Lesotho

NATIONAL GUIDELINES ON THE USE OF **ANTIRETROVIRAL THERAPY** FOR HIV PREVENTION AND TREATMENT

Sixth Edition

January 2022

BOPHELO

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ABBREVIATIONS AND ACRONYMS

AAC	ART Advisory Committee
ABC	Abacavir
AFB	Acid-fast bacilli
AIDS	Acquired Immune Deficiency Syndrome
ALT	Alanine aminotransferase
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral
ATT	Anti tuberculosis treatment
ATV	Atazanavir
AZT	Azidothymidine, also known as Zidovudine
CDC	Centres for Disease Control and Prevention
CSF	Cerebrospinal Fluid
CTX	Co-trimoxazole
CRAG	Cryptococcal antigen
CXR	Chest X-ray
DBS	Dried Blood Spot
DNA	Deoxyribonucleic Acid
DRV	Darunavir
DST	Drug Susceptibility Testing
DTG	Dolutegravir
EC	Emergency Contraceptive
EFV	Efavirenz
ELISA	Enzyme-linked immunosorbent assay
eMTCT	Elimination of Mother-to-Child Transmission of HIV
EPTB	Extra-pulmonary tuberculosis
ETV	Etravirine
FBC	Full Blood Count
FP	Family Planning
FTC	Emtricitabine
HCW	Healthcare worker
Hb	Haemoglobin
HBsAg	Hepatitis B surface antigen
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
HRZE	Isoniazid, Rifampicin, Pyrazinamide, Ethambutol
HTS	HIV Testing Services
INH	Isoniazid
IPT	Isoniazid Prophylaxis Therapy
IUD	Intra-Uterine Device
LFTs	Liver Function Tests
LPV/r	Lopinavir/Ritonavir boosted
MCH	Maternal and Child Health
MDR-TB	Multi-Drug Resistant TB
MOH	Ministry of Health
MTCT	Mother-to-Child Transmission of HIV
MUAC	Mid-Upper-Arm Circumference
NAAC	National ART Advisory Committee
NGO	Non-Governmental Organisation
NVP	Nevirapine
NRTI	Nucleoside Reverse Transcriptase Inhibitor
NtRTI	Nucleotide Reverse Transcriptase Inhibitor
NNRTI	Non-nucleoside Reverse Transcriptase Inhibitor
NSAIDs	Non-steroidal Anti-Inflammatory Drugs
OI	Opportunistic Infection
PCP	Pneumocystis jirovecci Pneumonia
PCR	Polymerase Chain Reaction
PEP	Post-Exposure Prophylaxis
PITC	Provider Initiated Testing and Counselling
PLHIV	People Living With HIV
PMTCT	Prevention of Mother-to-child Transmission of HIV
PNC	Postnatal care
PrEP	Pre-exposure prophylaxis
RAL	Raltegravir
RH	Rifampicin, Isoniazid
RPR	Rapid plasma regain (syphilis test)
RTV	Ritonavir
RUTF	Ready-to-use Therapeutic Food
SJS	Stevens-Johnson Syndrome
STI	Sexually Transmitted Infection
TB	Tuberculosis
3TC	Lamivudine
TDF	Tenofovir Disoproxil Fumarate
TLC	Total Lymphocyte Count
TNA	Trained Nurse Assistant
TPT	Tuberculosis Preventive Therapy
VDRL	Venereal Disease Research Laboratory (syphilis test)
VHW	Village Health Worker
WBC	White Blood Count
WFP	World Food Programme
WHO	World Health Organization
XDR-TB	Extensively Drug Resistant TB

FOREWORD

With the revision, publication and implementation of the Sixth Edition of the National Guidelines on the Use of Antiretroviral Therapy for HIV Prevention and Treatment (ART Guidelines), the Government of Lesotho (GOL) is embracing the most up to date global evidence to redouble its commitment and efforts to maintain gains made in the HIV response in Lesotho.

The Government of Lesotho since 2004 has worked tirelessly to scale up access to comprehensive HIV prevention, treatment and care services to all Basotho through a nurse driven service delivery model in public facilities. Over the past 15 years, the HIV response has demonstrated resilience through key shifts in policy, strategy and innovation. Lesotho has consistently adopted guidance that supported local efforts to meet global targets and attain HIV epidemic control in 2020.

The successful adoption and implementation of option B+ for the prevention of mother to child transmission of HIV in 2013, Test and Treat for all in 2016, and differentiated HIV testing services in 2018, coupled with the scale up of improved advanced HIV disease management, differentiated service delivery, ART optimization, HIV drug resistance monitoring and management have been instrumental in propelling the country towards HIV epidemic control.

The adoption of the Test and Treat policy has resulted in significant progress in HIV response as demonstrated by the Lesotho Population-based HIV Impact Assessment (LePHIA) which revealed that Lesotho has:
Reduced new HIV infections (incidence) by 55% from approximately 10,000 new infections in 2016 (HIV incidence of 1.1%) to 5,000 new infections (HIV incidence of 0.45%) in 2020.
Surpassed the Global UNAIDS 90-90-90 targets by 2020! 90% of people living with HIV now know their HIV status, 97% of those who know their HIV status are on life saving anti-retroviral therapy (ART), and 92% of those on ART are virologically suppressed.

However, despite this progress in the response, new HIV infections remain unacceptably high, with high rates of HIV related stigma, discrimination and inequalities remaining prevalent especially among key populations. The COVID-19 pandemic has further exposed and compounded these inequalities, threatening the gains made in the HIV response in Lesotho.

Therefore, in line with the Global AIDS strategy 2021-26 and continuing all possible efforts to END AIDS as public health threat by 2030, the Government of Lesotho with these ART guidelines focuses on addressing inequalities that facilitate the acquisition and spread of HIV and give rise to catastrophic effects of HIV in communities country wide. The ART guidelines uniquely support access to much needed additional HIV prevention interventions such as event driven HIV pre-exposure prophylaxis and the dapivirine vaginal ring. They also ensure that infants and children are not left behind and also have access to better quality ART. This guideline focuses on providing client centred HIV services: supporting six monthly clinic visits, expanded medication pick-up points for people established on ART, and improved guidance on differentiated service delivery models and management of advanced HIV disease.

The vision of ENDING AIDS by 2030 is within our reach, and a society free of HIV-related stigma and discrimination is possible. These ART guidelines call all healthcare providers to reinvigorate and reenergize their efforts to improve access to quality comprehensive HIV prevention, treatment and care services throughout the country. No Mosotho living with HIV should be left behind! All that is possible to prevent HIV-related deaths in our communities should be done. A solid foundation is now in place for the HIV response to achieve its goals; however, this will only be possible through continued investment and commitment towards health systems strengthening activities that focus on delivering affordable and accessible health services such as ART in a decentralized manner at the community level in line with the Ministry of Health universal health coverage goal.

I am confident that successful implementation of these ART guidelines will lead to an HIV-free generation in Lesotho and n behalf of all Basotho, I wish to thank all the individuals who have contributed to the development these guidelines.

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ACKNOWLEDGMENTS

The revision of these guidelines was done under the distinguished leadership of the Director General of Health Services, Dr. Nyane Letsie. The Ministry expresses sincere thanks to its HIV development partners for their technical inputs. These partners include but are not limited to: WHO, UNAIDS, UNICEF, PEPFAR, USAID, CDC, Elizabeth Glaser Pediatric AIDS Foundation (EGPAF), Baylor College of Medicine Children's Foundation – Lesotho (BCMCFL), Population Services International Lesotho (PSI), SolidarMed, JHPIEGO, Mothers2Mothers (M2M), Lesotho Boston Health Alliance (LBHA), Clinton Health Access Initiative (CHAI), LENASO, LENEPWA, LPPA, ICAP, Partners in Health and The Carter Center. The academic institutions which participated in the process are also acknowledged for their contributions.

The Ministry of Health wishes to acknowledge members of the HIV/TB Technical Working Group and their respective organizations for their technical expertise during the revision of the Lesotho National ART guidelines, in particular members of the guidelines development task team who provided direction, assistance and guidance during the entire period of this exercise:

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- Dr Susan Tembo - WHO Lesotho
- Dr. Fred Asiimwe, – CDC
- Ms Mamorapeli Tsôeu, – CDC
- Ms Puleng Ramphalla, – CDC
- Dr. Justine Mirembe, – USAID
- Dr. John Byabagambi, – USAID
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EXECUTIVE SUMMARY

The HIV epidemic in Lesotho is generalized and hyper-endemic, with prevalence among adolescents and adults aged 15 years and older estimated at 22.7% (27.4% females and 18.4% males), and as high as 46.5% among women aged 40-44 years. HIV prevalence increases with age in both sexes. Adults (15+ years) living with HIV are estimated at 324,000 .

Over the past decade, Lesotho has made significant progress in reducing HIV incidence and AIDS related deaths. HIV incidence has been reduced by more than 50% between 2016 and 2020, from approximately 10,000 new infection (incidence of 1.1%) in 2016 to approximately 5,000 new infection (incidence of 0.45%) in 20201.

The country has achieved the first of the UNAIDS 90-90-90 targets by 2020 and surpassed the second and third 90 targets! 90% percent of people living with HIV know their HIV status, 97% of those who know their HIV status are on life saving anti-retroviral therapy (ART) and 92% of those on ART are virologically suppressed1.

AIDS related deaths have declined by 38% since 2010, falling short of the 2016 United Nations General Assembly Political Declaration on HIV and AIDS target of 50%. AIDS deaths among children 0-14 years were 2,800 in 2000, falling to 1,600 by 2010 and 530 in 2019. AIDS deaths among women were 4,208 in 2000, falling to 2,619 in 2010 and 1,829 in 2020. AIDS deaths among men reduced from 3,291 in 2000 to 2,383 in 2010 and 1,912 in 2020 .

