregnancy
- Rifampicin decreases Fluconazole concentration: increase Fluconazole from 800 to maximum dose (1200 mg) and double dosing if maintenance.
- If relapse (documented previous sterile culture), re initiate induction therapy with amphotericin 1mg/kg/day + fluconazole 800mg –1200mg for 2 weeks and then continue with consolidation therapy

2. Candida Esophagitis/Mucosal candidiasis	
Symptoms & Signs	**Diagnostic Test(s)**
Diffuse retrosternal pain, dysphagia, odynophagia, thrush.	**Clinical:** Oral thrush and retrosternal chest pain.
Treatment:	
Children :3mg/kg/day OD PO for 2-3 weeks Adult:Fluconazole 200 mg OD PO for 2-3 weeks. Uncomplicated Vulvovaginal Candidiasis Preferred Therapy: • Oral fluconazole 150 mg for 1 dose; or • Topical azoles (clotrimazole, butoconazole, miconazole, tioconazole, or terconazole) for 3–7 days	

Annex. II: Management of side effects

1. Evaluation of Dermatological Toxicity

Table XX. Grading and evaluation of dermatological toxicity

Grade 1	Grade 2	Grade 3	Grade 4
Erythema, Pruritus	Widespread maculopapular eruptions of dry desquamation	Appearance of blisters or humid desquamation or ulceration or association with fever or pain	Appearance of the following signs: Affection the mucosa, Stevens Johnson syndrome, Erythema multiform, necrosis, or exfoliative dermatitis.

Note
The suspected molecule will be stopped only if the toxicity is ≥ Grade 3

2. Evaluation of Hepatotoxicity

Table ___. Grading and evaluation of hepatotoxicity

	Normal	Grade 1	Grade 2	Grade 3	Grade 4
ALAT(SGPT) (UI/l)	< 40	50-100	100-200	200-400	>400

Table___: Biological toxicity and ART Switching indications

Laboratory exam	indication of switch (grade 3 of toxicity)
Hemoglobin	< 6,9 g/dl
Neutrophile	< 749/mm3
Platelet	< 49999/mm3
Sodium	< 122 mmol/L or > 159mmol/L
Potassium	< 2,4 mmol/L or > 6,6mmol/L
Bilirubin	> 2,5 times the normal
CrCl	> 50 ml/min or loss of 15% of CrCl baseline
Glucose	<0,39 g/L or > 2,51 g/L (for not diabetic fasting)
Amylase lipase	> 5 times the normal

Table___: ART side effect

Molecule	Major Type of Toxicity	Suggested Management
Tenofovir Disoproxil Fumarate (TDF)	• Tubular renal dysfunction • Fanconi syndrome • Decreases in bone mineral Density • Lactic acidosis or severe hepatomegaly with steatosis	• If TDF is being used in first-line ART, substitute with AZT or ABC • Use alternative drug for hepatitis B treatment (such as entecavir) to avoid Hepatic flares if TDF is replaced due to toxicity
Abacavir (ABC)	• Hypersensitivity reaction • Gastrointestinal intolerance	• If ABC is being used in first-line ART, substitute with TDF • If ABC is being used in second line ART, substitute with TDF
Zidovudine (AZT)	• Anemia, neutropenia, myopathy, • Lipoatrophy or lipodystrophy • Lactic acidosis	• If AZT is being used in first-line ART, substitute with TDF or ABC • If AZT is being used in second-line ART, seek expert opinion
Nevirapine (NVP)	• Hepatotoxicity • Severe skin rash and hypersensitivity reaction (Stevens-Johnson syndrome)	Substitute with EFV. If the person cannot tolerate either NNRTI, use boosted PIs

Molecule	Major Type of Toxicity	Suggested Management
Efavirenz (EFV)	• Persistent central nervous system toxicity (such as abnormal dreams, depression or mental confusion, Convulsions) • Hepatotoxicity • Gynecomasty • Hypersensitivity reaction, Stevens-Johnson syndrome • Potential risk of neural tube birth defects (very low risk in humans) • Male gynecomastia	Substitute with DTG or PIs
Etravirine (ETV)	Severe skin and hypersensitivity reactions	• Seek expert opinion • Do not combine with NVP, EFV and Atazanavir

