The United Republic of Tanzania

Ministry Of Health, Community Development, Gender, Elderly and Children

Nurse Initiated Management of Antiretroviral Therapy (NIMART)

A handbook for Nurses and Midwives

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Foreword

This handbook intends to provide guidance on provision of Nurse-initiated Management of Antiretroviral Treatment (NIMART) services in Tanzania.

NIMART, a nurse centered task sharing ART delivery approach has been implemented in some African countries such as Rwanda, Zambia, Lesotho and South Africa with a number of studies indicating that it is effective in improving access to treatment and care for PLHIV. Experience from these countries has shown that a nurse-centered task sharing approach has led to increased number of clients enrolled in HIV services and number of clients (adults and children) started on ART. With regards to patient outcomes, studies showed that in settings where nurses provide the majority of the care, there were good treatment adherence rates and favorable clinical outcomes. Furthermore, there were no differences in mortality, viral failure or immune recovery between the doctors versus nurses-initiated ART services.

It is expected that NIMART, which enables professional nurses to initiate HIV positive persons on ART and manage their care at primary health care clinics, will improve access to care without significant increases in human resources.

The effect of task sharing has been evaluated in various African countries, including South Africa, Ethiopia, Kenya, Malawi, Lesotho, Botswana, Swaziland, Nigeria, Cameroon, Zambia, Uganda, Mozambique and Rwanda, and found that the strategy can offer high-quality, cost-effective care to

more clients than a physician-centered model. The strategy also has shown to be acceptable to patients.

This handbook clearly outlines tasks and responsibilities in NIMART to meet the demand for initiating and managing more patients on antiretroviral therapy. It is my hope that NIMART will propel Tanzania in realizing the UNAIDS set '90-90-90 targets'; aiming to diagnose 90% of all HIV positive people, provide antiretroviral therapy (ART) for 90% of those diagnosed and achieve viral suppression for 90% of those treated, by 2020.

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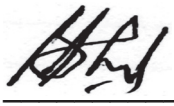

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Abbreviations

Abbreviation	Meaning
AIDS	Acquired Immune-deficiency Syndrome
ART	Antiretroviral Treatment
BCG	Bacillus –Calmette-Guerin
cART	Combination Antiretroviral Therapy
CCM	Cryptococcal Meningitis
CD4/CD8	Cluster of differentiation – (number) four, eight
CPT	Cotrimoxazole Preventive Treatment
CTOP	Choice of termination of pregnancy
DBS	Dried Blood Spot
DNA	Deoxyribonucleic acid
DOTS	Directly Observed Treatment Short Course
EAC	Enhanced Adherence Counselling
ELISA	Enzyme-Linked Immunosorbent Assay
EMTCT	Elimination of mother-to-child transmission
EPTB / EXPTB	Extra-Pulmonary Tuberculosis
GBV	Gender-Based Violence
HAART	Highly Active Antiretroviral Therapy
HBC	Home-Based Care
HBTC	Home-Based HIV Testing and Counselling
HBV	Hepatitis B Virus
HCP	Healthcare Providers
HCT	HIV Counselling and Testing
HCV	Hepatitis C Virus
HCW	Healthcare Workers
HIV	Human Immunodeficiency Virus
HTS	HIV Testing Services
HVL	HIV Viral Load
ICDM	Integrated Chronic Disease Model
INSTI	Integrase Strand-Transfer Inhibitor
ICF	Intensified Tb Case Finding

Abbreviation	Meaning
IPT	Isoniazid Preventive Therapy
IVDU	Intravenous Drug User
MDR	Multi-Drug Resistance
MSM	Men-Who-Have-Sex-with-Men
MUAC	Mid Upper-Arm Circumference
NACP	National AIDS Control Program
NIMART	Nurse-Initiated and Managed Antiretroviral Treatment
PCR	Polymerase Chain Reaction
PJP	Pneumocystic Jirovecii Pneumonia
PMTCT	Prevention of Mother-to-Child Transmission
PSI	Population Services International
QA	Quality Assurance
RDT	Rapid Diagnostic Test
STIs	Sexually Transmitted Infections
SW	Sex Workers
UNAIDS	United Nations Program on HIV and AIDS
VL	Viral Load
VMMC	Voluntary Medical Male Circumcision
WHO	World Health Organization

Definition of Terms

Term	Definition
Adherence	The standard clinical definition of adherence has been 'taking >95% of medications in the right way at the right time'. Over time, this definition has broadened to include additional factors related to continuous, comprehensive care such as following a care plan, attending scheduled clinic appointments, picking up medicines on time and getting regular tests.
Adolescent	A person aged 10 – 19 years inclusive.
Adult	A person aged over 14 years (this definition is strictly for program and data management purposes)
Child	A person aged 14 years and younger
Couple	Refers to two people involved in an intimate relationship
Exposed infants	Is an infant born to an HIV-positive mother
HIV Presumptive diagnosis	Refers to adults and children with signs and symptoms of HIV who are waiting for confirmation of test results
Infant	A child less than one year of age
Key populations	Sex workers and their clients, men who have sex with men, injecting drug users, prisoners, mobile populations and young girls 15-24 years of age.
Multi-Disciplinary team	An approach to managing patients that involves a team of healthcare workers applying their varying skills sets in the management of complex HIV patients or program issues e.g. switching to second line treatment, or managing co-infection/ comorbidity.

Non-Adherence	This is characterized by missing one or more doses of medicine, missing one or many appointments at the clinic, lab or pharmacy, not following the care plan, stopping medicine for a day or many days and taking treatment breaks, taking medicines at the wrong times, taking medications without following instructions, mixing ARVs with traditional and alternative medicines or remedies.
Provider-initiated testing and counseling	An approach to HIV testing and counseling, where HIV testing is offered to all patients attending health care facilities
Client-initiated testing and counseling	An approach to HIV testing and counseling where the client(s) voluntarily make the decision to learn their HIV status
Rights-based approach	Consciously and systematically paying attention to human rights and rights principles in the provision of services.
Sero-discordant couple	A couple in which one partner is living with HIV and the other is HIV-negative
Stepped-up adherence	An approach to maximizing adherence in patients with elevated viral load, who are suspected of failing treatment, designed to rule out poor adherence as the cause of the elevated viral load and may lead to re-suppression once adherence is optimized
Treatment experienced patients	Patients with loss or lack of virologic response to at least two ARV regimens, including at least one member of each of the three drug classes (NRTI, NNRTI, PI)
Undetectable Viral Load	Refers to viral load less than 50 copies/ml

Background

Tanzania is one of the countries most severely affected by the AIDS pandemic, with an estimated 1,400,000 people living with HIV by the end of December 2017. Out of these, 927,127 are currently receiving Anti-retroviral treatment (ART) from about 6,529 health facilities that are providing ART in the country as of June 2016(NACP, 2018). The number of patients in need of ART services will increase substantially due to the new WHO recommendation requiring all HIV-infected individuals commenced on ART, irrespective of clinical or immunological status, in order to reduce mortality.

The government of Tanzania, through the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC) aim to achieve the UNAIDS 90-90-90 target of getting 90% of all of people living with HIV aware of their status, 90% of those diagnosed on sustained ARV treatment, and 90% of those on treatment maintaining durable viral suppression by 2020. It also supports the goals of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) to achieve an AIDS-free generation. Thus, ensuring universal access to quality ART services has become a key priority. Addressing the treatment and support needs of the large numbers of patients requiring ART initiation and management requires a large number of well-trained health care workers/ providers. Currently, the country is facing a shortage of human resource for health. The estimated doctor-to-population ratio is 0.5 per 10,000 and the overall health care worker-to- population is 14.5 per 10,000 (MoHSW, Human Resource for Health Production Plan, 2014). Countrywide,

the human resource for health shortage disproportionately affects rural areas where over 70% of the population leaves, while 74% of medical doctors in Tanzania serve in urban areas (MoHSW, 2014). Most communities in the rural areas where most of the people reside are attended at primary health facilities (dispensaries and health centres). These primary health facilities are often managed by mid to low level-health care professionals.

In order to increase the number of people that can access HIV care and management, especially in the rural areas, a task sharing approach is necessary. Task sharing, as defined by the Task Sharing Policy Guidelines for Health Sector in Tanzania, 2016; involves the rational redistribution of tasks among health workforce teams at various levels within the health system. Specific tasks related to health care delivery are shared, where appropriate, among health workers with different qualification levels in the same profession or across professions in order to make more efficient use of the available human resources for health. It is one method of strengthening and expanding the health workforce to rapidly increase access to health services.

'Task-sharing' from medical doctors to nurses has been proposed as one response to the challenge of delivering large-scale, sustainable, and effective ART programmes in resource-constrained contexts. In the context of HIV and AIDS care the term 'nurse-initiation and management of ART (NIMART)' is proposed. In its fullest sense, NIMART involves nurse-initiation of patients onto ART, re-prescription for patients stable on ART, and appropriate referral to medical doctors where necessary. Given the shortage of

physicians in most low- and middle-income countries (LMIC) with large-scale ART programmes, there is an emerging consensus that some form of NIMART, or ART provision by non-physicians, will be required to achieve ART coverage. A systematic review conducted in 2010 in South Africa on task sharing for HIV care and treatment in Africa found that task sharing is an effective strategy for combating shortages in human resources for health in HIV care and treatment.

NIMART mentorship program successfully resulted in a majority of ART initiations conducted by nurses, allowing doctors to focus on patients with more advanced disease. In this country nurses are involved in provision of ART services, ranging from counseling and testing, initiation and refilling of ART, monitoring response to treatment, toxicities as well as referring patients to other appropriate interventions. This handbook has been written with this in mind, and by recognizing that a nurse-led service can deliver ART care effectively, improve the quality of care, and increased access to ART especially at the primary healthcare level in a cost-effective and sustainable manner. This handbook serves as a practical guide in ensuring quality and harmonized NIMART services in the country.

User of this Handbook

This handbook is intended to be used by nurses and midwives trained and certified to initiate and manage ART to PLHIV and AIDS at dispensary, health centers, district hospitals and those who are at reproductive and child health services including PMTCT services at different levels. Furthermore, other stakeholders involved in ART services can also use the handbook as a quick guide.

CHAPTER ONE

The practice of Nurse-Initiated Management of Antiretroviral Therapy (NIMART)

Key Messages

- There is acute shortage of human resources for health, especially in the rural areas, where most of the facilities providing ART services are allocated
- NIMART rollout to primary healthcare facilities increases access to anti-retrovirals
- NIMART is expected to meet high demand of ART services, following the adoption of "Treat all" policy.

1.1. Introduction

1.1.1. Adoption of the new WHO guidelines for the management of HIV-infected individuals

Tanzania has adopted recommendations of WHO 2015 Consolidated Guidelines for prevention and treatment of HIV infection that advocates "treat all" approach. The implication is that anyone infected with HIV should begin antiretroviral treatment regardless of eligibility criteria. Based on these recommendations, it is anticipated to increase the number of people on antiretroviral treatment from 28 to 37 million globally. Expanding access to treatment is at the heart of a new set of targets for 2020 with the aim of ending the AIDS epidemic by 2030. These targets include 90% of people living with HIV being aware of their HIV infection,

90% of those receiving antiretroviral treatment, and 90% of people on ART having no detectable virus in their blood. The expanded use of antiretroviral treatment is supported by recent findings from clinical trials confirming that early use of ART keeps people living with HIV alive, healthier and reduces the risk of transmitting the virus to partners. To effectively implement the recommendations, countries will need to ensure HIV services are readily available and those undergoing treatment are supported on adherence to recommended regimens and retention in care.

1.1.2. The challenges associated with anticipated expanded access to ART services

As antiretroviral therapy (ART) for HIV/AIDS becomes more available in resource-limited settings, human resource shortages have become one of the main barriers to rapid scaling-up of ART programmes. In particular, inefficient use of the health workforce hinders ART scale-up. In some developing countries, ART scale-up has become one of the main drivers of increased need for more healthcare professionals.