The Ministry of Health (MOH) continues to scale up access to comprehensive HIV prevention, treatment and care services throughout the country, strategically focusing on:

- Reducing new annual HIV infections by 50% from 13,300 in 2017 to 6,650 or less by 2023.
- Reducing annual AIDS related deaths by 50% from 4,900 in 2017 to 2,450 or less by 2023.
- Eliminating mother to child transmission of HIV from 11.3% in 2017 to less than 5% by 2023.

The revision of the 2016 National Guidelines on the Use of Antiretroviral Therapy for HIV Prevention and Treatment (5th edition) has been triggered by MOH desire to:

- Improve access to additional HIV prevention interventions such as event driven PrEP and dapivirine vaginal ring.
- Complete ART optimization, adopting dolutegravir-based regimens the preferred 1st line regimen for adults, adolescents, children and infants.
- Provide comprehensive guidance on the implementation of key service delivery models
- such as providing 3-6 month (preferably every six months) clinic visits and ART refills, community adherence groups and community ART initiation.
- Improve management of advanced HIV disease, HIV drug resistance monitoring and
- response.
- Align recommendations with the latest TB, eMTCT and HTS guidelines.

This sixth edition National ART Guidelines emphasizes delivery of quality, non-judgmental, people-centred HIV service throughout the country. Implementation is expected to enable Lesotho to reach the strategic goal of Ending AIDS, Ending Inequalities by 2030.

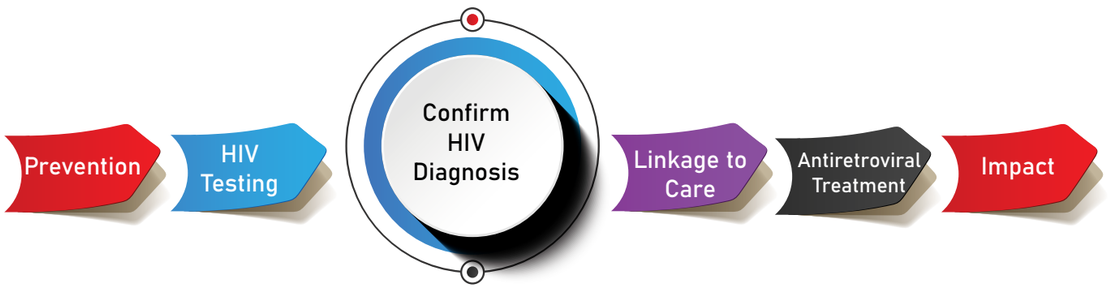
CHAPTER 1: INTRODUCTION

The sixth edition of the National ART Guidelines comes following a review of the fifth edition of the guidelines from 2016, the addendum from 2019 and an adaptation process of the Consolidated Guidelines on HIV Prevention, Testing, Treatment, Service Delivery and Monitoring: Recommendation for a Public Health Approach from the World Health Organization in July 2021. The process of developing these guidelines was led by the Ministry of Health and involved multiple stakeholders who reviewed the scientific evidence, rationale, and feasibility of translating the global recommendations into country-specific national ART guidelines.

Evidence has clearly demonstrated that starting ART as soon as possible after HIV diagnosis, regardless of the HIV clinical stage or CD4 count, improves the health outcomes of people living with HIV and prevents HIV transmission.

Highlights of the 2021 National ART Guidelines	
Prevention	Introduction of event-driven PrEP Introduction of dapivirine vaginal ring Updates to oral PrEP monitoring, starting and stopping Dual prophylaxis (AZT + NVP) for infants at high risk of acquiring HIV
HIV diagnosis	Birth testing for high-risk infants Alignment with eMTCT and HTS Guidelines
Antiretroviral treatment	Optimization of ART for all ages Recommendations for ART treatment in infected neonates Rapid initiation of ART, including for those with TB coinfection
ART monitoring	Recommendation for use of point-of-care viral load testing for early detection of treatment failure
Service delivery	Adoption and implementation of differentiated service delivery, such as: • Provision of 6-month ART dispensing to PLHIV established on ART • ART initiation and maintenance at all levels • Prioritization of mental health and psychosocial interventions for improved HIV outcomes

Figure 1.1: The HIV Care Cascade



CHAPTER 2: SERVICE DELIVERY

INTRODUCTION

Provision of HIV services should be designed, adapted and delivered to fully satisfy the needs of people living with HIV (PLHIV) in Lesotho. This chapter provides guidance on key service delivery issues that promote and ensure comprehensive delivery of HIV prevention, treatment and care that supports retention in care.

Quality health services are

- **Effective:** providing evidence-based health-care services to those who need them
- **Safe:** avoiding harm to people for whom the care is intended
- **People-centred:** providing care that responds to individual preferences, needs and values

SECTION 2.1: DECENTRALIZATION OF HIV CARE AND TREATMENT

Decentralization is the transfer of authority and technique or dispersal of power, in public planning, management and decision-making from the national level to the sub-national levels or more generally from higher to lower government levels in a country . With approximately 60% of people in Lesotho residing in rural areas, the country has adopted decentralization as a public health approach to improve access of quality health services in order to improve health, well-being and survival of PLHIV.

Benefits of decentralization include :

- Integrated health service delivery at lower levels, particularly for primary health care
- Integration of public and private entities and improved inter-sectoral coordination
- Empowerment of health care professionals at all levels of decision-making
- Reduction in inequalities and promotion of equity between different geographic settings and between urban and rural areas.
- Cost containment and reduction in duplication of services at secondary level of health service delivery
- Greater community involvement in management in health leading to more appropriate health plans in relation to local health needs and problems
- Greater community ownership, participation and willingness to contribute to financing of health needs through local government structures
- Overcoming problems and delays due to factors such as long distances, inadequate communication and poor road networks/terrain
- Some models of decentralization, such as Community ART Groups (CAGs), demonstrate increased levels of retention in care
- Decentralization also helps to decongest health facilities so that clinicians can focus on managing more acute and/or complicated health conditions and clients

PLHIV can be initiated and maintained on ART at all levels (hospitals, health centres, health posts, and in the community at health facility outreach clinics) by appropriately trained personnel.

SECTION 2.2: DIFFERENTIATED SERVICE DELIVERY

Differentiated service delivery (DSD), previously referred to as differentiated care, is a client-centered approach that simplifies and adapts HIV services across the cascade to reflect the preferences, expectations and needs of people living with and vulnerable to HIV while reducing unnecessary burdens on the health system.

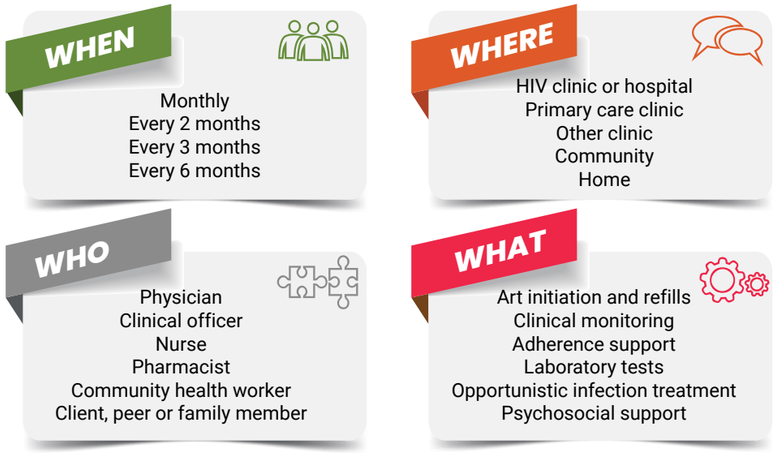
The World Health Organization has recommended DSD for HIV treatment since 2015 with published evidence from the past decades showing that DSD can , :

- Enhance client outcomes.
- Ensure that health system functions efficiently

Enabling the health system to refocus resources to those in most need.
Care can be differentiated along the HIV cascade including:

- HIV testing services
- HIV prevention services
- ART initiation
- ART delivery
- ART adherence and treatment literacy support
- Opportunistic infection screening and management
- Psychosocial support

Figure 2.1: Building Blocks of Differentiated ART Service Delivery



There are three important elements that need to be considered when differentiating HIV care to enable maximum benefit for both clients and health systems. These are **clinical characteristics** of the client, type of **sub-population,** and **context.**

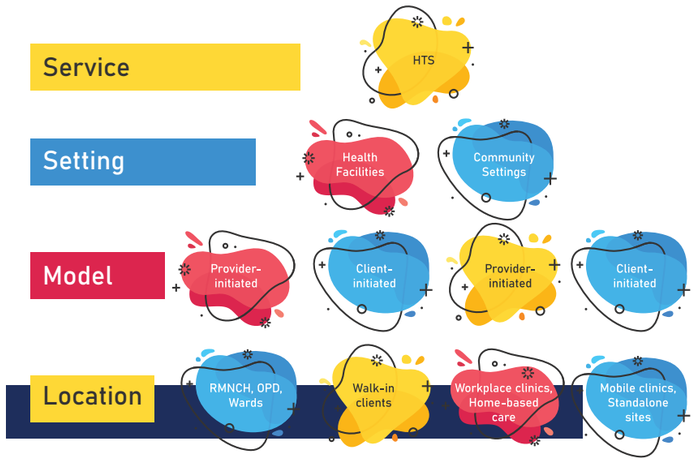
Barker C et al. Journal of the International AIDS Society 2017, 20(Suppl 4):21648 http://www.jiasociety.org/index.php/jias/article/view/21648 | http://dx.doi.org/10.7448/IAS.20.5.21648
Nichols BE et al. Journal of the International AIDS Society 2021, 24:e25692 http://onlinelibrary.wiley.com/doi/10.1002/jia2.25692/full | https://doi.org/10.1002/jia2.25692
World Health Organization (2017). Key Considerations for Differentiated ART Delivery for Specific Populations: Children, Adoelscents, Pregnant and Breastfeeding Woman and Key Populations, 2017

Children, adolescents, pregnant and breastfeeding women and members of key populations have formally been excluded from service delivery options, but they should not be excluded from differentiated care based on their population characteristics: age, pregnancy or breastfeeding status, drug use, occupation, sex, gender identity or sexual orientation. **Services should be tailored to meet the needs and preferences of these groups.** A variety of differentiated service delivery options willbe available in a well-functioning ART system. Services should also be tailored to manage families together as much as possible to simplify access to services and reduce costs.