Raltegravir (RAL)	Rhabdomyolysis, myopathy, myalgia	• Seek expert opinion • Do not combine with: Rifampicin, Phenytoin, and Phenobarbital.
Dolutegravir (DTG)	Hypersensitivity, skin rash, Hepatotoxicity	If first or second line based, switch with NNRTI or PIs;
Atazanavir (ATV)	• Indirect hyperbilirubinemia (clinical jaundice) • Nephrolithiasis and risk of prematurity	Switch with LPV/r or DRV/r. If boosted PIs are contraindicated and NNRTIs have failed in first-line ART, consider integrase inhibitors
Darunavir (DRV)	Skin rash (10%) and Stevens Johnson syndrome have been reported in some cases. Hepatotoxicity, Diarrhoea, nausea, headache, Hyperlipidaemia,	• Do not combine with: Rifampicin, Astemizole, alfuzosin and in case of severe liver failure do not adjust • Do not use with pregnant women If DRV/r is being used in second line ART, substituting with ATV/r or LPV/r can be considered. When it is used in third-line ART, limited options are available, Seek expert opinion

Molecule	Major Type of Toxicity	Suggested Management
Lopinavir (LPV)	• Electrocardiographic abnormalities (PR and QT interval prolongation, torsades de pointes) • Hepatotoxicity • Pancreatitis, lipoatrophy or metabolic syndrome, dyslipidaemia or severe diarrhoea • Risk of prematurity	• If LPV/r is used in first-line ART for children, use an age-appropriate NNRTI (NVP for children younger than 3 years and EFV for children 3 years and older). • ATV can be used for children older than 6 years • If LPV/r is used in second-line ART for adults, use ATV/r or DRV/r. • If boosted PIs are contraindicated and the person has failed on treatment with NNRTI in first-line ART, consider integrase inhibitors, Seek expert opinion

Ritonavir (RTV	• Gastro-intestinal discomfort (Diarrhoea, nausea, vomiting), • Paraesthesia, Hyperlipidaemia (Especially Hypertriglycidemia), • Hepatitis, Asthenia, sweetness disturbance; Hyperglycaemia, fat distribution inappropriate; probability of worsening bleeding with hemophilia.	Switch PIs with integrase inhibitors
Cotrimoxazole (CMX)	• Anaemia • severe skin rash • GI Intolerance (Nausea, vomiting, etc.) • Hepatotoxicity	• Switch with Dapsone or clindamycin + primaquine • Desensitization

Table ___: Drugs That Should Not Be Used with Selected Antiretroviral Agents Due to Proven or Predicted Pharmacokinetic Interactions

ARVs	Cardiac Agents	Lipid Lowering Agents	Anti- infective Agents	Antiepileptic Agents	Neurologic Agents	HCV Agents	Other Agents
ATV/r	Eplerenone Ivabradine	Lovastatin Simvastatin	Rifampin Clarithromycin	ATV only: Carbamazepine Phenobarbital Phenytoin	Lurasidone Midazolam Pimozide Triazolam	Elbasvir/ Grazoprevir	PPIs Sildenafil for PAH Corticosteroids: (local injections, including intra- articular, epidural, intra-orbital) Methyl - prednisolone, Prednisolone, Triamcinolone
DRV/r	Dronedarone Eplerenone Ivabradine	Lovastatin Simvastatin	Rifampin Clarithromycin	DRV/c only: Carbamazepine Phenobarbital Phenytoin	Lurasidone Midazolam Pimozide Triazolam	Dasabuvir Elbasvir/ Grazoprevir	PPIs Sildenafil for PAH Corticosteroids: (local injections, including intra- articular, epidural, intra-orbital) Methyl- prednisolone, Prednisolone, Triamcinolone
LPV/r	Dronedarone Eplerenone Ivabradine Ranolazine Propafenone Quinidine Ranolazine	Lovastatin Simvastatin	Rifampin Clarithromycin	None	Lurasidone Pimozide Triazolame	Dasabuvir Elbasvir/ Grazoprevir Ombitasvir Paritaprevir Simeprevir	PPIs Sildenafil for PAH Corticosteroids: (local injections, including intra- articular, epidural, intra-orbital) Methyl- prednisolone, Prednisolone, Triamcinolone
EFV	None	None	None	Carbamazepine Phenobarbital Phenytoin one	Midazolam Triazolam	Dasabuvir Elbasvir/ Grazoprevir Ombitasvir Paritaprevir Simeprevir	
ETV	None	None	Rifampin	Carbamazepine Phenobarbital Phenytoin one	None	Dasabuvir Elbasvir/ Grazoprevir Ombitasvir Paritaprevir Simeprevir	Clopidogrel
NVP	None	None	Rifampin	Carbamazepine Phenobarbital Phenytoin one	None	Dasabuvir Elbasvir/ Grazoprevir Ombitasvir Paritaprevir Simeprevir	Ketoconazole
DTG	Dofetilide	None	Rifapentine	Carbamazepine Phenobarbital Phenytoin Oxcarbazepine	None	None	None
RAL	None	None	None	None	None	None	
TDF						Ledipasvir/ Sofosbuvir	Al- Mg hydroxide antacids

RWANDA
BIOMEDICAL
CENTER

A Healthy People . A Wealthy Nation