1.2. Why is task sharing an important approach?

Task sharing is the creation of new capacity as an approach to reduce the impact of human resource shortages. It involves giving specific tasks, where appropriate to health workers with shorter training and less qualifications. For example, certain tasks presently carried out by doctors but are considered to not necessarily require a doctor can be delegated to nurses. The objective is to use the health workforce more efficiently, whilst maintaining quality of care standards and increasing access to healthcare.

1.3. Nurse-initiated Management of ART (NIMART)

In the context of HIV and AIDS care the term 'nurse-initiation and management of ART (NIMART)' is proposed as one response to the challenge of delivering large-scale, sustainable, and effective ART programmes in resource-constrained contexts.

In its fullest sense, NIMART involves nurse-initiation of ART, re-prescription for stable clients on ART, and appropriate referral to physicians as needed. Given the shortages of physicians in most low- and middle-income (LMIC) countries with large-scale ART programmes, there is an emerging consensus that ART provision by non-physicians will be required to achieve ART coverage. Task sharing of roles and responsibilities for HIV care and treatment in this context can take a number of forms depending on how services are structured.

1.4. Why is NIMART important?

Health system challenges that hinder wide access to ART services include; inadequate linkage and referral, shortage of knowledge and skilled medical personnel for management of HIV, infrastructure, congestion in hospitals, delays in seeking care by patients.

1.5. Experiences from other African countries

Experiences from a number of African countries suggest that involvement of nurses in ART services can result in substantial savings in cost and physician time without compromising the quality of care or health outcomes for patients. Hence it is a potentially effective and cost-effective approach to addressing the human resource limitations to ART rollout. However, more evidence is needed on the

effectiveness and cost-effectiveness of each task-sharing model, as it is currently limited.

A review of experiences in a number of African countries found that shifting responsibility from doctors to adequately trained and supported nurses or community health workers for managing HIV patients probably does not decrease the quality of care and, in the case of nurse initiated care, may decrease the numbers of patients lost to follow-up. Ten studies (cite/reference) showed that when nurses initiated and provided follow-up HIV therapy, there was no difference in death at one year, lower rates of losses to follow-up at one year, no increased risk of death and decreased lost to follow-up.

1.6. Objectives of the NIMART HANDBOOK:

Through this section the handbook provides guidance on who will practice NIMART, when and at which circumstances NIMART will be practiced.

Objectives of NIMART:

- To improve access to ART services
- To scale up ART services
- To increase the number of patients on ART
- To address the health care worker shortages
- To capacitate nurses who work at HIV service points
- To provide evidence based systems improvement

1.7. Who should be allowed to practice NIMART

The following are the strict criteria to be met by nurses who will initiate ART

- Be professional nurses registered and recognized*by the Tanzania Nursing and Midwifery Council (TNMC)
- The nurse must be licensed to practice as a registered nurse
- Attends and completes a Continuous Professional Development (CPD) accredited two weeks training course designed and organized by DNMS using HIV and AIDS National facilitators
- Completes a 6 months clinical mentorship programme
- Completes a work book with various types of scenarios to be initiated and managed under close supervision of well experienced mentees (DNO, National ART trainers/RACC/DACC or as identified)
- Submit a portfolio of evidence to the training unit

*Include qualified Nurses from certificate level

1.8. Conditions under which NIMART shall be practiced

Facility requirements

- NIMART should only be practiced in facilities that are well monitored and evaluated regularly for compliance to requirements as stipulated in the Task Sharing Policy guideline.
- Established links and referral to other services should be in place

- Facilities to offer NIMART services have to be approved by NACP in collaboration with district and regional authorities

For practicing Nurses

- Should be practiced by professional nurses certified to provide NIMART
- NIMART services should be provided in close supervision of clinicians
- Practicing nurses should be familiar with NIMART handbook and other requirements as will be deemed to be necessary
- Nurses should undergo frequent competence assessment

1.9. Training arrangements

- A two weeks' CPD program which is TNMC accredited NIMART training will be offered that will provide the nurses with an interactive approach to ART Services
- The course will provide science-based, evidence-informed competency to manage PLHIV.
- Topics shall include all components involved in the continuum of HIV care and treatment as stipulated in the National Guidelines for Management of HIV and AIDS.

1.10. Clinical mentorship arrangements

For a nurse to practice NIMART he/she MUST complete a 6 months clinical mentorship programme. Clinical mentorship should be considered an essential component of the public health approach to universal access in resource-constrained

settings. It serves the following purposes:

- Supports the decentralization or introduction of ART services through task sharing
- Allows for basic ART trainings with standardized National training package
- Maintains and progressively improves the quality of clinical care of mentees
- Builds the referral network
- Motivates clinicians by providing effective technical backup, improving clinic efficiency, and providing an opportunity for professional development
- A variety of mentorship models will be applied

In ensuring successful mentorship careful mentee selection will be done in close cooperation with and support from district and facility management levels. Further, monitoring and evaluation shall be done on 6 months basis.

1.11. Conclusion

Successful implementation of NIMART in Tanzania requires a comprehensive approach with: an incremental and well-supported approach to implementation; clinical guidelines tailored to nurses. Key issues should include regulatory changes, training to support Nurse ART prescription, local management teams, an implementation toolkit, and a flexible, phased introduction. This handbook serves as a quick guide for nurses practicing NIMART to ensure quality and accessible ART services to effectively contribute in achieving Sustainable Development Goal of ending the AIDS epidemic by 2030.

CHAPTER TWO:

Overview of HIV and AIDS

Key Message

- Understanding the epidemiology and pathogenesis of HIV disease

HIV stands for Human Immunodeficiency Virus. It is the virus that can lead to Acquired Immunodeficiency Syndrome or AIDS if not treated. Unlike some other viruses, the human body can't get rid of HIV completely, even with treatment. HIV attacks the body's immune system, specifically the CD4 cells (T cells), which help the immune system fight off infections. Untreated, HIV reduces the number of CD4 cells (T cells) in the body, making the person more likely to get other infections or infection-related cancers. Over time, HIV can destroy so many of these cells that the body can't fight off infections and disease.

No effective cure currently exists, but with proper medical care, HIV can be controlled. The medicine used to treat HIV is called antiretroviral therapy or ART. If taken the right way, every day, (and this medicine suppress the HIV Virus and stop progression of HIV disease), keeps PLHIV healthy, and greatly lowers their chance of infecting others.

2.1. Epidemiology

The current epidemiological data of the year 2015 estimated about 36.7 million people were living with HIV worldwide. This number includes 1.8 million children, i.e. a global HIV

prevalence of 0.8%. The majority of the infected live in Sub-Saharan Africa (about 25.5 million), nineteen million live in East and southern Africa while in Tanzania, data have shown that about 1.4 million people were infected with HIV. Despite the availability of antiretroviral treatment, 1.1 million people died of AIDS-related illnesses in the year 2015.7

2.1.1. The HIV Epidemic in Tanzania

The HIV epidemic in Tanzania has had significant economic and demographic consequences.8It is estimated that 1.4 million Tanzanians are infected. Even though reports indicate that between 2012 and 2017 there was a decrease in HIV prevalence from 5.1% to 4.7%, this difference is small. Indeed, the prevalence in women remains greater than that of men (6.2% vs 3.1% respectively). Urban dwellers are more affected than rural (7.5% vs 4.5% respectively).9

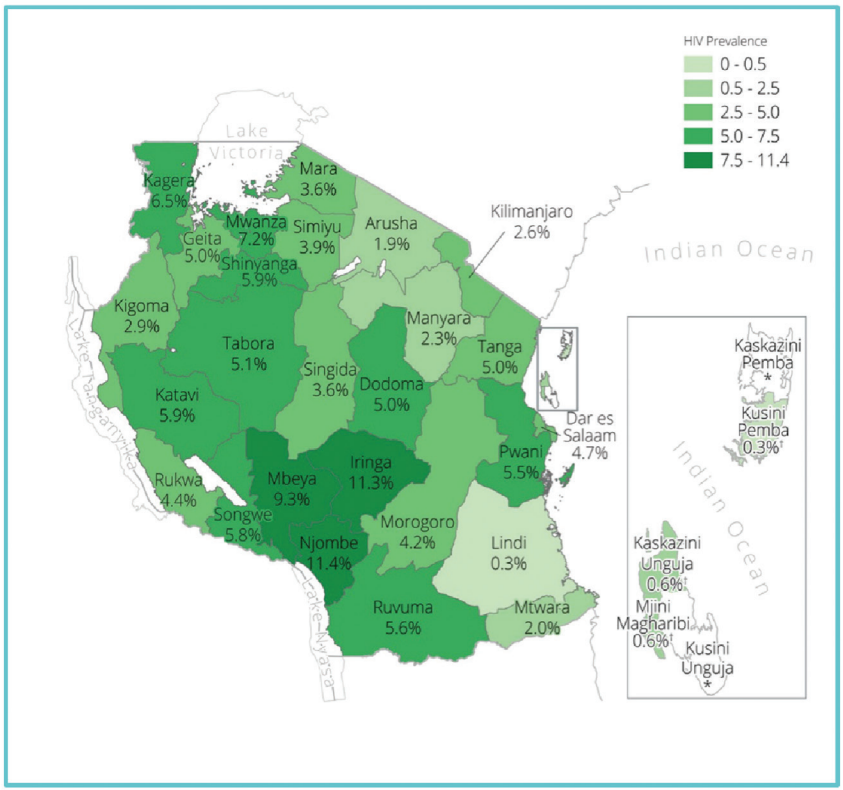
2.1.2. History of HIV Pandemic in Tanzania

Tanzania's first HIV and AIDS cases were reported in November 1983 from Ndolange Hospital in Kagera region which is in the northwest of the country. The first HIV serological-survey in Tanzania was conducted in Arusha, Dar es Salaam, and the regions of Kagera and Mwanza between 1985 and 1987. The data showed that HIV-1 prevalence rates among pregnant women in these regions ranged from0.7% in the Arusha region to 16.0% in the Kagera region. Since that time, the epidemic has been monitored through active surveillance of pregnant women at sentinels.

Tanzania specific statistics and impact of HIV

Status of the Epidemic

Current data indicate the prevalence of HIV in Tanzania is 4.7% and the prevalence is 16% among PWIDS, 22.2% among Men having Sex with Men (MSM) and 31.4% among female sex workers. The decreasing prevalence rate may be a reflection of the widespread access to antiretroviral in the community



Source: Tanzania HIV Impact Survey, 2017

Figure 1: Prevalence of HIV infections in Tanzania by region

2.2. Impact of HIV and AIDS in Tanzania

Health impact: Increase in the number of people seeking services, increase in other communicable diseases which are opportunistic infections related to HIV such as tuberculosis, respiratory tract infections and STIs.

Economic Impact: There is a close relationship between HIV and AIDS and economic development. HIV and AIDS negatively affect economic growth and this in turn, makes it difficult for countries and individuals to initiate adequate and comprehensive responses to the epidemic. Poverty is a powerful co-factor in the spread of HIV and AIDS.

Social Impact: AIDS is widespread in both urban and rural communities and mostly affects persons at the peak of their sexual and productive lives. The death of a young adult often means loss of a family's primary breadwinner. Stigma associated with HIV is still widespread. Children become caregivers and orphans are not only subjected to material, social and emotional deprivation, but may experience the loss of opportunities in education and healthcare.

2.3. Basic facts of HIV infection

What is HIV? HIV is a virus that attacks the immune system of our body's natural ability to fight infection. The virus attacks certain cells in the immune system called CD4 cells that help the body fight disease. Because the HIV virus affects the CD4 cells, the body is unable to fight off diseases as it normally would and the person gets sick. They get infections that people with well-functioning immune systems do not usually get. There is no cure for HIV, once a person has HIV; they will have it the rest of his or her life, despite treatment received.