Differentiated HIV service delivery can address inequities in the access of key populations to HIV services by developing new HIV services delivery models that meet the specific needs of key populations and reach marginalized, criminalized and stigmatized groups. Differentiated HIV service delivery can also enable key population communities to be more involved in HIV treatment and care.

SECTION 2.3: DIFFERENTIATING HTS

Testing services may be adapted to target both high-risk populations and those that are hard to reach. Lesotho has adopted a combination of testing approaches to maximize yield, efficiency, cost-effectiveness and equity with the aim of focusing HTS on populations at greatest risk for HIV and who are underserved.



HTS Differentiation by Population Group

- **Infants:** Testing within RMNCH clinic, adolescent corners, children's wards, TB clinics and communities. **Utilize point-of-care (POC) testing to reduce result turn-around-time.**
- **Children:** Testing within RMNCH clinic, children's wards, TB clinics and communities. Prioritize testing in TB and malnutrition clinics and wards. Offer testing to children whose parents or siblings are living with HIV and to orphans and vulnerable children.
- **Adolescents and Young People (10-24 years):** Testing during evenings and weekends, and at schools and workplaces. Utilize peer approaches. Integrate sexual and reproductive health.
- **Key populations (KP):** KPs include sex workers, men who have sex with men, transgender people, people who infect drugs and people in prisons and closed settings. Tailor testing to increase access. Community testing has better reach than facility testing. Utilize peer approaches and HIV self-testing

- **Pregnant and breastfeeding women (PBFW):** Testing at RMNCH clinic, OPD, maternity wards, and communities. Offer testing early during antenatal care (first visit) and retesting every three months. **Incorporate dual HIV/syphilis testing and partner testing.**
- **Men:** Adult men (25-49 years) continue to present for care at advanced stages of HIV. Offer testing at locations men frequent and incorporate extended hours of service. Utilize peer approaches and HIV self-testing.

SECTION 2.4: DIFFERENTIATING ART INITIATION

Test and treat or test and start is the preferred approach to ART initiation. Same-day ART initiation is recommended upon confirmed HIV diagnosis, based upon client readiness.

Facility-based ART initiation is the standard of care. After confirmation of HIV infection, clinical evaluation is performed which includes staging, screening, diagnosis and management of opportunistic infections and comorbidities. HIV and ART education is provided together with a psychosocial readiness assessment. ART is initiated. Primary and supportive care are provided.

Migrant Workers

Migrant workers continue to face difficulties accessing and remaining on ART. It is important to adapt care to meet their needs...without delaying life-saving ART.

- Discuss intentions and plans for follow-up, including in-person and virtual visits. Is a short-term follow-up visit possible?
- Begin multi-month dispensing at ART initiation visit, if necessary.
- Use telephonic follow-up for check-up 7, 14, 30 and 60 days after initiation to discuss baseline lab results, assess side effects, review adherence, reinforce U=U and reaffirm DSD plan. Advise on warning signs: when to seek immediate health care.
- Investigate options for care where they are working and/or living.
- Offer sick leave note to facilitate monitoring visits.

Despite implementation of test and treat, there are still barriers to timely initiation of people living with HIV on antiretroviral treatment and screening for TB. ART is typically initiated in health facilities only, although some health facilities are initiating ART during health outreach events especially in hard-to-reach areas. For some PLHIV diagnosed in the community, health facility-based ART initiation represents a significant barrier. Community ART Initiation is an option that should be considered to improve access to and uptake of ART. Some communities may use formal structures while others use mobile tents. Community activities are linked to nearby health facilities to strengthen support and expand services.

SECTION 2.5: DIFFERENTIATING ART DELIVERY

Innovations in service delivery for PLHIV have primarily focused on case-finding and on delivery of high-quality chronic care. Differentiated ART delivery is a component of chronic care services that addresses how, when, and where ART is dispensed. Interventions respond to specific local challenges faced by clients or the health system. The same option will not apply at all sites or to all populations. Client's differing preference should be included. Models for differentiated ART delivery continue to expand and evolve. Health care workers have a significant role to play in informing clients of options and services that are available to them. Many models empower clients and promote client-led care. PLHIV need clinical review and laboratory monitoring as well, which may be delivered in conjunction with ART or through dedicated, but separate, scheduling.

Established on ART

PLHIV are successfully established on ART when:

- Taking ART for at least six months
- No current illness (excludes well-controlled chronic health conditions)
- Good understanding of life-long treatment with adequate adherence support
- Evidence of treatment success (at least one suppressed viral load)

Multi-month dispensing (MMD)

PLHIV, including children and adolescents, established on ART should be offered clinical visits every 3 to 6 months, preferably every six months. Routine clinical consultations should be coordinated with planned medicine pick-ups to reduce visit frequency. ARV drug supply management should be strengthened to ensure the availability of ART. **Routine monitoring should not be a reason to withhold MMD** e.g. if a client already on MMD presents in the facility and is due for viral load the following month. Continue to provide them with MMD while appointing them for viral load testing. Peferably, phlebotomy dates will be aligned to MMD refill dates.

TB preventive therapy is key to reducing the incidence of TB among PLHIV. If TPT is begun at ART initiation, TPT should be completed prior to entering a differentiated ART delivery model. **However, PLHIV established on ART will sometimes need TPT, such clients sholud be provided MMD TPT in line with their ART refills.** Medication supply should align with ART among those established on ART, including MMD. Counsel PLHIV on adherence to TPT, side effects, drug-drug interaction and when to return between scheduled visits.

Fast-track Refills

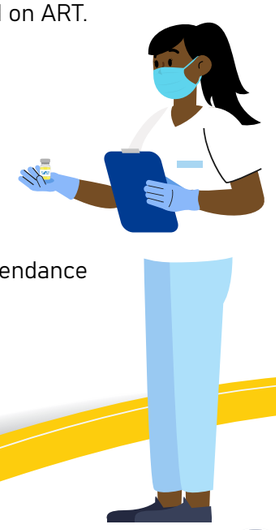
Fast-track refills are a facility-based differentiated ART delivery targeting pharmacy services within 30 minutes. Clients who have a valid prescription in the bukana and ART card collect refills directly from the dispensing point any time during clinic opening hours without having to be seen by a clinician. This approach has greatest value at facilities where dispensing is performed in a separate space by a separate healthcare worker to the clinical consultation. Children and adolescents may also receive fast-track refills.

Club Refill

Clubs are a facility-based health care worker-led differentiated model. This model can be implemented in sites with large cohorts and in urban areas. As a group model, it provides the additional benefit of peer support. Service providers and clients collaboratively organize into clubs of 10-20 clients on a given day. The club is then booked at the same time for each refill. On arrival, a health care worker (nurse, counsellor, or expert client) facilitates discussion, identifies any club member who has a new clinical problem requiring review, and then distributes the medication. Medication should be pre-packed and labelled prior to the club meeting. This strategy is often utilized for paediatric and adolescent clients to maximize peer support. Clubs can cater for newly initiated clients as well as those that are established on ART.

Teen Clubs are an example of peer support groups at facilities

- Encourage attendance by adolescents and youth (10-24 years of age)
- Psychosocial support is led by peers with counsellors and clinicians assisting
- HIV disclosure is required prior to enrolment as the disease is openly discussed
- Club meetings may be held monthly or quarterly
- Some facilities host clubs on Saturday to avoid conflicts with school attendance
- MMD can be integrated into club refills



Outreach ART Refill

This model is community-based individual ART delivery and should be used if significant numbers of clients will benefit from provision of ART at a designated point in a hard-to-reach area. This refill option is chosen only where it is guaranteed that the logistics for regular outreach from a facility to the community is available every three to six months. In Lesotho, outreach ART refill is often combined with other health services to the community, such as RMNCH and non-communicable diseases care and treatment. Children, adolescents and adults are eligible for outreach refills.

Prior to the outreach, the team prepares documentation (ART cards of outreach clients, registers and ART dispensing tally sheet) and medication required for refills. Formal pre-packing of ART and other medications, e.g. co-trimoxazole and TB preventive therapy, facilitates distribution at the outreach site. Storing outreach client files in a specific folder/shelf/drawer also facilitates easier preparation.

Decentralized Drug Distribution

Another option for medication refill is the use of decentralized, non-facility-based, distribution. Established clients on ART can enrol and a 6-12 months prescription is generated and transmitted electronically to the central dispensing unit (CDU). The CDU receives prescriptions from health facilities, dispenses the medicines, and distributes the dispensed client medicine parcels to a convenient alternative pick-up point such as private pharmacies, health posts, retail shops, churches, schools, etc. The client will then collect the already dispensed medicine parcel from collection points of their choice. Apart from the conventional pickup points based in the communities, individuals can also choose to collect medicines from the semi-automated vending machines. The process of collecting pre-dispensed medicines at these units is quick and easy using mobile technology.

Community ART Groups

Community ART Groups (CAGs) is a community model of care introduced and implemented in Lesotho since 2012. While many models exist, the Lesotho Community ART group model is defined as a self-formed group of stable PLHIV on ART from a community in the same geographic location.

- Group members take turns collecting antiretroviral medicines at the clinic.
- Clinical consultation and blood drawing are done at the clinic for the entire group.
- Group members perform community-based TB symptom screening, delivery of medications, provide adherence support and monitor treatment outcomes.

The CAG provides a means of accessing ART for the group members and a source of social support. PLHIV in CAGs continue to receive routine clinical assessments and monitoring tests from their local health facilities. CAGs can have up to 12 members. The final choice to join a CAG lies with the client.