What is AIDS? AIDS is acquired immune deficiency syndrome. When HIV has severely damaged a person's immune system so that it can no longer fight infections effectively; the HIV infection has progressed to AIDS. A person has AIDS when he or she has HIV and it has progressed to the point where they have certain opportunistic illnesses; the point where their CD4 count is < 200 cells/mm ^{3}

Modes of HIV transmission.

HIV can directly enter the body via the bloodstream, or mucous membranes such as: vagina, penis, or anus. Once HIV is present in the body of an infected person, it is found in their semen, vaginal fluid, breast milk, blood (including menstrual blood), rectal secretions/mucosa.

There are four main routes of HIV transmission:

- Unprotected vaginal or anal or oral sex (oral sex carries a very small risk)
- Sharing unsterilized injecting drug equipment
- From mother-to-child in pregnancy, childbirth or breastfeeding
- Infected blood transfusions, transplants or medical procedures

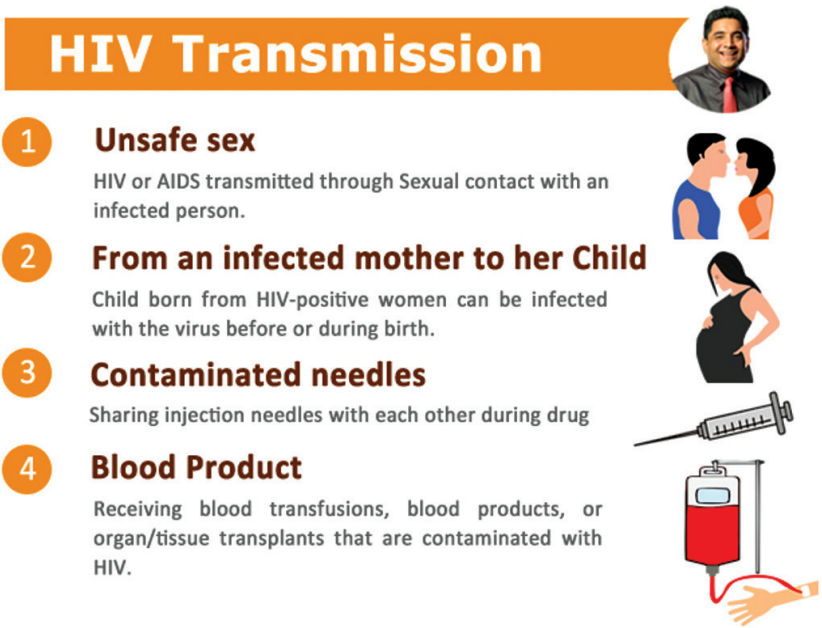


Figure 2: Modes of HIV transmission

Factors affecting transmission:

Certain factors influence the transmission of HIV and these are biological and socioeconomic factors. Nurses should be aware of these factors when counseling patients on testing or prevention.

Biological Factors

Factors increasing risk: Susceptibility of recipient (women are more susceptible), high viral load of host, other STIs, and multiple exposures.

Factors decreasing risk: correct and consistent use of latex condoms, remaining faithful in relationships, abstinence,

ART to decrease risk of mother-to-child transmission (ART may decrease but not eliminate risk)

Socio-economic Factors

Social mobility: People move around more.

HIV and AIDS follows routes of commerce (e.g trucking routes).

Stigma and denial, denial and silence are the norm: – stigma prevents people from acknowledging the problem and getting help.

People in conflict: - context of war and struggle for power spreads the virus.

Poverty: Increased risk of other co-morbid disease, decreased access to healthcare.

Commercial sex: engaging in sex for money, drugs, food, or other goods.

Cultural factors:

Traditions, beliefs, and practices affect understanding of health and disease and – acceptance of conventional medical treatment. Culture can create barriers that prevent people, especially women, from taking precautions and seeking medical care.

Gender: In many cultures, men are expected to have many sexual partners, whereas women may suffer gender inequalities.

The Pathogenesis of HIV Infection

To survive, the virus must find a cell in which to grow and replicate. These are primarily activated CD4T lymphocytes – also known as T helper cells.

The virus attaches to receptors on the surface of these cells, the CD4 receptors and co-receptors, CCR5 and/or CXCR4.

CD4 cells other than activated CD4 T lymphocytes, are also infected:

- RestingCD4 T cells
- Monocytes
- Macrophages
- Dendritic cells.

Dendritic cells are plentiful in genital tissue and usually participate in the initial transfer of the virus from one person to another. Infection of non-CD4+ receptor bearing cells, e.g. kidney epithelium and astrocyte-like cells in the brain also occurs, but not at the time of the initial transmission of the virus. End-organ disease caused by HIV itself is generally a feature of advanced and late stage infection, e.g. renal failure and HIV encephalitis.

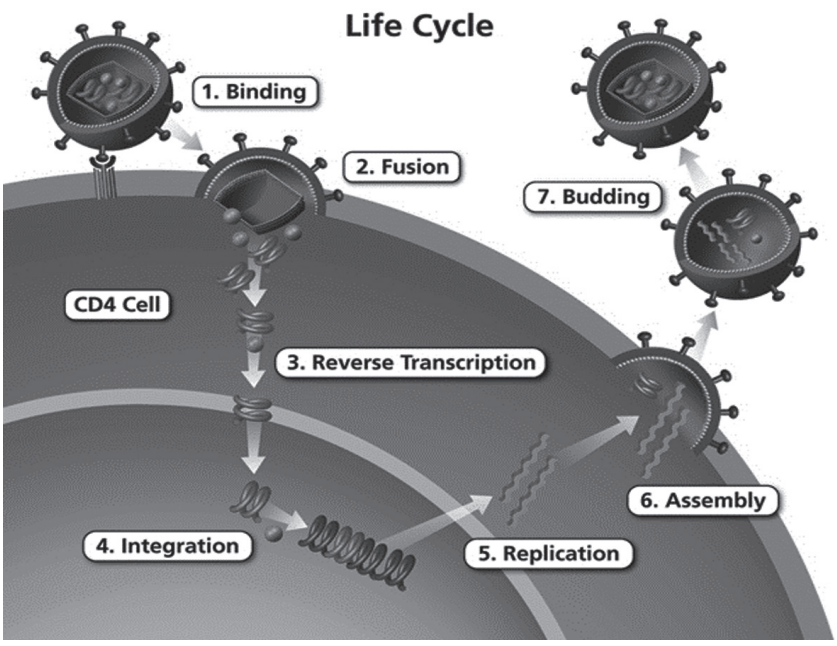


Figure 3: The life cycle of HIV

The Natural History of HIV Infection

It is best described in three phases outlined below:

1. Primary infection: The duration of this phase is approximately 1 to 3 months. Within 2-3 weeks after infection, there is a steep rise in the level of HIV RNA copies and a decline in the number of CD4 cells in the blood and in the gastro-intestinal tract (GIT).
2. Asymptomatic infection: The duration of this phase is approximately 8-10 years without antiretroviral treatment.
3. Symptomatic HIV Infection and AIDS: The duration of this phase in the era before ART was approximately ≤12-18 months

CHAPTER THREE

The Role of the Nurse in HIV Care

Key Messages

- Best practices in assessment of patients' condition
- Establishing Diagnosis in HIV care and treatment
- Planning care and management
- Apply ethical principles in providing care

3.1. General Roles of the nurse in HIV care and Management

Table 1:General roles in HIV care and Management

Outline of General roles
▪ Provide information and basic facts of HIV, prevention, nutrition, diagnosis, treatment, available support services, OIs to individuals, family and community
▪ Provide adherence counselling and enhanced adherence counselling
▪ Initiate ART and managing clients for continuum of care i.e. from initial diagnosis to achieving the goal of viral suppression)
▪ Monitor the patient for treatment failure and the emergence of viral resistance
▪ Diagnose and manage concurrent illness in the HIV positive patient. This includes the diagnosis of opportunistic diseases and infections (OIs) and co-morbid diseases
▪ Ensure availability of ARV and supplies and storage of medicines, diagnostics and all necessary consumables
▪ Supervise and support colleagues and clients
▪ Adhere to Standard Precautions of Infection Prevention Control

Table 2: Specific roles in HIV care and Management	
Outline of Specific Roles	
1. Assessment of patients' condition	
Role	Descriptions
History taking	Obtain information on the following: • Current and past medical history of the patient such as OIs and comorbid disease e.g. CVS, renal and neurological disorders • Dietary history such as abnormalities with appetite, swallowing, or the presence of chronic diarrhea, vomiting, abdominal pain • Previous HIV tests and outcome • Risk factors related to HIV acquisition such as sexual history, mother-to-child-transmission, sexual assault, substance abuse - alcohol and IVDU • Defaulters to ART such as missed appointment and lost to follow up • Drug toxicity and adverse events • Adherence to ART treatment such as missed doses • Tuberculosis history for client and family members • Surgical history • Allergies • Current medication
Role	Descriptions

Laboratory and Radiological Investigations	Laboratory investigations: • Ensure tests are obtained: Liver function test, Renal function test, Hb, CD4 Count, Sputum examination, Urinalysis, Blood sugar, Viral Load, STI, Creatinine • HIV testing Radiological investigations: • Chest X-ray
2. Diagnosis	
Medical diagnoses	• Confirm HIV status • Diagnose concurrent illness (opportunistic diseases and infections (OIs) and co-morbid diseases)
Nursing diagnosis	• Identification of potential and actual risks to patients e.g. psychosocial such as depression, stigma and discrimination; physical such as pressure sores, opportunistic infection, malnutrition, drug toxicity, elimination
3. Care and management plan	
Care and management plan	Plan based on information collected • Counseling and adherence • ART initiation and monitoring • Nursing intervention • Referral and linkage to the relevant service • Categorize clients for differentiated service delivery
4. Implementation and Evaluation	

Implementation and Evaluation	• Conduct adherence counselling • Assess readiness • Initiate ART • Implement nursing interventions • Monitor adherence • Monitor efficacy and toxicity • Document management and information of clients

3.2. Guiding Ethical Principles for Nurse

Table 3: Ethical Principles in the provision of HIV care and treatment.

Principle	Description
Doing good (beneficence)	Perform duties beyond employment obligation
Do no harm (Non-maleficence)	Ensure that services are safe and meet set standards
Value for Human Life	Be guided by the fact that human life has a unique value and therefore all efforts should be made to preserve that life.
Value for humankind	Respect the unique value of human being, they should consider patients' rights to privacy, confidentiality, not to be insulted

3.3. Code of conduct

Nursing and midwifery professions as it is in many other professions are guided by professional code of conduct. The following are the key items related to code of conduct:

Table 4: Code of conduct in Nursing

Code of Conduct	Description
Privacy	Ensure that clients are being provided with services in the environment that does not expose them to other people during care.
Confidentiality	Ensure that patient's information acquired during the course of service delivery has to be kept confidential.
Informed consent	Obtain informed consent in provision of care and treatment
Fairness	Provide services fairly regardless of religion, tribe, sex, socio economic status and sexual orientation

CHAPTER FOUR

HIV Prevention

Key Messages

- Combination of HIV prevention approaches
- Identification of target Groups for Prevention

4.1. Overview of HIV Prevention

Effective HIV prevention strategies must be comprehensive and inclusive of all modes of transmission. Nurses should appreciate the importance of the role they have in implementing prevention strategies.