Benefits of CAGs

There are multiple benefits of CAGs as illustrated in Fig 2.3. The success of CAGs depends on

- Sufficient support and resources
- Flexible and reliable medication supply
- Access to quality clinical management
- A reliable monitoring system for client care
- Ongoing evaluation and further adaptation

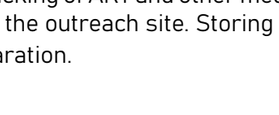


Figure 2.3 Benefits of CAGs

Standard Operating Procedures for Community ART Groups

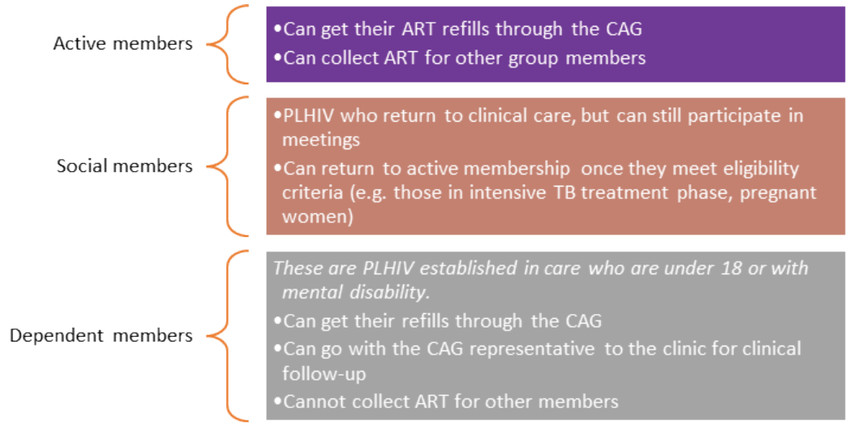
Inclusion criteria for active members

- Age - adults aged > 18 years
- Disclosure- willing to disclose HIV status to each other
- Established on ART
  - On ART at least six months
  - Treatment success (suppressed viral load)
  - Clinically well with no current illnesses

Exclusion criteria for active members

- Age <18 years – recommend alternative support for children and adolescents
- Pregnant or breastfeeding – recommend alternative support structures for mothers
- Advanced HIV Disease
- VL >1000copies/ml
- Active Tuberculosis disease in intensive phase treatment

Fig 2.4: Guidance for different types of CAG members



Selection and training of the group leader

Each group must select a group leader who receives additional education on how to conduct the community ART refill meeting and complete the community group refill form. The group leader must have basic reading/ writing and treatment literacy skills but does not have to be an expert client. Training of the group leaders is the responsibility of the facility staff – nurse or community ART group focal point, e.g. village health worker coordinator or community clinic linkage coordinator. If there are several new groups, the group leaders may be brought together at the facility. It is often more effective to complete the education with the group leader together with their group members. This ensures that all group members understand the system, but the group leader holds responsibility for ensuring the refill form is completed correctly.

Topics to be covered:

- Recap on basic treatment literacy topics: HIV, use of ART and viral load monitoring.
  - TB & nutrition status screening
  - Adherence assessment
  - Indications for CAG members to be referred to the facility or excluded from CAGs.
- The schedule of the refill visit, as outlined in this SOP.
- How to complete the clinical questions on the community group refill form.

The role of the community health worker

CAGs should function independently. However, with the clients' permission, the community health worker (CHW) in their area should be made aware of any group in their catchment area. The CHW may then act as a point of contact should problems arise within the group and, if necessary, be a means of communicating between the group and the health facility. The CHW does not have to attend the group meeting and should not have a supervisory role.

Guidance for CAG member visits

Monthly Drug refill at facility

- Depending on refill schedule can be every month or less frequent (See next section for MMD in CAGs model)
- Collection of ART for group members by CAG representative who presents bukanas and community form which is used to update facility records
- Facility updates files and gives new appointments to groups
- Representative collects group ART refills on visit on due date for their clinical assessment
- Clinical assessment is done for representative and assessment of eligibility to remain in the CAG is done, i.e. if client is no longer virally suppressed suspend active membership from the CAG until client is virally suppressed

Please note clinical appointments can be made in addition to dates the representative is scheduled to rotate for ART refill pick-up.

In the community – CAG meetings

- Group discussion and support
- Drug distribution is done with each member receiving their supply. A CAG representative will distribute the ART to the other CAGs members at the CAG meeting on the same day or the following day.
- Sharing of information from clinic with the group
- Screening for TB, nutrition, adherence assessments

Below is a summary of visits and supply for a member of a 12-member CAG. In this case the client only goes to the facility once a year, i.e. every 12 months.

Table 2.6: Example of visits and supply for a member of a 12-member CAG

Month	1	2	3	4	5	6	7	8	9	10	11	12	13
CAG representative to facility *Collects one-month refill for members*	1												1
Clinical assessment and laboratory monitoring													
Receives ART in the community		1	1	1	1	1	1	1	1	1	1	1	

They receive their supply in the community in months 2 to 12, as another member collects supply on their behalf. A CAG member can opt to go back to facility-based ART care at any moment. Some CAG members will have to temporarily transition to facility-based care for frequent clinical follow-up. This will be the case for:

- Clients newly diagnosed with tuberculosis or any other serious active opportunistic infection or other co-morbidity.
- Clients with evidence of treatment failure: virologic, immunologic or clinical.
- In the meantime, they remain part of the CAG as social members, benefiting from peer support and information circulating in the group. Once patients again fit the CAG criteria, they can re-join their regular CAG as active members.

CAG size

Recommended size of CAGs is 12 members or less. Assessments of eligibility should be done at every visit including during community meetings where members reporting symptoms that suggest illness, adverse side-effects or weight loss are referred to the health facility for prioritized assessment by a clinician.

Workflow for CAGs

- As for all clients, files for CAG members appointed on the following day should be extracted.
- Pre-pack medications for CAG members to present the following day.
- On the day, CAG representative for refill should be given priority in the queue.
- The members presenting to facility have full screening, history and clinical assessment including scheduled lab tests. Notify member if there is indication to suspend CAG membership, and schedule next appointment.
- Check the community CAG cards for adherence.
- Ensure accurate documentation in ART cards, CAG card, and ART dispensing tally sheet
- Dispense refill medications to CAG representative
- Document appointment for CAG refill and presenting member clinical review.

Do not make drug substitutions or regimen switches without communicating with the relevant CAG member directly. Clients should be invited to come to the facility or contacted through the telephone, so they understand reasons for changes and are made aware of visit schedule, side effects, food restrictions, etc. prior to dispensing new medication.

How are the client records filled?

As this is an individual model, the refill documentation is carried out in the ART card, bukana, ART dispensing tally sheet and daily activity sheet. The ART card should be filed according to the standard cohort system.

Multi-month dispensing in CAGs

CAGs are designed to strengthen adherence, retention and viral suppression. These models give peer support among patients. CAGs have been successfully implemented in Lesotho and introducing MMD into them can have the same intended outcomes as facility-based interventions, whilst additionally decongesting facilities and decentralizing care.

Potential benefits for this approach include

- Higher adherence to ART and retention in care
- Reduced per-patient cost of providing ART, by reducing the number of clinic visits required
- Decongestion of clinics to allow for increased capacity to manage persons newly diagnosed with HIV, those with infectious complications, treatment failure, and other co-morbidities
- Decreased waiting time and improved efficiency at clinics allowing for improved quality of care and patient satisfaction

While clients in a CAG may end up needing to do fewer drug pickups because of MMD, this does not mean clinical visit schedules should be adjusted, i.e. if client has a clinical visit in six months' time, they should still come even if it does not coincide with their turn to do drug pick-up.

Table 2.5: Facility visits for 6-member CAG receiving 6 months' supply

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
CAG representative to facility. *Collects three months of refills for group*	3																		3
Clinical assessment and lab monitoring																			
Receives supply in the community				3			3			3			3			3			

In this case, the client

- Requires annual clinical visits
- Receives 3 months' supply for himself and for the other 5 CAG members in month 1. His annual clinical review is done at this time.
- Gets 3 months' supply in the community in moths 3, 7, 10, 13 & 16
- Has to visit the facility in month 13 for his annual review but does not get supply as another member will have collected supply.

In order to better align visits, HCW can consider reassigning drug pickups so visits are aligned to clinic visits e.g. providing 6 months' supply.

Table 2.6: MMD in 3-member CAG receiving 6 months' supply

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
CAG representative at facility																			6
Clinical assessment and laboratory monitoring																			
Receive supply in the community							6						6						

In this case, the client

- Requires six-monthly clinical visits
- Receives 6 months' supply for herself and for the other 2 CAG members in month 1. Clinical review is done at this time.
- Gets 6 months' supply in the community in months 7 and 13.
- Has to the visit the facility in months 1, 7, 13, 19 for her 6 monthly review but only collects medications in months 1 and 19 as another member will have collected in months 7 and 13.
- In such cases clients will still benefit from psychological support but not necessarily reduced frequency of visits, therefore discuss the option of MMD outside of the CAG.

SECTION 2.6: DIFFERENTIATING SERVICES FOR SUB-POPULATIONS

Some sub-populations deserve special mention in relation to differentiating HIV services. Services are tailored to the targeted group such as youth, males, migrant workers and other key populations.

Adolescent Friendly Services

Adolescents often find primary care services unacceptable because of real and perceived lack of respect, privacy and confidentiality; fear of stigma and discrimination; and imposition of the cultural and moral values of healthcare providers. WHO and UNAIDS have devised Global Standards for Quality Healthcare Services for Adolescents to assist countries in improving the quality of healthcare services so that adolescents may easily obtain the services that they need to promote, protect and improve their health and well-being.