4.2. HIV Prevention Approaches

Evidence shows that the combination of prevention approaches is necessary to provide comprehensive HIV prevention strategies

Table 5. HIV Combination Prevention Approaches

Biomedical	Socio-Behavioral	Structural: Societal Response
• HIV counselling and testing (HTS) • Management of sexually transmitted diseases (STIs) • Prevention of mother-to-child transmission (PMTCT)/EMTCT • Post-exposure prophylaxis (PEP) • Pre-exposure prophylaxis (PrEP) • Voluntary medical male circumcision • Male and female condoms	• Promoting consistent and correct use of condoms • Changing patterns of sexual behaviour (e.g. young people must be encouraged to delay sexual debut, couples must strive to reduce the number of sexual partners) • Undertaking intensive counselling for social and behaviour change	• Appropriate national policy and legislation • Advocacy at all levels of decision making • Positive leadership • Appropriate budgeting and resource management • Addressing gender inequality and gender-based violence • Reducing stigma at facility, community and personal levels • Poverty alleviation

Table 6: Target Groups for Prevention

Target Group	Reason
Men-who-have-sex-with-men (MSM)	• HIV prevalence among MSM is 13 times higher when compared to the general population
Sex workers and their clients	• Risk behavior of SWs and their clients e.g. inconsistent condom use, alcohol and drug use, multiple sex partners, constant threat of sexual assault and physical abuse
Intravenous drug users and people who abuse alcohol	• 'Recreational' drugs e.g. cocaine, heroin, and alcohol impair ability to make wise decisions
Mobile Population	• Long distance truck drivers, bus drivers, mine workers, fishermen, plantation workers, frequent travellers, road construction workers, taxi drivers, bodaboda/Bajaji drivers may be at an increased risk for HIV infection due to engagement in risk behaviours during periods of time spent away from home
Vulnerable populations	• Many lack information and skills, e.g. HIV prevention or safe sexual practices, as they are hindered by social and cultural norms, cost, distance, beliefs and laws that stigmatize, disempower and act as barriers
Orphans, vulnerable children and youth (OVCY),	• Are often targeted by perpetrators in their own environment or in the community

People with physical and mental disability	• They often experience risks of acquiring HIV infection such as poverty, vulnerable to sexual violence and abuse, limited to access health care services and lack the information and resources needed to facilitate safer sex.
Young women and girls	• Gender inequality affects the status of women in society and their ability to prevent HIV infection
Migrant, mobile populations	• Many do not have legal status within their destination countries and live in isolation, making it difficult to protect themselves against the people who might exploit them or sexually abuse them
People with TB	• The prevalence of HIV in patients with TB in southern Africa ranges from 40-60%. It is imperative that everyone diagnosed with TB is screened for HIV infection.
Detained populations	• Detainees e.g. prisoners are commonly exposed in an environment of sexual assault, consensual unprotected sex and the use of drugs by sharing used needles.
Serodiscordant/sero-different couples	• Sexual transmission is more likely to occur when the infected partner has high viral levels in his/her blood and genital fluids
Uncircumcised men	• Men who are not circumcised may be more than twice as likely to become infected with HIV after sex with an infected female partner
Pregnant women, new mothers and their unborn/newborn babies	• Women living in HIV endemic regions are at high risk of acquiring HIV infection during pregnancy and postpartum period • Transmission of HIV from an HIV-positive mother to her child may occur during pregnancy, labor, delivery or breastfeeding

CHAPTER FIVE

Prevention of Mother-To-Child Transmission (PMTCT)

Key Messages

- Primary prevention of HIV among women of child bearing age and their partners
- Prevention of unintended pregnancies amongst women living with HIV
- Prevention of vertical transmission of HIV from mothers to their infants
- Provision of treatment, care and support to women living with HIV and their partners, infants and families.

Please refer to chapter three for preventive measures for the elements number one and two.

5.1. Summary of Services for Pregnant Women in Antenatal Care

Table 7: ANC Services for Pregnant Women infected with HIV

Service	Tasks
Comprehensive history taking,	• Take medical history (including symptoms of opportunistic infections), obstetric, family and psychosocial history • Determine the HIV status of the woman and her partner • If HIV-positive, enroll for pre-ART and ART care (if not yet enrolled) • Enquire about partner and family support as well as status of the partner and other children, where applicable • Ask about history of medications, including use of ARVs (including for PMTCT purposes), known allergies, use of traditional medicines or herbal products, and alcohol

Service	Tasks
Physical examination and vital signs	• Conduct a general clinical assessment, obstetric assessment, pregnancy risk assessment, assess current signs of Illness, common symptoms of TB, sexually transmitted infections (STIs) • Perform staging of clinical disease, for HIV-positive women
Tuberculosis screening	• Screen all women (regardless of HIV status) for TB using the National TB screening tool • Refer or provide diagnostic and follow-up services according to National TB management guideline
Nutritional assessment and counselling	• Assess nutritional status using MUAC. If MUAC is less than 23 cm, provide nutrition counseling and support • Provide iron and folic acid in every ANC visit and vitamin supplement as per ANC guideline • Counsel on proper diet based on locally available foods
HIV testing and counselling for the pregnant woman and her partner	• Every woman in ANC should be offered HTS at the first visit unless already known to be HIV-positive • Encourage couple testing and mutual disclosure • For women who refuse HIV testing, continue counselling at every encounter • For details read Chapter 5 on HTS
Basic laboratory investigations	• Screen for syphilis and provide treatment if reactive • Check hemoglobin level or clinical pallor to screen for anemia. • Check blood group and Rh factor • Test urine to detect urinary tract infection, glucose and proteins • For HIV infected pregnant women, take blood samples for CD4 cell count, LFTs, and renal function tests • Screen for Hepatitis B infection and Hepatitis C serology, if available

Service	Tasks
Counselling and education	• Provide HIV prevention counselling and services • Provide referral to VMMC for the male partner if not already circumcised • Educate on family planning methods for informed decision making before delivery • Recommend a dual protection (condom and other preferred method) • Counsel and educate pregnant woman on; Danger signs, STI signs and symptoms, birth preparedness and complication readiness, effects of alcohol and drug use • Encourage compliance with follow up visits and trace defaulters • Promote and support exclusive breastfeeding for six months, and thereafter add complementary foods as per guideline. • Continue with counselling for positive pregnant women who refuse to take ART
Provision of psychosocial support services	• Provide psychosocial support to HIV positive pregnant woman as need arises
Refer high risk pregnancies	• Refer women with high risk pregnancies for further management
Provision of ART for HIV- positive women	• Refer chapter 6 on ART
Immunization	• Give tetanus toxoid and other immunizations according to National guidelines

5.2. Monitoring of HIV-Positive Pregnant Women

- Monitoring visits should be for both HIV care and for routine ANC services:
- **ART Care:** Care for HIV positive pregnant women include; Adherence counselling and pill counting, psychosocial support, side effect monitoring, clinical assessment and laboratory assessment.

- **ANC care:** Comprehensive ANC care includes; history taking, physical examination, screening for TB, nutritional assessment and management, provision of immunization as needed, counselling and education on risk of HIV transmission

  For detailed information on monitoring refer ART chapter 6

5.3. Labour and Delivery

Services for Women during Labour, Delivery and Immediately After Delivery

- Initiate lifelong ART in labour for women newly diagnosed or previously diagnosed HIV- positive but not initiated on ART regardless of WHO staging or CD4 count
- During labor, women on ART should be given their doses at normal dose time
- Give Nevirapine syrup to the baby immediately after birth; to all HIV eexposed infants and continue until 6 weeks of age.
- For identified high risk infant, administer dual prophylaxis with AZT syrup (twice daily) and syrup Nevirapine (once daily) for 6 weeks of life then continue with Nevirapine alone up to 12 weeks of life.
- Continue with counselling to the mother

Table 8: Infants with High risk of HIV infection

Identification of Infants with High risk of HIV infection	
High risk infants	Are those born to a woman: • with well-known with HIV infection who has received ART less than 4 weeks at the time of delivery • With woman Viral Load more than 500 copies per mil, in the 4 weeks before delivery. • With incidence of HIV infection during pregnancy or breast feeding • Identified for the first time during Postnatal period with or without a negative test prenatally

Infant prophylaxis is most effective when is given as soon as possible after birth preferably 6 to 12 hours.

- Do not give ARV prophylaxis for infants identified beyond age of 4 weeks.
- Provide immunization to Exposed Infants as per Immunization and Vaccine Development guideline

CHAPTER SIX

HIV Testing Services (HTS)

Key Message

- 5Cs guiding principles in HTS counseling
- Approaches in HIV Testing
- Identification of HTS Target Groups

HIV Testing Services (HTS) is the entry point to prevention, care and treatment services. Testing is a process and does not stop at the test itself: results need to be provided to the client and clients need to be linked to either prevention or HIV care and treatment services– ideally on the same day of testing.

6.1. Five Guiding Principles

HIV testing services are voluntary and the guiding principles of HTS, known as “5Cs” outlined below, must be respected and adhered to by all HTS service providers and in all settings.

Table 9: Five Guiding Principles of HTS

Sn	The 5Cs	Explanation
	Consent (Informed)	• All clients receiving HTS must be provided with sufficient information about benefits of testing and counselling so that they may give their voluntary informed consent to receive these services • Clients must recognize their right to withdraw consent at any time • Understand the HTS process and procedures and availability of follow-up treatment, care and support, and prevention services
	Confidentiality	• All nurses must remain committed to preserving confidentiality • Confidentiality must be observed not only on the test results and reports but also on any other personal information eg the use of illegal drugs • Nurses should avoid practices that can inadvertently reveal test results to others in the waiting room or in the health facility.
	Counselling	• All HTS must include accurate and sufficient pre and post-test counselling sessions • The Pre-test can be provided in a group setting, but all clients/patients should have the opportunity to ask questions in private setting if they request it. • All HIV testing must be accompanied by appropriate and high quality post-test counselling based on the HIV test results. It should address the unique needs and risks of the HTS clients or patients.

Sn	The 5Cs	Explanation
	Correct results	• Perform testing according to the testing algorithms and to the national quality assurance standards • Ensure that clients are given correct test results • Communicate results to the person tested unless that person refuses to receive the results
	Connection	• Ensure that clients and patients are connected/ linked with appropriate follow-up services following HTC • Ensure that referral information reaches the receiving site

6.2. HIV Testing Services Approaches

The following are the available approaches

- Client-Initiated Testing and Counseling (CITC)
- Provider Initiated Testing and Counseling (PITC)
- Community Based HIV Testing Services (CBHTS)
- HIV Self-testing (HIVST)
- Client-Initiated Testing and Counseling (CITC)

This approach is also known as Voluntary Counseling and Testing (VCT), Client(s) voluntarily make the decision to learn their HIV status as an Individual, couple, or family, in setting where the services are available.

Table 10: Client-Initiated Testing and Counseling (CITC)

CITC is available in the settings detailed below:
Integrated sites: Services integrated or co-located within the health care system in government and non-governmental facilities.
Home Based HTS through Door to Door Services: Services provided in a home setting with a family focus to increase the access and uptake services
Stand–alone VCT sites: Sites where only HIV testing and counseling services are provided, with referral for any other needed services

- **Provider-Initiated Testing and Counseling (PITC)**

Provider–Initiated HIV Testing and Counseling (PITC) refer to situations in which an HIV test is as part of normal standard of care. PITC services should be made available in different facilities and settings including but not limited to those recommended by a health care worker (HCW) to individuals, couples, families or groups attending clinical services.

Table 11: PITC settings

PITC is available in the HTS delivery points detailed below:
• **Tuberculosis (TB) clinics:** TB patients should be offered HIV testing and all HIV – positive clients should have access to TB screening services.
• **Sexually Transmitted Infection (STI)** or sexual health services: All patients seeking STI services must be routinely offered HIV test as part of the package of STI services
• **Family planning (FP) services:** HTS should be offered to everyone presenting for FP services. FP other than condoms does not offer HIV prevention benefits and dual contraception (condom + other FP method) should be encouraged with promotion of HTS services in this context
• **National Blood Transfusion Services:** All persons donating blood must be offered HTS
• **Child Welfare services:** Determine exposure status for all infants and offer routine testing to all exposed infants at the six-week visit or the child's first contact with the health system
• **Home based HTS through index clients:** Counselors providing follow up care to their index client and tracking referrals should provide comprehensive HIV prevention messages and offer HTS
• **Antenatal, delivery and postpartum health services:** HTS must be offered to all women of unknown HIV status during pregnancy, in labour, as soon as possible after delivery or in the postpartum period until breastfeeding is complete

PITC services should be provided to all adults, adolescents, and children above 18 months attending health facilities using HIV rapid tests according to the National HTS guidelines. For children less than 18 months it is done through DNA -PCR Testing on DBS samples

- **Community Based HIV Testing Services (CBHTS)**

Community Based HTS refers to an approach whereby an HTS provider visits a house hold and offer HTS services to individuals, couples, families within the house hold setting. It includes community-based index client testing, stand-alone HTS, mobile outreach services, home based (door to door) and work place HTS.

- **HIV Self-testing (HIVST)**

HIVST is an approach whereby an individual who wants to know his or her HIV status performs the test and interprets the result by himself/herself. Health care providers working in public or private health facilities including drugs dispensing outlets should provide the correct information to clients acquiring test kits for HIV self-testing. The information includes the advantages and disadvantages of HIV Self-Testing, where to access test kits for HIVST, how to perform and interpret the test correctly and where to access follow-up care.

6.3. HTS Target/Priority population

Specific guidelines for testing different populations are outlined in the Table below:

Table 12: HTS Guidelines for priority Populations

Priority Group	Key HTS Points
General population	• People should be offered an HIV test at every contact with a health facility and through other HTS approaches outlined above. • Everyone should be assumed to be exposed to HIV.
Couples and Partners	• Services should be offered to married and cohabiting couples, premarital couples, polygamous unions and any other sexual partnerships. • HIV testing and counseling should be voluntary. • Be aware of intimate partner–based violence and support individuals when they do not want to test with their partners • Re-testing is recommended routinely
Pregnant and Lactating Women	Before delivery: • Test at initial ANC visit • If initial test is HIV-negative, repeat at third trimester At delivery: • Test women who have never tested or are due for retest After delivery: • Breastfeeding woman with unknown status tested at first PNC visit and every 6 months thereafter.
	• If negative for initial test, re-testing after 4 weeks, and thereafter every 6 months
	• Pediatric HIV testing should be conducted in all HTS settings such as Maternal, Newborn and Child health, pediatric OPDs or pediatric wards as well as in adult testing points • Return of results (for DNA PCR) and rapid initiation of treatment • HIV-exposed infants should be tested at 6 weeks after birth • All children with negative results should have an HIV test at 6 weeks after complete cessation of breastfeeding and final rapid test at 18 months to confirm the status. Guiding principle is that "the best interests of the child shall be the primary consideration" in all actions concerning children.

Priority Group	Key HTS Points
Key Populations	• Key population groups are at higher risk of HIV. These include sex-workers and their clients, injecting drug users, men who have sex with men, prisoners, mobile population • Provisions should be made for persons to access HTS in a manner that meets their specific needs • For individuals unable to consent for themselves, the process of obtaining consent for other medical procedures and diagnostic tests should apply
Children and Adolescents	• People should be offered an HIV test at every contact with a health facility and through other HTS approaches outlined above. • Everyone should be assumed to be exposed to HIV.
People with disabilities (PWD)	• Services should be offered to married and cohabiting couples, premarital couples, polygamous unions and any other sexual partnerships. • HIV testing and counseling should be voluntary. • Be aware of intimate partner–based violence and support individuals when they do not want to test with their partners • Re-testing is recommended routinely
Refugees, displaced persons and migrants	• Health Managers shall ensure that refugees have access to comprehensive health care services, including HTS and follow-up prevention, treatment, care and support services. • HTS services shall be provided through: health facilities, mobile/ outreach or home-based. • Programmes serving these populations may need to train additional providers who speak the language of the particular population or hire interpreters/translators.

Priority Group	Key HTS Points
Survivors of sexual violence	• HTS providers shall provide urgent HTS to survivors of sexual violence as well as clinical evaluation, documentation, treatment and psychosocial counselling. • HIV testing should include syphilis testing and treatment, pregnancy testing and emergency contraception where appropriate. • Ensure survivors are initiated on PEP within 72 hours from the time of sexual assault as per national PEP guidelines • Clients should be counseled about PEP adherence and provided appropriate referrals to other medical and legal support services. • Children who have been sexually abused are at an increased risk for acquiring HIV and long-term psychosocial problems. In addition to PEP, children shall be referred to proper social welfare services, medical and legal aid support as necessary. • If sexual violence is committed by a parent or guardian against their children, it is recommended that the child should be tested without the consent of their parents/guardians and be given age appropriate counselling.
Mobile population	• Long distance truck drivers, bus drivers, mine workers, fishermen, plantation workers, frequent travellers, road construction workers, taxi drivers, bodaboda/Bajaji drivers • HTS offered should include sexual partners.
Persons abusing alcohol and other drugs	• HTS providers shall discuss the risks associated with alcohol and drug abuse with all clients and offer appropriate service. • Persons who are high under the influence of alcohol or other drugs at the time they present for HTS shall be requested to return when they are sober
Populations in closed settings	All prisons shall ensure that Post Exposure Prophylaxis (PEP) is provided following sexual abuse in prisons or work place HIV exposure according to the national PEP protocol PITC should be offered voluntarily to all prisoners at entry as part of medical screening

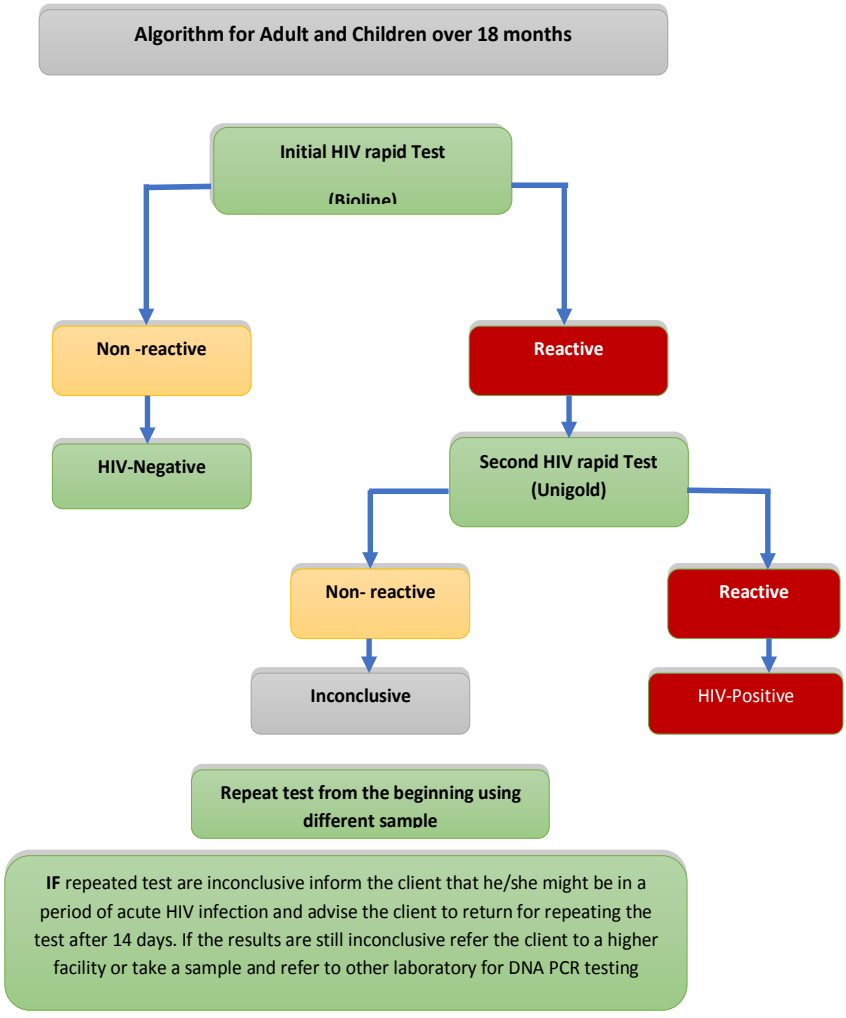
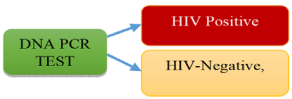
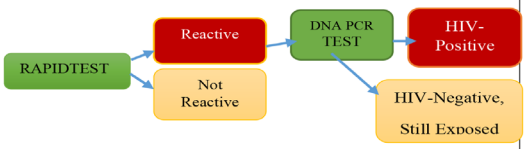
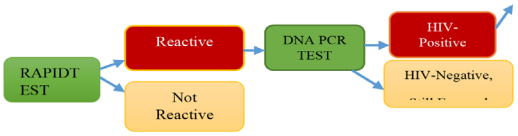


Figure 4: Algorithm of HIV testing for Adults and Children over 18months

Table 13: HIV testing algorithm for Infants and Young Children

Age of Infants	Infants & Young Children Eligible for Testing	How to Test the Infant or Young Children
6-8Weeks	**All Exposed infants** Offer test to mother and infant if exposure status unknown	
9 Months	**All infants** Offer test to mother and infant, regardless of exposure status unless unknown to be HIV-positive	
12 Months	**All Exposed infants** Unless known to be HIV-positive	
18 to 24 Months	**All Children** Offer test to mother and child, regardless of exposure status unless unknown to be HIV-positive	
After Stopping Breastfeeding	**All Exposed Infants and Young Children** Unless known to be HIV-positive	**<9months: DNA PCR 6weeks post-BF** / **9-18 months: Rapid Test and confirm with DNA PCR 8weeks post-BF** / **>18 months: Rapid testing 8weeks post-BF (adult algorithm)**

Mothers/primary guardians should attend all clinic visits with infants and be offered a test if status is unknown or previously negative, this test will act as the screening test for the infant. If mother does not attend, conduct DNA/ PCR test if known to be exposed or screen with rapid test if exposure status is unknown but have mother return with infant for results, regardless of whether positive or negative.

6.4. HIV Testing Services (HTS) Components

Pre-Test Information

Pre-test information and/or counseling shall be offered to all clients presenting in all health facilities and HTS sites, including home-based testing settings. Depending on the setting, this can be done in the form of individual counseling, individual information and group health information sessions.

Table 14: Summary of Pre-Test Information

Pretest Information included in both CITC and PITC
• Clinical and prevention benefits of HIV testing • Explain the HTS process • Confidentiality of testing and results • The meaning of HIV test results • Services available in case of either an HIV-negative or HIV-positive test result • Importance of disclosure of the HIV test results to close family member • Answer patients'/clients' concerns • Informed consent • Explain issues of confidentially, that information will not be shared with anyone other than health care providers directly involved in providing services to the patient • Refer and link the client to appropriate services

Pretest Information included in both CITC and PITC	
CITC should also include:	**PITC should also include:**
• Conduct HIV risk assessment • Prepare for testing and receiving results • Development of a risk reduction plan	• Why PITC is recommended • Inform the patient of the right to decline the test • Reassurance that refusal to test will not result in the patient being denied care for their current health problem

6.5. Tests for HIV Diagnosis

- Antibody tests
  - Rapid Diagnostic Tests – detects HIV antibodies and can be done on site. It is supposed to be used as a screening test. A confirmatory test should be completed following HIV testing algorithm.
- Tests that detect the viral elements (antigen tests)
  - Polymerase Chain Reaction (PCR) –It is used to diagnose HIV infection in infants below 18months. The sample is obtained at the facility and sent for testing and results are sent back

Table 15: Serological and Virological Tests used in diagnosis of HIV

Antibody (Serological) tests	Rapid Test	 Bioline
		 Unigold
Virological test	DNA-PCR for early infant Diagnosis	 DNA-PCR(DBS)

6.6. Post-test Counseling

Post-test counseling helps the client to understand and cope with the results

Table 16: Key HTS Points for Different Target Groups

Target Group	Key HTS Points
General population	• Simple and clear communication of test result • Discuss the possible results and interventions • Give opportunity for the client to ask questions • Review of risk reduction plan including condom use • Develop a coping strategy for the client • Assess referral needs for other services • Discuss disclosure of test results • Discuss partner and family referral for HIV testing where appropriate • Clarify misconceptions and myths about HIV transmission and risks

Target Group	Key HTS Points
Couples	Counsel on the following points: • Mutual disclosure • Condom use • Family planning • Partner support (discordant couples, concordant positive, concordant negative) • Being faithful • Family testing
Pregnant and Lactating Women	Counsel on the following points: • Child birth plans • Family planning • Partner testing • Adequate nutrition for the mother – including iron and folic acid supplements • Infant feeding options • For HIV-positive pregnant and lactating women, antiretroviral therapy is important for the mother's own health and for the infant

Target Group	Key HTS Points
Key Populations	Counsel on HIV prevention using the following points • Remind the client on the modes of transmission of HIV and how they can prevent spread • Educate on condom use, demonstrate and provide condoms • Educate on use of barrier protection such as condoms when having sex • Encourage partner testing • Ensure understanding of available referral services for both positive as well as negative clients • HIV transmission • HIV can be transmitted through anal sex • High risk of HIV transmission associated with sharing needles and injection materials • Untreated STIs will increase risk of HIV infection
Children and Adolescents	Counsel on the following points: • HIV should be clearly explained in simple terms • Listen and address adolescent's concerns • Focus on risky behaviours and risk reduction plans If test is positive • Reassure that they can live a long healthy life • Clarify misconceptions and myths • Educate about the importance of good nutrition • Refer to appropriate prevention, care and treatment services

6.7. Ensuring Quality in HIV Testing Services

Quality assurance (QA) refers to administrative and procedural activities implemented in a quality system so that requirements and goals of a service will be fulfilled.