Practical steps to ensure ART services are adolescent and youth friendly

- All staff, from security to clinicians, are welcoming and respect privacy of young people
- Separate waiting areas for young people with a system to reduce waiting times
- Allocate specific times for adolescent consultation
- Flexible work hours that accommodate school attendance
- Integrated services (one-stop shop) to encourage and provide comprehensive care
- Use of MMD for eligible clients
- Establish links with key services (social work, psychology, family planning, support groups) with clear pathways of referral and feedback. Updated lists of local non-governmental and community-based organisations and support services are useful.
- Provide psychosocial services as an integral component of health services.
- Educators and counsellors encourage and support peer programmes
- Provide educational material that targets young people
- Introduce community scorecards and facility feedback tools to reveal insights about the quality of health services from adolescents and young people themselves.

Table 2.7: Challenges and Solutions for Differentiated ART Delivery for Adolescents and Young People

Challenges	Potential Solutions through Differentiated ART Delivery
• Period of rapid cognitive, social, emotional and sexual development	• Opportunity for peer mentoring in group models
• Attending school	• Visits outside school time to support both school and clinic attendance
• Increased prevalence of mental health challenges in transitioning to early adulthood	• Transitioning adolescents to adult care as part of ART delivery and psychosocial support group
• New and changing SRH needs	• Additional services related to mental health and SRH needs can be incorporated

Pregnant and Breastfeeding Women

Elimination of mother-to-child transmission of HIV (eMTCT) services are available during standard clinic hours and also available 24 hours a day in maternity units to provide services during labour and delivery. eMTCT services may also be provided in the community through community outreach, mobile clinics, factory workplace health facilities, tertiary institution facilities, and prison service clinics.

ART delivery is integrated into existing MNCH services antenatally, at delivery and postnatally. Women receive their SRH and ART services on the same day, in the same room, from the same health care provider. Postnatally, mothers, infants and, where appropriate, their fathers should receive their care together on the same day in the MNCH department until the child reaches two years of age. Children who are confirmed HIV negative are discharged. Mothers and children living with HIV are transferred to ART clinics.

Where antenatal services are provided through mobile outreach, ART refills for mothers living with HIV should also be provided. If community ART services do not have capacity for eMTCT services, pregnant and breastfeeding women may access ART services in a separate centre. Clients should be directed to differentiated care options to limit number of visits and provide more cohesive care. If a client opts for private ANC/PNC care or cannot access ANC care in factory ART clinics, for example, the two health facilities must ensure meticulous documentation to facilitate good communication and streamlining of care, including alignment of appointments.

Refill options for pregnant and breastfeeding women

Women living with HIV require additional antenatal and postnatal services, including follow-up of the exposed infant. The client may therefore be required to be seen more frequently for these additional medical services. Antenatal and postnatal clients established on ART are offered the option of MMD and fast track refill on condition that

- They observe ANC and PNC visits and dispensing multi-months' supply does not interfere with their attendance for scheduled ANC/PNC visits
- They have a documented viral load of <1000 copies/ml done in past three months

For women attending a CAG who become pregnant, they should be offered the choice of continuing as social members. Clients need to attend the additional antenatal and postnatal clinical and counselling services for optimal health outcomes for themselves and their infants. Pregnant and breastfeeding women can continue with other differentiated service delivery models if these service points are adequately equipped to offer ANC/PNC services.

Men

Adult males are less likely to be reached by provider-initiated and community-based HIV testing approaches widely use in Lesotho. Health facilities customarily operate during business hours, and service providers are mostly females. Most middle-aged men rarely visit clinics and are not usually home at the time of community-based testing campaigns. Culturally, some Basotho men are not comfortable being in the same waiting room with women and children. Even when sick, men often present late to clinical care. Men are less likely to utilize traditional facility-based health services.
Interventions to improve access to care for men include:

- Extended-service hours that men can access
  - o These extended service hours should also be available to other clients as well
- Adopting refill policies to reduce time spent at the clinic (fast track refills and MMD)
- Offering comprehensive "male" services (BP, diabetes, prostate screening, advice on smoking and alcohol use) alongside provision of HIV prevention, care and treatment services

Male-friendly Clinics

Comprehensive men's clinics exist at selected high-volume health facilities to increase access to health services for men. Men's clinics provide a male-friendly environment that encourages men to easily access HIV services in an environment where they feel comfortable. This is an effort to improve service uptake among men and to address the barriers accessing health services.
Men's clinics offer

- HIV testing, prevention, care and treatment services
- OI treatment and prevention
- Chronic illness care (hypertension, diabetes, chronic lung disease)
- Cancer screening
- Partner testing and linkage to prevention, care and treatment
- VMMC or referral
- Retention strategies tailored to men
  - MMD
  - Fast track refill
  - CAGs
  - SMS reminders and defaulter identification apps
  - Tracking services
  - Psychosocial support services – linkage to substance abuse support services, counselling, etc
  - Extended service hours – weekends and services beyond standard working hours
  - Appointment system to minimise waiting times

Where feasible and based on target population preference, facilities may consider placement of male staff (nurses, counsellors, peer educators) at the clinics.

Where resources do not allow for designated space to be set aside, facilities should consider

- Designated days or time /space within the facility to provide male friendly services
- Integrating services into current clinics that are provided in a male friendly fashion
- Staff training on provision of male-friendly services

Key Populations

Differentiated service delivery (DSD) enhances the quality of the client experience, putting the client at the centre of service delivery, while ensuring that the health system is functioning in both a medically accountable and efficient manner.
Key populations are defined as groups who, because of specific higher-risk behaviour, are at increased risk of HIV, irrespective of the type of epidemic or local context. Members of key populations frequently face legal and social challenges that increase their vulnerability to HIV, including barriers to accessing HIV prevention, testing and treatment services. Key populations include:

- Sex workers
- Men who have sex with men
- Transgender people
- People in prisons and closed settings
- People who inject drugs

Differentiated ART delivery for key populations should not be limited to clients who are established on ART. DSD can be a way of increasing access to HIV services for key populations by offering choices for service delivery based on clinical needs and individual preferences. A DSD approach is applied

across the care continuum – with differentiated approaches to prevention, testing, linkage, ART initiation and chronic care.

Why do we need to differentiate services for key populations?

- Improve access to prevention, care and treatment
- Improve quality of care
- Sensitize healthcare workers on specific needs
- Support progress towards 95-95-95 goals

Table 2.8: Differentiated service delivery models for key populations

Model Type	Features
Task Shifting	• Peer monitoring of ART adherence and counselling • Partnership with NGOs/CBOs to deliver services • National government accreditation for one-stop-shop key population clinics to deliver ART and care, including STI management • HIV self-testing with or without peer assistance
Case management/peer navigation	• Case workers/outreach workers engage with clients and accompany them through every step of the continuum of care • Peer navigators facilitate ART initiation and support through the cascade and provide information, counselling, adherence support • Peers accompany to testing and link to treatment and care services • Incentivized referrals • Escorted referrals
Comprehensive/ integrated services	• Comprehensive services at one location, including ART • Opioid substitution therapy (OST) programmes providing daily ART and TB meds alongside methadone
Community-based services	• Mobile outreach • Community-based HTS • Drop-in centres • Prioritized area/hotspot outreach • "One-stop shops" • Linkage and referral to clinical services • Peer educators • Community safe spaces
Community-led services	• Community support and empowerment groups for key populations • Community committees to monitor service delivery, and feedback loops to ensure appropriate, accessible and high-quality treatment • ART adherence support groups at community-based organizations (CBOs) • ART distribution through CBOs and CAGs
Using online platforms	• Online platforms to engage and mobilize, promote uptake of services and support adherence to treatment • Online channels of communication and/or confidential ways to contact programme staff, share information in discreet and confidential way • Web-based HIV self-testing platforms
Enhanced facility-based ART	• Clinicians sensitized to key population service and psychosocial needs and preferences • Community accountability committees routinely engage to improve quality of clinical services • Fast track key population patients in clinical settings • "Hosting" public sector ART providers at key population clinics
Flexible client-centred services	• ART collection when individual has travelled to distant location for work • Flexible clinic opening hours (weekends, evenings) • Moonlight Outreach Models to bring health services to the spaces in which sex workers typically work or live and at times of the day that can have the greatest impact, such as sex work "hotspots" • No appointment needed and drop-in services available • "Emergency" drug pickups available when running out of ART • Differentiated schedules: adapting or dedicating hours, or clinic days, for specific client groups • Services at sites located near places of work (sex work and drug use sites)

Migrant Populations

The LePHIA (2017) report demonstrates that migration plays an important role in Lesotho's social organization, with almost 40% of men and 18% of women aged 15-59 years old reportedly living outside the country during their lifetime . HIV prevalence was found to be significantly higher among those reporting ever living outside Lesotho (39% in women and 27.5% in men) compared to those who had never lived outside Lesotho (28.5% of women and 17.8% of men).

Client-friendly services are based on principles of open-mindedness to diversity of individuals in society. The friendly provider shows interest in meeting the needs of clients from all backgrounds, and tailors care to the specific context of the client.
Integrated Migrant-friendly Services
Facilities will incorporate migrant-friendly services. This is in addition to providing services across the HIV continuum i.e. testing, prevention, care and treatment

Newly identified migrant living with HIV

- Discussion on migrant intentions and plans for follow-up
- Exchange of contact details between client and clinician, to allow for telephonic follow-up
- Client needs focused dispensing of ART and TPT (e.g. Initial two-week follow up if patient agrees to delay travel, followed by six-month MMD)
- If client unable to come back two weeks after ART initiation, give up to three months MMD initially, then six-month MMD thereafter with guidance to consult at the earliest opportunity at nearest facility
- Plans for telephonic follow-up by clinician for two-week check-up including discussion of baseline lab results
- Adequate documentation in patient file, bukana and ART register
- Enhanced adherence counselling/treatment literacy including messages around viral load monitoring, impact of viral load suppression (U=U) and possible side-effects.
- Ensure appropriate referral documentation is availed to support access of services in RSA.
- Specific additional services:
  - TB screening and treatment
  - Index testing and partner notification services
  - STI screening and treatment
  - Cervical cancer screening and linkage to treatment

Migrants already on ART

- Adherence counselling including commitment to continue ART and return six-monthly for drug pick-ups
- Commitment to viral load monitoring which will be scheduled as far as possible at a time

Lesotho Population–based HIV Impact Assessment report (2017)
convenient (December holidays, Easter holidays, etc.)

- Discussion on migration intentions and plans for local follow up
- Exchange of contact details between client and clinician, to allow for telephonic follow up
- Client needs focused dispensing of ART (Up to six months MMD)
- Plans for telephonic follow up by clinician including discussion on VL results
- Adequate documentation in patient file, bukana and ART register
- Enhanced adherence counselling and treatment
- Explore possibility of referring to health centres in RSA

SECTION 2.7: RETENTION ACROSS THE CONTINUUM OF CARE

The HIV care cascade includes: HIV testing, linkage to and retention in care, initiation of ART and retention on ART with good adherence, and viral suppression. Losses along the care cascade must be minimized in order to realize the full benefits of HIV care and treatment in improving the health outcomes of PLHIV and reducing HIV transmission.

- **Retention** – is defined as keeping ("retaining") clients in care and treatment; the continuation of lifelong HIV care and treatment services
- **Missed appointment** – Clients who do not attend scheduled clinic visits between 1-7 days
- **Defaulter** – Clients who do not attend scheduled clinic visit between 8-28 days
- **Lost to follow up** – Clients who do not attend scheduled clinic visits beyond 28 days

Operational definitions for appointment keeping:

- Client comes to clinic with patient booklet documenting his/her appointment date.
- Use the facility Appointment Register to confirm that client is expected on this day.
- If client comes **on the day he/she was expected:**
  - Congratulate client for coming
  - Find date in Appointment Register and mark/document that they came on time
- If client comes **earlier than expected:**
  - Congratulate client for coming
  - Determine why client came earlier than expected
  - Find date in appointment register on which he/she was expected and indicate that the client came early
- If client comes **later than expected:**
  - Congratulate client for coming
  - Find date in Appointment Register on which he/she was expected and mark that the client came late
  - Determine why client came later than expected (identify barriers and explore solutions with the client to minimize recurrence)
- Update client's and treatment supporter's contact information at every clinic visit in the client's HIV Chronic Care File.

A variety of interventions at different levels of care are required to optimize patient retention. It is important to identify specific barriers to retention and address them. Several factors that can impact patients' retention in care by affecting their ability to access services include the direct costs of accessing services, stock-outs of ARVs, lack of effective referral systems, lack of monitoring system, co-morbidities, forgetfulness, staff attitude, documentation and migration.

Table 2.9: Factors Affecting Retention and Possible Interventions

Factors affecting retention	Possible Interventions
High costs of receiving care	• Decentralize ART services, including scaling up health posts • Provide family-centred services • Provide MMD to PLHIV established on ART • Expand CAGs • Community and facility differentiated ART refills
Weak systems for monitoring patient retention	• Implement patient tracking systems including cohort monitoring and electronic patient monitoring systems • Reinforce the appointment system for patients • Scale up provision of moonlight services • Regularly review MTCT data
Weak patient referral system	• Strengthen patient referral system, such as referral tools and electronic system for documentation of patient linkage • Use of electronic systems • Use of unique patient identifiers to track patients across different points of care
Adherence support	• Combat stigma and discrimination • Strengthen community health workers and other support groups to provide adherence support • Provide peer support, partner support, family support • Encourage disclosure
Forgetfulness	• Link to support groups and CAGs • Identify a treatment supporter • Use technology, such as mobile phone text message reminders • Provide pill boxes and medication calendars • Patient tracking and linkages, facility and community linkages
Migration	• Provide MMD • Strengthen facility-to-facility linkages
Documentation and filing systems	• Triangulate data • Mentor and supervise on documentation and filing • Document clear physical addresses • Review and update contact details
Health service issues – crowded clinics, distances to clinics, stock outs	• Expand community HIV service delivery • Conduct outreaches for HIV services • Task shift ART refills to trained community health workers

Tracing and Re-engagement in Care

Patient tracking is the combination of a number of interventions embarked on by a team of healthcare providers to reach out to clients who missed appointments from care. The aim is to encourage them to return to care for their own health and for the benefit of the larger population. It is a multi-faceted approach that involves both the healthcare facility and community structures. Patient tracking is essential to ensure continuity of treatment for clients who have missed their clinical and refill appointments.

Establishing a focal person to oversee patient tracking

- Each health facility providing HIV services should have a focal person and back-up-focal person dedicated to overseeing and ensuring timely and effective follow-up of clients who have missed their appointments.
- **Note that the focal person's role is NOT to be the only person who traces clients. Instead, the focal person's job is to coordinate, ensuring that there is a clear system in place and that it is being implemented.**

- Clients' return dates for appointments should be clearly documented in the Appointment Book and utilised electronic devices to ensure telephonic reminders can be send three days before their due appointment date. There has to be prompt identification of missed appointments for prompt tracking of such clients back to care.

Follow up of clients who have missed their appointments should be done within one day of missing with the following attempts:

- Follow up clients using existing follow-up systems, e.g., home visits, sending an SMS, or making a phone call
- Contact a treatment supporter or a VHW If the client is not reached directly.
- Document all the actions taken in following up clients who missed their clinic appointments in the appropriate tools
- Document the outcome of the follow up in all the relevant tools and systems

Linkage to Care

To meet differing needs of clients, HIV care and treatment services must include referrals to other services internally at the site or externally to another site. Referrals of clients to appropriate departments must be documented whether they are short term, long term, or permanent transfer-outs. To promote continuity, follow up of clients on ART is key in facilitating bi-directional linkages from community to facility, facility to facility, and facility to community.

- Referrals and follow-up should be documented in the client record/chart and appropriate referral tools
- Referrals should be reported in the data collection system as required, indicating the current in care and ART at sites, and transfer-outs
- All efforts should be made to ensure that clients have reached their new facilities and records are updated accordingly for successful referral.

Referral or transfer to other facilities

- Healthcare worker and the client should jointly decide on facility to be referred to, preferably a nearby facility
- Complete triplicate referral form: one copy to be given to patient, 2nd left at the facility, and 3rd sent to the receiving facility through sample transport or via healthcare workers
- All details of the client, including mobile phone number, to be provided on referral form
- Discuss with client an appointment date at the receiving facility, document it in referral form, and counsel on honouring this appointment
- Facility should file all referral forms together for ease of follow-up
- The referring facility staff should record the findings of follow-up on the particular client record at the site namely the facility to facility register, ART card, the ART register and the appointment book.
- Healthcare worker should check with facilities that clients have been transferred to in order to confirm they have arrived.
- Tracing and tracking of the transferred-out clients should be conducted for those who have not reached their new facilities.

Receiving Facility

- Organize received referral forms according to the dates the clients are expected to come
- Document client details in facility's appointment book on the date she/he is expected to report at the facility
- Remind referred patients by sending SMS reminders two days before appointment date
- Follow enrolment procedure to enrol referred patients
- Weekly follow-up through phone system those referred who do not come to enrol into care

SECTION 2.8: SERVICE INTEGRATION AND LINKAGES

Chronic care requires integrating and linking related services to ensure comprehensive and consistent care provision over time, including providing related services in the same settings, systems to share information, and effective referrals across settings and providers. Integrated services are likely to reduce missed opportunities for initiating ART, to enhance adherence support and to optimize retention in care.

Integrating HIV and sexual and reproductive health services has been found to improve accessibility, the quality of antenatal care, and nurse productivity while reducing stigma and without compromising uptake of care.

Integrating sexual and reproductive health services and HIV services

Since women living with HIV face unique challenges and human rights violations related to their sexuality and reproduction within their families and communities and from the healthcare institutions in which they seek care, particular emphasis is placed on creating an enabling environment to support more effective health interventions and better health outcomes.

Implementing comprehensive and integrated sexual and reproductive health and rights and HIV programmes to meet the health needs and rights of the diverse group of women living with HIV requires that interventions be put into place to overcome barriers to service uptake, use and continued engagement. In all epidemic contexts, these barriers arise at the individual, interpersonal, community and societal levels.

The programs of HIV, TB, SRH, and maternal and child health need to collaborate so as to minimize missed opportunities while at the same time provide more comprehensive health care to patients. Potential areas of collaboration include training, supervision and mentorship, supply chain management, resource mobilization, and monitoring and evaluation.

Delivering ART in ANC and RMNCH Settings

It is imperative that all pregnant women living with HIV be provided extensive health education, stressing the benefits of ART for their own health and for the prevention of mother-to-child transmission of HIV infection. Since most women access maternity services during pregnancy, this serves as an opportunity to also provide HIV testing services to all pregnant women and offer life-long ART for those found to be living with HIV. Same day ART initiation is highly recommended. Mothers should also be counselled about the importance of infant ARV prophylaxis and exposed infant care. Nurses and midwives should be trained, mentored, and supervised to provide ART initiation and follow up care to the mother-baby pair within the RMNCH settings. At the time of transfer, clients should be physically escorted between RMNCH and ART clinic with their clinical documents. Partners of pregnant and breastfeeding women living with HIV should also be offered HIV services within RMNCH settings.

Delivering ART Outside Health Facilities

Clients starting ART outside a health facility should be linked to a facility and enrolled in a long-term model of care. Initiating ART outside a health facility needs to be accompanied by appropriate measures to ensure that risk assessment and counselling support are provided, including at the time of initiation and in the period thereafter. For those diagnosed in the community who are not ready to start ART, referral to care should be provided.

Reducing the frequency of drug dispensing requires adequate drug supply and the appropriate storage for clients, including for community ART delivery. Consideration should be given to harmonize and optimize scheduling while ensuring client choice and linkage to other key services, including viral load monitoring and other laboratory investigations, and dispensation of medications for TB preventive therapy and chronic conditions.