HIV testing and counseling services must be accompanied by appropriate and high-quality pre-test information and post-test counseling. Quality assurance mechanisms and supportive supervision and mentoring systems should be in place to ensure the provision of high-quality testing and counseling.

Table 17: Quality Assurance Procedures in HIV testing

HTS provider	Supervisor
• Conduct quality control every time a new batch is open • Participate in all proficiency panel testing and document reports • Store test kits in a temperature controlled environment e.g. refrigerator • Ensure samples are stored and transported appropriately • Adhere to rapid HIV testing SOPs and national HIV testing algorithms • Ensure documentation and dissemination of QA assessments reports • Ensure proper documentation of HIV testing information in the M&E tools	• Ensure facility has the ability for cold chain management • Ensure samples are stored and transported appropriately • Oversight of testing performed by HTS providers • Ensure adherence to rapid HIV testing SOPs and national HIV testing algorithms • Monitor stock management of HIV rapid test commodities • Conduct regular on-site supportive supervision for laboratory and point of testing sites • Conduct rapid HIV testing trainings, DNA PCR refresher trainings • Review HIV testing registers

Table 18: Quality Assurance Procedures in HIV Counseling

HTS provider	Supervisor
• Administer counselor reflection forms • Administer client satisfaction measuring tools i.e. client exit forms • Document and disseminate QA assessments reports	• Regular Site visits • Conduct regular meetings with HTS providers • Supportive supervision for counselors • Counselor care

All HTS facilities are required to participate in the internal and external QA activities. Technical supervision and support from the CHMT, RHMT and MoHCDGEC

6.8. Referrals and Linkages

It is the responsibility of the testing health care worker to ensure the referral is made successfully and that the receiving site is aware that a client is expected for follow up services
It is the responsibility of the receiving site to appoint the expected referral (if not attending the same day) and follow up in the case of non-attendance to ensure linkage

HTS providers should refer clients for the following services as deemed necessary:

- HIV Care and Treatment
- On-going counseling

- HIV prevention (e.g. VMMC, family planning, PMTCT)
- Sexual and reproductive health, including family planning
- Support groups
- Medical and psychosocial care and support services
- Community based HIV services

The responsibilities of a nurse at the testing site with regard to linkage and referral include:

- Understanding the service needed for their clients and be aware of available community resources to meet these needs
- Competent in implementing and managing the community-based and outreach activities
- Establish appropriate collaborative relationships for referrals
- Offer HIV prevention counseling and testing
- Keep a referral directory or guide to help staff members make appropriate referrals.

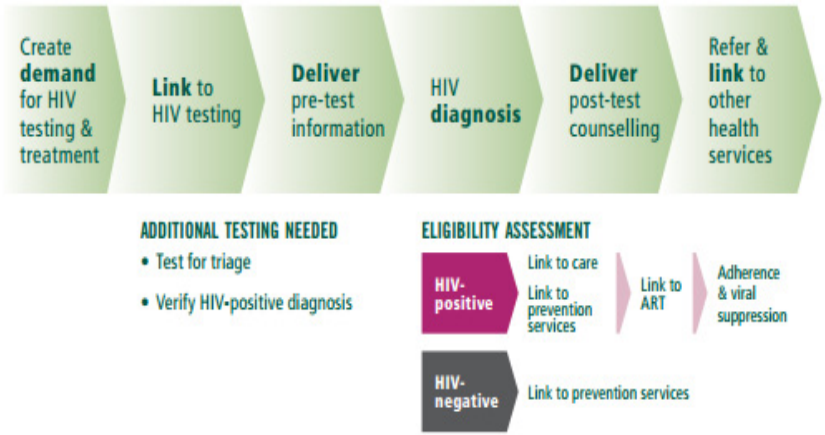


Figure 5: Continuum of Care for HTS

CHAPTER SEVEN

Antiretroviral Therapy

Key Message

- ART has dramatically reduced HIV-associated morbidity and mortality and has transformed HIV disease into a chronic, manageable condition.
- Treatment of HIV-infected individuals with ART is highly effective at preventing transmission to sexual partners and mother to child transmission (MTCT).
- Antiretroviral drugs are effective and safe in suppressing viral replication when used in combination.
- Benefits are maximal when treatment is initiated soon after the HIV diagnosis is made

7.1 Pre-ART Adherence Counseling

- It is recommended that all adult patients should participate in one group counseling session and at least one individual counseling session.
- Client is encouraged to involve family member or friend to assist with medication regimen as well as attending adherence sessions
- The client should attend three adherence sessions
- Adherence must be addressed at Every Client visit

7.1.1 Sessions on Adherence Counselling

First session of adherence counseling

- Review and document client's socio-demographic data in CTC 1 card CTC 2 cards
- Use the checklist for counselling
- Review client's basic knowledge on HIV infection, AIDS progression and correct any misconceptions
- Provide information on early lifelong treatment of ARVs
- Discuss with the client on how ARVs inhibit HIV replication
- Discuss with the client on importance of treatment adherence and the consequences of failing to take ARV as prescribed
- Provide information on the role of CD4 cell count and viral load in monitoring treatment outcome
- Discuss potential barriers to ART
- Discuss with the client on Positive Health, Dignity and Prevention (PHDP)
- Refer the client for treatment and prophylaxis in case of any OIs
- Discuss and link to community based health services. Assess client's willingness and readiness to start ART

Second Session of Adherence Counseling for Adults

- Review the previous counselling session and answer client's questions appropriately
- Discuss potential barriers and lifestyles that might influence ARVs adherence and assist the client to make a plan to overcome the barriers

Third Session of Adherence Counseling for Adults

- Confirm client's readiness and initiate treatment
- Assess barriers to adherence and address them
- Review adherence to risk reduction behaviours, lifestyles, and use of traditional herbs
- Let the client paraphrase instruction on how to take ARVs; insist adherence to be >95%,
- Encourage the client to return to the clinic as early as possible when he/she experiences side effects before deciding to stop ARV
- Identify appropriate adherence helpers such as alarm clocks, cell phone alarms, pill boxes and dose schedule cards and advise the client accordingly
- Encourage the client to have treatment assistant
- Emphasize on the importance of adherence to care and on ART
- Respond for any questions and document
- Schedule the client for the next appointment
- Remind the client to bring the remaining pills when attending the scheduled visit

Follow-up Visits after Initiating ART

Review with the client on the following:

- Proposed treatment adherence plan
- Understanding of the prescribed treatment regimen
- Assess client's understanding on the importance of correct use of prescribed ARVs
- Assess adherence from self-report and pills' count and explore about missed doses since the last visit

- Discuss the current (positive as well as negative) experiences about medications
- Discuss the strategies to minimize side effects
- Explore the factors that might prevent correct use of drugs
- Discuss storage of drugs at home
- Discuss how to ensure adequate supply of drugs in the event of unexpected travel

Managing loss to follow up

- Refer and Link the Clients to community based HIV Services
- Establish Adherence clubs (Youth Clubs, Mother support Clubs)
- Provide patient-friendly access to antiretroviral therapy (ART) for clinically stable patients.
- Form collaboration between clinic team members with community based HIV Services Care Providers.

7.2 Initial Patient/Client Assessment

In initial client assessment do the following.

- History taking, Physical examination(head to toe),
- Order and interpret Baseline Laboratory investigations.
- Screen for opportunistic infections such as TB, STIs, CCM
- Develop treatment plan(preparation of three adherence counseling sessions)
- Categorize clients/patients in early and advanced stages
- Assess mental health status.

- Initiate ARV to Client/patient within two weeks after completion of three adherence sessions
- Clients/Patients Diagnosed with TB and HIV at the Same Time: Initiate TB treatments as a first priority then initiate ART when TB treatment is tolerated - preferably within two weeks of starting TB treatment.
- Delay ART in clients diagnosed with symptomatic CCM for four to eight weeks after the start of antifungal therapy

7.3 Differentiated ART initiation for Clients

7.3.1 Early Disease

- Initiate ARV within 2 weeks of a positive HIV test, unless there is a medical or psychosocial contraindication.
- Plan with the client to complete three ART adherence counseling sessions to facilitate rapid initiation
- Follow up the client at two weeks, then monthly until stability of the client is determined at 6months based on HVL results after initiation of ART

7.3.2 Severe Disease

- Initiate ARV within two weeks, preferably one week (rapid initiation) of a positive HIV test, unless there is a medical or psychosocial contraindication.
- Plan with the client to complete three ART adherence counseling sessions to facilitate rapid initiation
- Follow up the client at two weeks, then monthly until stability of the client is determined at 6months based on HVL results after initiation of ART.
- More frequent visits or hospitalization may be required to stabilize acute medical conditions and address psychosocial and other concerns.