Integrating Diabetes and Hypertension Care with HIV Care

Since an increasing proportion of people living with HIV are receiving their HIV treatment through a differentiated service delivery model with extended ART refills and less frequent clinical visits, aligning the provision of non-communicable disease commodities with differentiated service delivery for HIV treatment models is an important component of client-centred care.

Delivering ART in TB Settings and TB Treatment in HIV Settings

Collaboration between TB/HIV services is crucial to address the impact from the two diseases. This should span all the key levels from the national program through the district health system and facilities to the communities.

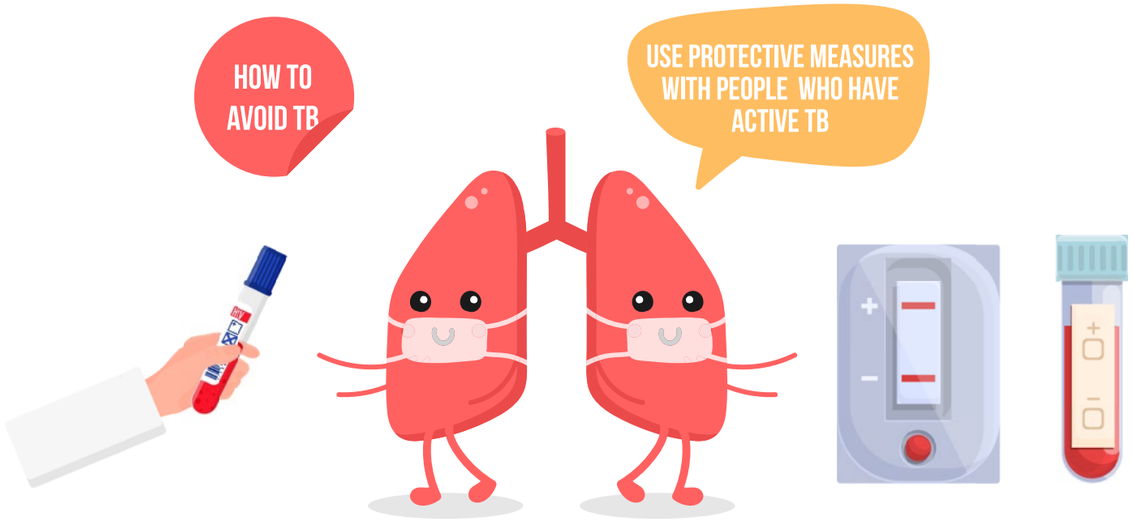
- Establishing mechanisms for collaboration between HIV and TB services
- Reducing the burden of TB in PLHIV and
- Reducing the burden of HIV in TB patients

For efficient coordination of TB/HIV activities the following areas are being addressed:

- Coordinating body at central level (HIV/TB Technical Advisory Committee), at district level (HIV/TB Coordination Meetings), at facility level (Multidisciplinary Teams) to manage HIV/TB services.
- Surveillance of HIV prevalence among TB patients. All presumptive and confirmed TB patients are offered HIV testing services upon diagnosis.
- Family-centred approach in TB screening, contract tracing, and provision of TB treatment for all patients, including children, at all health facilities
- Joint TB/HIV planning; joint resource mobilization (both financial and human); capacity development (including training); and HIV/TB advocacy, communication and social mobilization
- Joint operational research activities to inform national policy and strategy development so as to improve service delivery.
- Joint monitoring and evaluation of collaborative HIV/TB activities. This ensures timely assessment of quality, effectiveness, coverage and delivery of collaborative HIV/TB activities.
- Joint enhancement of community involvement in collaborative HIV/TB activities through support groups for PLHIV, TB supporters, and community-based organizations. Communities can also be mobilized to help implement collaborative HIV/TB activities.

Table 2.10: TB and HIV Interventions across the Health System

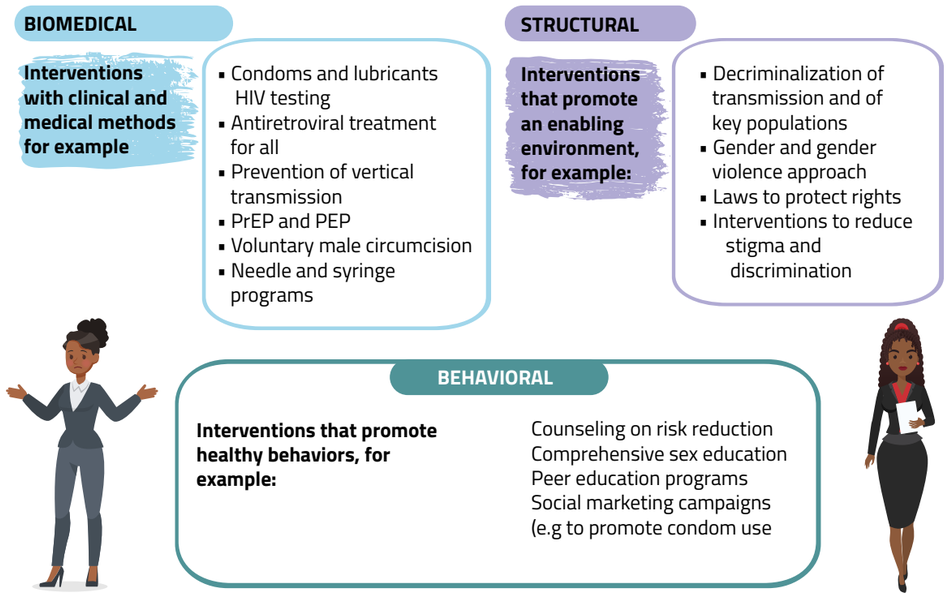
LEVEL OF HEALTH CARE	HIV/TB INTERVENTIONS
HOME AND COMMUNITY: Community based organizations (private, non - governmental, faith-based), CHWs, VHWs, CAGs, Mentor Mothers	• TB, HIV, and STI education and health promotion • Condom distribution • Nutritional advice and support • Psychological support • Community HTS • Intensified community screening and DOT for T B • Community-based palliative and terminal care • Community ART distribution
PRIMARY CARE: Public health centres, non-governmental health centres, private health centres	• HTS and HIV prevention • TB case finding and treatment • Intensified case finding • TPT and co-trimoxazole provision • Condom promotion and provision • STI syndromic management • Management of HIV related opportunistic infection and palliative care • ART • Infant prophylaxis and early infant diagnosis
SECONDARY CARE Public hospitals, private hospitals	• Diagnosis and treatment of HIV-related diseases • Inpatient palliative care • Diagnosis and management of complications or severe presentations of HIV/TB disease • Referral back to primary facility after stabilization of complicated cases



CHAPTER 3: PREVENTION

INTRODUCTION

Preventing new HIV infections is critical to controlling the HIV epidemic in Lesotho. Comprehensive combination prevention includes biomedical, behavioural, and structural interventions designed to meet the HIV prevention needs of specific people and communities. Individuals should be offered a tailored combination of HIV prevention services to maximize benefits and protection.
Figure 2.1 Combination HIV Prevention



This chapter primarily focuses on Pre-Exposure Prophylaxis (PrEP) and Post-Exposure Prophylaxis (PEP). It also provides brief guidance on treatment as prevention, eMTCT, VMMC and general HIV prevention methods. **Event Driven PrEP and the Dapivirine ring are included for the first time in these guidelines, after WHO recommended their adoption in 2019 and 2021, respectively.** For oral PrEP, there is updated guidance for creatinine monitoring as well as safely starting and stopping the intervention.

SECTION 3.1: ORAL PRE-EXPOSURE PROPHYLAXIS

Pre-exposure prophylaxis (PrEP) is the use of antiretroviral drugs by HIV-negative people to reduce their risk of acquiring HIV infection. Studies have demonstrated that oral PrEP containing TDF reduces the risk of HIV infection by more than 90% when used consistently in the setting of other HIV prevention services, including condom provision and education, STI management, VMMC referral and risk reduction counselling.

Oral PrEP is recommended for HIV-negative individuals at 'substantial risk' of becoming infected with HIV. 'Substantial risk' is defined as a ≥3% risk of being infected with HIV in one year. PrEP is effective

Pan American Health Organization (nd). https://www.paho.org/en/topics/combination-hiv-prevention

in all individuals at risk of HIV infection, including men and women in sero-discordant couples, pregnant and breastfeeding women, sex workers, men who have sex with men, transgender women, people who inject drugs, incarcerated persons, and individuals from the general population with unmet HIV prevention needs. An individualized risk assessment should be performed for HIV-negative individuals in order to determine if PrEP is an appropriate HIV prevention option.

PrEP Eligibility

PrEP should be offered to clients that meet the following eligibility criteria:

1. HIV seronegative – based on HIV test done on day of initiation on PrEP
2. Sexually active and at substantial risk of acquiring HIV infection. Individuals at substantial risk are those who:
    - Have a sexual partner with HIV who:
        - Is not ART
        - Has been on ART for less than 6 months
        - Has been on ART for more than 6 months but is not virally suppressed
        - Is virally suppressed but the couple want to conceive
    - Have a sexual partner with unknown HIV status
    - Have had vaginal or anal sexual intercourse without condoms with more than one partner in the past six months
    - Have a sexual partner with one or more HIV risk factors in the past six months (these may include: having unprotected anal or vaginal sex; having a sexually transmitted infection such as syphilis, herpes, chlamydia, gonorrhoea, or bacterial vaginosis; Injection drug user sharing needles and other injecting equipment)
    - Have a history of a sexually transmitted infection (STI) by lab testing or self-report or STI syndromic management in the past six months
    - Have had sex in exchange for money, goods or a service in the last six months
    - Inject drugs using shared equipment
    - Request PrEP- Clinicians should consider any request for PrEP as indication of risk. PrEP must be provided after confirming client understanding.
3. No suspicion of acute HIV infection
4. Minimal risk of renal impairment
5. Weight of 35kg or above
6. Willingness to use PrEP as prescribed

Assessing for HIV Risk

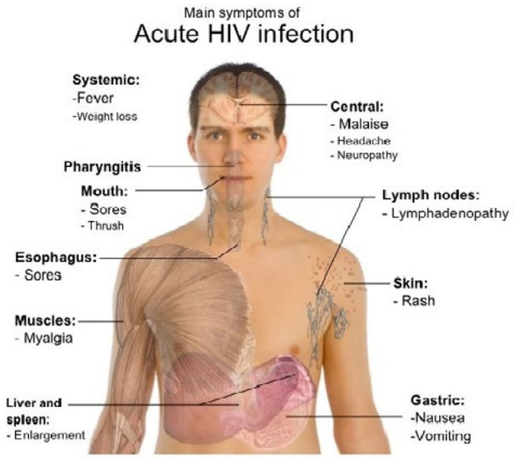
Providers should make every effort to establish rapport with potential PrEP clients, provide adequate privacy and assure confidentiality before using risk screening tools. A non-judgmental attitude will encourage clients to share accurate information regarding risky behaviour.