7.4 ARVs-in adolescents and Adults

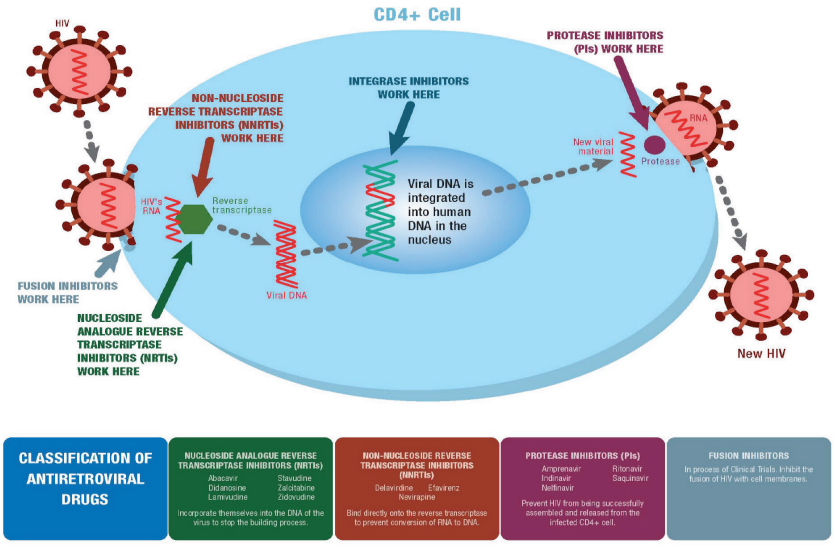


Figure 6: Modes of action of antiretroviral drugs

7.4.1 First-Line ART for Adults and Adolescents (≥ 15years), Pregnant/lactating mothers

Recommended first-line regimen

TDF (Tenofovir) + 3TC (Lamivudine) + EFV (Efavirenz) 600mg

7.4.2 Alternative First-Line Regimens in case of;

- Nephrotoxicity due to TDF give;
  - ABC (Abacavir) + 3TC (Lamivudine) +EFV (Efavirenz) 600mg or DTG (Dolutegravir)
  - AZT (Zidovudine) + 3TC (Lamivudine) +EFV (Efavirenz) 600mg or DTG (Dolutegravir)

- Severe CNS effects dueto EFV600mg give;
  - TDF (Tenofovir) + 3TC (Lamivudine) orFTC (Emtricitabine) +DTG (Dolutegravir)
  - TDF (Tenofovir) + FTC (Emtricitabine) + EFV (Efavirenz) 400mg
  - AZT (Zidovudine) + 3TC (Lamivudine) + NVP (Nevirapine)
- Anemia or Lipodystrophy due to AZT give;
  - TDF (Tenofovir) + FTC (Emtricitabine) + EFV (Efavirenz) 600mg
- Both Anemia and Nephrotoxicity
  - ABC (Abacavir) + 3TC (Lamivudine) + DTG (Dolutegravir)
  - ABC (Abacavir) + 3TC(Lamivudine) +EFV (Efavirenz) 600 mg
- Severe Hypersensitivity e.g. Steven-Johnson Syndrome or Hepatotoxicity due to NVP
  - AZT (Zidovudine) + 3TC (Lamivudine) + DTG (Dolutegravir)
  - AZT (Zidovudine) + 3TC (Lamivudine) + ATV/r (Atazanavir boosted by Ritonavir or Lopinavir boosted by Ritonavir)
- Mild to Moderate Hypersensitivity due to NVP
  - AZT (Zidovudine) + 3TC (Lamivudine) + EFV (Efavirenz) 600mg

7.4.3 First Line ART for TB co-infections

Recommended first-line regimen

TDF (Tenofovir) + 3TC (Lamivudine) orFTC(Emtricitabine)) + EFV (Efavirenz) 600mg

7.4.4 Alternative First-Line Regimens for TB co-infections

- TDF (Tenofovir) + FTC (Emtricitabine)) + EFV (Efavirenz) 600mg
- TDF (Tenofovir) + 3TC (Lamivudine) or FTC (Emtricitabine)) + DTG (Dolutegravir)
- ABC (Abacavir) + 3TC (Lamivudine) +EFV (Efavirenz) 600mg or DTG (Dolutegravir)
- AZT (Zidovudine) + 3TC (Lamivudine) +EFV (Efavirenz) 600mg or DTG (Dolutegravir)

7.4.5 First Line ART for People Who Inject Drugs (PWID)

Recommended first-line regimen

TDF (Tenofovir) + FTC (Emtricitabine) or 3TC (Lamivudine) + DTG (Dolutegravir)

7.4.6 Alternative First-Line Regimensfor People Who Inject Drugs (PWID)

TDF (Tenofovir) + FTC (Emtricitabine) or 3TC (Lamivudine) + +ATV/r (Atazanavir boosted by Ritonavir)

NOTE:

- Clients on TDF/3TC/EFV600mg can be switched to TDF/3TC/EFV400mg (when available) to reduce CNS related toxicity with exception of Pregnant women and TB-HIV Co-infected patients

- TDF 300mg based regimens should not be initiated on patients with weight less than 35kg.
- EFV400 based regimens should not be initiated on patients with weight below 20Kg
- DTG does not interact with methadone, whereas EFV dramatically reduces methadone levels; that is why DTG is preferred to EFV in this population group.
- DTG dosing is 50mg od but it should be administered twice a day at a dose of 50mg for patients on Rifampicin based treatment because of drug interaction
- For TB co-infected patients, the dose for DTG should be given twice daily i.e. 50mg bd

Table 19: Recommended second line regimens for adults and adolescents

Patient group	Preferred (Default) Regimen	Alternative Regimen
Adults, adolescents(≥15 years) and Pregnant women/ lactating mothers	AZT/3TC+ATV/r: if TDF was used in first line. TDF/FTC+ATV/r: if AZT was used in first line	AZT/3TC+LPV/r in Case of TB ABC/3TC+ATV/r ABC/3TC+LPV/r TDF/FTC+LPV/r
HIV and TB co-infection	AZT/3TC+LPV/r (Lopinavir boosted by Ritonavir) ABC/3TC+LPV/r TDF/FTC+LPV/r	Note: double dosage of LPV/r to 800/200mg for Rifampicin based TB treatment.
People Who Inject Drugs (PWID)	ABC/3TC + ATV/r	DTG+(ABC/3TC)+ATV/r

Patient group	Preferred (Default) Regimen	Alternative Regimen
Adults, adolescents (≥15 years) and Pregnant women/ lactating mothers	AZT/3TC+ATV/r: if TDF was used in first line. TDF/FTC+ATV/r: if AZT was used in first line	AZT/3TC+LPV/r in Case of TB ABC/3TC+ATV/r ABC/3TC+LPV/r TDF/FTC+LPV/r

Note:

- ATV/r (300/100mg) cannot be used in children below 30kg.
- Patients failing 2nd line regimens may have extensive NRTI and NNRTIs associated resistance mutations (RAMS) which preclude/ minimize their use in third line regimens, thus should be referred to Specialized hospital.

7.5 Initiation of ART for children under 15 years

Among children under 15 years, there are 2 groups for eligibility to begin treatment:

i. Confirmed diagnosis of HIV: All children below 15 years of age who have a confirmed diagnosis of HIV, regardless of WHO clinical stage or CD4 cell count

ii. Presumptive HIV infection:

   - All HIV exposed children below 18 months old with a presumptive HIV infection.

7.5.1 Criteria for Presumptive Diagnosis of Severe HIV Infection in Infants and Children <18 Months

A presumptive diagnosis of severe HIV should be made if:

1. A child has a positive rapid HIV antibody test result;

   The child is symptomatic with two or more of the following; Oral thrush, Severe pneumonia and Severe sepsis AND/OR Any child who is fulfilling WHO stage 3 or 4 criteria

2. Other findings that support the diagnosis of severe HIV infection in an HIV-infected child include; Recent HIV-related maternal death and Advanced HIV infection (child's percent of CD4 count <20%)

When you see those symptoms **Start ART as soon as possible while waiting for DBS results Time to start ART in children under 15 years**

Children below 18 months old who qualify for presumptive diagnosis should start ART while waiting for DBS confirmation test results.

7.5.2 First-Line ARV Regimens in Infants and Children under 15 years

Table 20: Summary of first line ART Regimen for children under 15 years' old

Patient group	Preferred 1L	Justification	Alternatives
Children under 3 years	ABC/3TC+LPV/r	• Higher genetic resistance barrier • Avoids NNRTI transmitted resistance from mother during PMTCT • Possibility of malaria prevention • Spares AZT for second line	AZT/3TC+LPV/r AZT/3TC/NVP
Children 3 to 15 years	ABC/3TC+LPV/r	• Higher genetic resistance barrier • Avoids NNRTI transmitted resistance from mother during PMTCT • Possibility of malaria prevention • Spares AZT for second line	AZT/3TC+EFV ABC/3TC+EFV TDF/3TC/EFV AZT/3TC+LPV/r AZT/3TC/NVP

Patient group	Preferred 1L	Justification	Alternatives
For TB co-infected children 3 to 15 years already on LPV/r based regimen	ABC/3TC+LPV/r	• Continue with ABC/3TC+LPV/R but the dose of LPV/r should be doubled due to the interaction between ritonavir and rifampicin	
For newly initiated TB co-infected children 3 to 15 years	ABC/3TC+EFV		ABC/3TC+LPV/R but the dose of LPV/r should be doubled due to the interaction between ritonavir and rifampicin

NOTE: Children > 2 years with weight above 35kg can use TDF

Special Considerations for LPV/r syrup and tablets

- The LPV/r liquid requires a cold chain only during storage at the facility
- After dispensing, the liquid is stable at room temperature for 1 month so patients should be given a maximum of 1-month supply
- Patients do not have to refrigerate the LPV/r syrup
- LPV/r tablet is heat stable but must be swallowed whole and should not be split or crushed as it loses effectiveness

- LPV/r has shown protection benefit against malaria

Changing ARV Therapy in children under 15 years

Drug toxicity

The principles for changing ARVs and managing drug toxicity in children are similar to those applied to adults. When toxicity is related to an identifiable drug in the regimen, the offending drug should be replaced with another drug that does not have the same side effects.

7.6 Monitoring Patients on ART

During the first six months of treatment, patients should be reviewed monthly. The following should be done at every visit:

- Adherence counseling and support: At every visit, include an assessment of adherence (e.g. pill count, assessment of barriers).

Clinical monitoring:

- Clinical review of symptoms, signs, medication use and side effects
- Check for immune reconstitution inflammatory syndrome (IRIS)
- Physical examination including determination of HIV clinical stage and functional status
- TB Screening, OI screening
- Acute care, if necessary
- Management of symptoms

- Management of chronic problems, e.g. diabetes, hypertension
- Resupply CTX, ART and IPT if indicated

7.6.1 Laboratory Monitoring

Laboratory monitoring will be done at predetermined intervals.

- CD4 cell counts: For patients with CD4 cell count < 350 cell/mm^3, the CD4+ count should be repeated after 6 months, until patient is stable (CD4+ count > 350cell/mm^3 and two consecutive viral load< 50copies/ml). However, in cases of suspected IRIS, CD4 can be tested at intervals less than six months
- Viral load: should be measured 6 months after ART initiation to confirm virological response to ART.
- Patients with viral load > 1000 copies/ml should have a repeat viral load test done 3 months after receiving the result. Enhanced adherence form should be opened for the patient, and enhanced adherence counseling and support should be provided
- In the case of virological failure, it is important that the patient only receives a 1month supply of ARVs, to ensure that they attend the next appointment for ongoing adherence monitoring – both counseling and follow up viral load testing
- Patients with virological suppression (viral load < 1000 copies/ml) should undergo repeat viral load testing annually

Pregnant women and breastfeeding

- For newly diagnosed patient, conduct Viral Load test after 3 months from ART Initiation
- Conduct HIV Viral Load Test every 6 moths till cessation of breast feeding
- HVL< 1000 copies/mL; continue 6 months VL monitoring
- HVL > 1000 copies/mL; Conduct Enhanced Adherence Session (EAC) for 3 consecutive days followed by 1 session after every 2 weeks for 3 months.
- Repeat HVL 3 months after 1st EAC to monitor if adherence has improved, If adherence not improved continue with EAC.

Table 21: Schedule of Viral Load Testing after Initial non-suppression

Repeat Viral Load Test Results	Most Likely Reasoning	What to do
≤ 1000 Copies/ml	Poor adherence	Reinforce adherence be rechecked after 6 months and annually thereafter if viral load<1000 Copies/ml
>1000 Copies/ml	Diagnosis is virological treatment failure most likely due to resistant virus	Patients should be referred for consideration of switching to second line therapy

7.6.2 Other Investigations in Monitoring first-line ART

The goal of treatment is to improve patient condition by rising CD4 cell count and lower viral load to undetectable. Other investigation should be done to monitor patient progress.

Table 22: Investigations in Monitoring First-line ART

Phase of HIV Management	Recommended Test	Desirable Test
At the time of the HIV diagnosis	TB screening including Gene Expert; Urine dipstick	HBsAg CrAg if CD4<100 STI screen
Pre-antiretroviral therapy (pre-ART)	FBC, Chemistry: Creatinine; ALT Urine dipstick	
Start of ART	FBC, Chemistry: creatinine, eGFR Urine dipstick	Hemoglobin[1] (AZT) Creatinine clearance[2] (TDF) ALT[3](HBsAg+ve; NVP)

7.7 Category of patients

7.7.1 Stable patients

Being of ART ≥ months with all of the following

- Age above five years
- Have no adverse drug reactions that require regular monitoring
- No current illnesses (opportunistic infections and uncontrolled/ untreated co-morbidities)

- Have good understanding of lifelong adherence of 95% and has kept clinic visit appointments for the past six months
- On first line ARVs, with viral suppression below 50 Copies/ml
- In the absence of viral load monitoring, rising CD4 counts ≥350 cells/mm^3

7.7.2 Unstable patients

Being of ART ≥ months with all of the following

- Age < 5 years
- Any active opportunistic infections including TB in the past 6 months
- Poor or questionable adherence to schedule clinic visits in the past 6 months
- Recent detectable HIV Viral Load > 50 copies/mL
- CD4 Count of CD4<350 cell/mL
- People Who Inject Drugs
- Pregnant women
- Clients on Clients on second or third line ART regimes

7.8 Refill for category of patients

7.8.1 Refill for Unstable patients

The patient should refill monthly at the Care and Treatment Centre (CTC)

7.8.1 The 4 Refill options for differentiated ART Delivery for stable clients

The clients on this group should be offered less frequent clinical visits and extended drug refills

- Individual fast-track; Should be available at all health facilities where drugs are dispensed from a separate room to where clinical consultation is performed
- Group refill; More popular in health facilities with large cohorts and in urban areas provides peer support
- Mobile Outreach; Should be considered for hard-to-reach areas or added to existing outreach activities
- Family member; For families with multiple people on ART Follow-up essential for appropriate pediatric dosing

7.9 Opportunistic Infections

Important OIs affecting patients in Tanzania include tuberculosis (TB), cryptococcal meningitis, Pneumocystis Jiroveci Pneumonia (PJP), Kaposi's sarcoma, cervical cancer, recurrent bacterial pneumonia, recurrent oral candidiasis, oesophageal candidiasis, herpes zoster and toxoplasmosis.

7.9.1 Tuberculosis

Prevention of Tuberculosis among PLHIV

All PLHIV should be regularly screened for TB at the time of initial presentation for HIV care and at every visit to a health facility.

- Three I's (Prevention and treatment of TB among PLHIV)

- ICF: Intensified TB case-finding (ICF) and treatment of all identified TB cases
- Isoniazid Preventive Therapy (IPT) using: Use IPT to prevent TB
- IPC: Infection prevention and control of TB (IPC); refer patients with active TB to TB clinic if available.

Prevention and treatment of HIV infection in patients with active tuberculosis

- Provide HTS to patients with presumptive and diagnosed TB
- Provide co-trimoxazole preventive therapy for TB patients living with HIV
- Ensure HIV prevention interventions for HIV-negative TB patients and early ART initiation for TB patients living with HIV
- Provide IPT for TB/HIV co-infected patients who have successfully completed their TB treatment.

7.9.2 Cryptococcal Meningitis

Patients with cryptococcal meningitis should be urgently referred for further management as soon as the condition is suspected.

When to Suspect

Symptoms often sub-acute and progressively worsen over several weeks, this include fever, fatigue, headache, blurred vision and confusion.

7.9.3 Kaposi's Sarcoma (KS)

Patients with KS should be referred for further management as soon as the condition is suspected.

When to Suspect

The patient presents with red/purple/brown spots or lesion on the skin (common on face, legs and hands) or mucus membrane (common on mouth, throat and outside eyelids). Also may present with coughing, fever, shortness of breath or swollen lymph nodes.

7.9.4 Cervical Cancer

All women with HIV are recommended to screen for cervical cancer annually at CTC using VIA (visual inspection of the cervix with acetic acid). All HIV infected women should be counseled and referred for cervical cancer screening

7.9.5 Herpes Zoster

Patients with Herpes Zoster are diagnosed based on history taking and physical examination. The clinical presentation of HSV infection includes:

- Fever
- Lymph node enlargement
- Small painful vesicles
- Painful ulcers on the mucosa and skin
- Pain along gluteal and upper thigh muscles may occur with genital/rectal HSV

Management of Herpes Zoster

Provide medications such as

- Acyclovir 400mg orally 8 hourly for 7 days for mild and moderate cases of HSV
- Acyclovir 800mg orally, five hourly for 5 days
- Antibiotics such as Erythromycin should be used for secondary bacterial infection
- Analgesics for pain management

NB: For severe and recurrent HSV refer the patient for further management

7.9.6 Oropharyngeal, Oesophageal, Trachea-Bronchial and Pulmonary Candidiasis

The Patient with Oropharyngeal, Oesophageal candidiasis may complain of pain and/or difficulty in swallowing. On examination white painless plaque ("curd like") on buccal or pharyngeal mucosa or tongue surface that can easily be scrapped off will be seen.

For trachea-bronchial and pulmonary may present with fever, non-productive cough, dyspnea and tachypnea.

Management

- Fluconazole oral/IV 150mg/day or 200mg/day for 2-3 weeks
- Miconazole oral gel 3-4 times/day after meals for 7 days
- Nystatin oral suspension 4-6mls 3-4 times/day continue with Gentian violet solution for at least 2days after oral lesions have disappeared

NB: For severe cases refer for further management

7.9.7 Pneumocystis Jerovecii Pneumonia (PJP)

Patients with PJP usually present with non-productive cough, fever, chest tightness and shortness of breath that has evolved over 2 to 4 weeks.

Management

Refer the patient urgently for further management as soon as the condition is suspected.

7.9.8 Toxoplasmosis

Patient with Toxoplasmosis may present with clinical features such as;

- Focal paralysis or motor weakness depending on the brain area affected
- Neuro-psychiatric manifestations corresponding to the affected area in the brain
- Altered mental status such as forgetfulness

Management

Refer the patient urgently for further management as soon as the condition is suspected.

7.10 Preventing Common Opportunistic Infections in the HIV Infected Person

Many opportunistic infections can be prevented by using cotrimoxazole prophylaxis, particularly in the case of:

- Bacterial infections e.g. pneumonias,
- Skin infection
- Sepsis
- Pneumocystis Jiroveci Pneumonia (PJP)
- Toxoplasmosis

Indication for Prophylactic Treatment Using Cotrimoxazole

- Adults, adolescents, and pregnant women with CD4 cell count ≤350 cells/mm3
- Initiate CPT in all children <5 years of age regardless of CD4 and WHO clinical stage
- All HIV exposed uninfected infants (initiate in all starting 4-6 weeks after birth)
- All HIV-infected persons with active TB

Note:

1. Caution should be exercised when initiating Cotrimoxazole Preventive Treatment (CPT) during the first trimester of pregnancy in women who may not have access to good nutrition and anaemic patients, because Cotrimoxazole causes deficiency in folic acid.
2. Pregnant women who are receiving CPT do not need sulfadoxine pyrimethamine (SP), an additional medication to prevent malaria
3. CPT will continue to be provided to virologically suppressed patients (<50 copies/mL) with low CD4 cell counts (immunological non-responders).

7.11 When to refer for Second line Management

- Client with VL more than 1000copies /ml after two successive tests at least three months apart with assurance of good adherence (Enhanced adherence counseling)
- Patients should be evaluated for correctable factors, such as:

- Inappropriate dosing schedules
- Drug interactions
- Non adherence
- Malabsorption

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APPENDIX: Types of toxicities associated with first and second line ARV drugs

ARV	Majortypestoxicity	Risk Factors	Suggested management
TDF	Tubular renal dysfunction, Fanconi syndrome	Underlying renal disease Older age BMI<18.5(or bodyweight <50kg) Untreated diabetes mellitus Untreated hypertension Concomitant use of nephrotoxic drugs or a boosted PI	If TDF is being used in first-line ART, substitute it with AZT or ABC If TDF is being used in second-line ART (AZT use in first line ART),substitute it with ABC
	Decreases in bone mineral density	History of osteomalacia and pathological fracture Risk factors for osteoporosis or bone loss	
	Lactic acidosis or severe hepatomegaly with steatosis	Prolonged exposure to nucleoside analogues Obesity	
	Exacerbation of hepatitis B (hepatic flares)	Discontinuation of TDF due to toxicity	No available alternative drug in the country for treatment of hepatitis B e.g. Entecavir
ABC	Hypersensitivity reaction	Genetic predisposition (HLA-B 5701 gene)	If ABC is being used in first-line ART, substitute with TDF or AZT

ARV	Majortypestoxicity	Risk Factors	Suggested management
AZT	Anaemia, neutropaenia, myopathy,lipoatrophy orlipodystrophy	Baseline anaemia or Neutropaenia CD4 cell count ≤200 cells/mm3	If AZT is being used in first-line ART, substitute it with TDF or ABC If AZT is being used in second-line ART, substitute it with ABC
	Lactic acidosis or severe hepatomegaly with steatosis	BMI >25 (or body weight >75 kg) Prolonged exposure to nucleoside analogues	
LPV/r	Hepatotoxicity	Underlying hepatic disease HBV and HCV co-infection Concomitant use of hepatotoxic	Replaced it with ATV/r
	Pancreatitis	Advanced HIV disease	
	Lipoatrophy or metabolic syndrome dyslipidaemia, severe diarrhea and risk of prematurity	Risk factors unknown	
ATV/r	Indirect Hyperbilirubinaemia(clinical jaundice)	Underlying hepatic disease HBV and HCV co infection Concomitant use of hepatotoxic drugs	Indirect hyperbilirunemia is Usually transient and ATV/r can be continued, however, if severe jaundice develops and is associated with significantly raised transaminases, then ATV/r should be replaced with LPV/r

ARV	Majortypestoxicity	Risk Factors	Suggested management
	Nephrolithiasis and Risk of prematurity	Risk factors unknown	Replace it with LPV/r
EFV	Persistent central nervous system toxicity(such as dizziness, abnormal dreams, depression or mental confusion)	Depression or other mental disorder (previous or at baseline) Taking with high fat meal	Replace it with DTG or NVP. If the person cannot tolerate either INSTI or NNRTI, use boosted PIs
	Hepatotoxicity	Underlying hepatic disease–HBV and HCV co infection Concomitant use of hepatotoxic drug	
	Convulsions	History of seizure	
	Hypersensitivity reaction, Stevens- Johnson syndrome	Risk factors unknown	
	Potential risk of neural tube birth defects (very low risk in humans)		
	Male gynecomastia		

ARV	Majortypestoxicity	Risk Factors	Suggested management
NVP	Hepatotoxicity	Underlying hepatic disease HBV and HCV co-infection Concomitant use of hepatotoxic drugs CD4 >250 cells/mm3 in women CD4 >400 cells/ mm3formen First month of therapy(if lead-in dose is not used)	EFV. If the person cannot tolerate either NNRTI, use DTG or a boosted PI
	Severe skin rash and hypersensitivity reaction(Stevens- Johnson syndrome)	Risk factors unknown	
DTG	Increase in Cholesterol levels; mild elevated liver enzymes; significant rises in creatine levels; Insomnia and headache may also be experienced.	History of dyslipidemia, diabetes, hypertension	Monitor cholesterol levels; Monitor liver function especially in HBV and HCV. Provide symptomatic treatment
ETV	Common: Skin rash, allergic reactions, Nausea, increased Low density Lipids, Gastrointestinal disorders and Fatigue Rare:Severeskin rash, Peripheral neuropathyandrenal failure	No known risk factors	Monitor severity and occurrence of fever and other symptoms. Provide Symptomatic treatment

ARV	Majortypestoxicity	Risk Factors	Suggested management
RAL	Increased Cholesterol levels, Glucose, Aspartate Amino Transferase (AST), Bilirubin. Rash, Cough, Fatigue, dizziness and insomnia	History of dyslipidemia, diabetes, hypertension	In case of severe adverse effects, switch to DTG if patient is>12yearsold
DRV/r	Increased Cholesterol levels, triglycerides; Diarrhea, Headache, Rash, Abdominal pain and Nausea	History of dyslipidemia	Monitor severity and occurrence of fever and other symptoms. Provide symptomatic treatment