Assessing for Acute HIV Infection

It is important to remember the limitation of serological tests during the window period (time from HIV infection to detection of antibodies). Assess clients on PrEP for acute HIV infection at the initial visit and at every follow-up visit. Health care providers should maintain a high level of suspicion for acute HIV infection in patients who have a suggestive clinical syndrome—especially in those who report recent high-risk exposure. Symptoms and signs of acute HIV infection are similar to other minor illnesses. Clients may not see the need to disclose minor symptoms making it important for clinicians to enquire proactively.

Some of the symptoms and signs to assess for in clients with suspected acute HIV infection are highlighted in Figure 3.1 below:

Figure 3.1: Acute HIV signs and symptoms



Clients with the above signs, coupled with recent HIV exposure, are possible cases of acute HIV infection. In such instances:

- Defer PrEP until HIV definitively ruled out by repeating the HIV rapid test after 4 weeks. This allows time for detection of possible seroconversion. Meanwhile, the client should be encouraged to use other methods of HIV prevention, such as condoms, while awaiting repeat HIV testing.
  - Start PrEP if follow-up HIV testing is negative.
- If DNA PCR testing and results can be obtained before 4 weeks, then DNA PCR should be performed.
  - Start PrEP if DNA PCR testing is negative.

Baseline Screening and tests for clients initiating PrEP:

Laboratory tests should be available either at the point of care or from a laboratory. All clients should have a definitively negative HIV result on the day of starting PrEP. In addition to a confirmed HIV negative status, the following tests ought to be performed at baseline after confirming a client is eligible for PrEP initiation.

Table 3.1 Baseline Laboratory Tests for Clients Initiating PrEP

INVESTIGATION	RATIONALE
Serum creatinine	To be conducted at baseline on all individuals 30 years and older and younger people with hypertension and/or diabetes mellitus to identify renal disease
Hepatitis B surface antigen (HBsAg)	To identify undiagnosed HBV infection for clinical management To identify those eligible for vaccination against Hepatitis B (This is not a contraindication for PrEP)
STI diagnostic tests	To diagnose and provide treatment for clients with STIs (This is not a contraindication for PrEP)
Pregnancy	To ascertain pregnancy status and link to FP/MCH services if necessary
Hepatitis C screen	To detect previous or current HCV infection and manage accordingly (This is not a contraindication for PrEP)

Unavailability of results for the following should not delay initiation on PrEP

- Creatinine clearance
- Hepatitis B/C screen, Pregnancy test, RPR/VDRL

PrEP can be offered regardless of the result for the following tests

- Hepatitis B/C screen, Pregnancy test, RPR

Creatinine and estimated creatinine clearance

Serum creatinine should be measured before beginning oral PrEP for all users 30 years or older. People younger than 30 years with a history of hypertension, diabetes and kidney disease should also have a creatinine test within three months of starting TDF based PrEP. Creatinine testing should be repeated every 6 months for people with known hypertension, diabetes, kidney disease and those older than 50 years who are continuing on PrEP. People using nephrotoxic drugs such as aminoglycosides, non-steroidal anti-inflammatory drugs, acyclovir, etc, may also require creatinine monitoring. Clients aged 29 years and below without kidney related comorbidities do not require creatinine testing.

Table 3.2: Creatinine Screening for PrEP

Population		Baseline Creatinine	Follow-up creatinine
Kidney Related Morbidities	**Age**		
No	<30	N/A	N/A
No	30-49	Test within 3 months of starting PrEP	Not indicated if baseline CrCl ≥ 90 ml/min
			Repeat every 6 months if CrCl ≤ 90 ml/min
Yes	Any age	Test within 3 months of starting PrEP	Repeat every 6 months

The laboratory should ideally calculate estimated creatinine clearance and report this with the creatinine result. If the laboratory does not have the capacity to estimate creatinine clearance, the provider can use the Cockcroft–Gault equation to calculate estimated creatinine clearance based on measured serum creatinine, the client's sex at birth, age and estimated lean body weight.

Calculation of Creatinine clearance in ml/min using Cockcroft Gault Equation

Male: $\frac{1.23 \times (140-\text{age}) \times \text{wt in kg}}{\text{Creatinine in } \mu\text{mols/L}}$

Female: $\frac{1.04 \times (140-\text{age}) \times \text{wt in kg}}{\text{Creatinine in } \mu\text{mols/L}}$

The Cockcroft–Gault equation gives appropriate estimates of creatinine clearance in people over the age of 12 years. For transgender populations not using hormone therapy, the sex at birth is used in the Cockcroft-Gault equation. For those on hormone therapy for more than 3 months, the current gender should be used. If Cockcroft-Gault calculations are not feasible, the clinician may consider excluding people with serum creatinine levels that are higher than the upper limit of normal as established in the laboratory that is reporting the result.

Creatinine measurements vary from day to day, depending on hydration, exercise, diet, creatine use (used by body builders), and other factors. Therefore, if a single creatinine measurement is above the normal range, the measurement should be repeated before excluding that person from PrEP services.

Pregnancy can change how medications affect the body, and how the body processes some drugs. Because of normal, physiologic changes in pregnancy, including increased blood volume and kidney function, values of serum creatinine are typically lower in pregnant women compared to non-pregnant women. The Cockcroft-Gault equation does not incorporate normal pregnancy changes in calculating creatinine clearance. It may not provide an optimal estimate of kidney function for pregnant clients taking PrEP. As a gold standard, if the serum creatinine is greater than 79.6 µmol/l (0.9 mg/dl) in pregnancy at baseline (before onset of PrEP use), the health provider should evaluate the client for possible acute kidney injury or undiagnosed prior chronic kidney disease. Consultation with a specialist, if available, should be sought. **Pregnant clients who had normal serum creatinine levels before PrEP use, but then developed elevated levels (outside the reference range) after starting PrEP, should prompt the provider to pause PrEP provision, due to the possibility of abnormal kidney function.** During this pause the client should be provided with another option for HIV prevention. It is prudent to avoid starting PrEP on clients with suspected or confirmed diagnosis of a condition that may impair the function of their liver or kidneys, such as pre-eclampsia. Where capacity allows, serum creatinine is recommended to monitor kidney function for PrEP users who are pregnant, with a repeat test performed every three months.

Other baseline laboratory tests

Undiagnosed pregnancy, Hepatitis B and syphilis are common among people practicing unprotected sex. An RPR, Hepatitis B screen and pregnancy test must be performed on all new PrEP clients in the first three months of starting PrEP. Positive HBsAg results should be repeated after 6 months to rule out transient infections. In addition, Hepatitis C screening must also be done for MSM at PrEP initiation. While these tests are important for the clinical management of clients, abnormal results do not determine PrEP eligibility.

Initiating Oral PrEP

Service providers can start clients on PrEP on the same day that people present for services as long as the client has tested HIV-negative and is adequately informed and motivated to start immediately. Specimens for other laboratory tests (including creatinine, hepatitis B surface antigen) can be collected within three months of starting PrEP as indicated above. Clients with known HIV exposure within the past 72 hours should be offered post-exposure prophylaxis (PEP) for 28 days and reassessed for PrEP initiation after completing the PEP course. PrEP can then be started immediately thereafter if the client remains HIV negative and continues to be at substantial risk of HIV infection.

Clients being started on PrEP must be counselled to ensure they understand the basics regarding PrEP use. Initial counselling for clients being started on PrEP must include:

- Increasing awareness of PrEP as a choice for HIV prevention.
- Helping the client to decide whether PrEP is right for them.
- Preparing individuals for starting PrEP.
- Explaining how PrEP works.
- Emphasizing that PrEP does not prevent other STIs.
- Providing basic recommendations - selecting a time to take PrEP every day, avoid alcohol and substance abuse if it will interfere with PrEP use.
- The importance of adherence, follow-up visits and tests.
- Potential PrEP side effects.
- Recognizing symptoms of acute HIV infection.

- Building a specific client-focused plan for PrEP.
- Discussing sexual health and harm reduction measures.
- Assess client's understanding that the protection provided by PrEP is not 100%.
- Stress on the need for good adherence to increase efficacy of PrEP.
- Additional information for women:
  - PrEP does not affect the efficacy of hormonal contraceptives.
  - PrEP does not protect against pregnancy.
  - PrEP is safe thus can be taken during pregnancy and breastfeeding.

Table 3.3: Initial Visit Assessment and Services for PrEP Clients

Visit	Action	Medication supply
First visit	• HIV testing and counselling • Evaluate for eligibility, willingness, readiness to take oral PrEP • Educate about the risks, benefits and limitations of PrEP • Educate client about recognizing symptoms of acute HIV infection and what to do if such symptoms occur (i.e. urgently return for HIV testing) • Behavioural risk assessment • Discuss combination prevention • STI screening and management • Contraceptive counselling and services • Pregnancy test and link to ANC or contraception as appropriate • Adherence counselling • Mental health and substance use screening • Laboratory Evaluation - Creatinine clearance (30 years and older, diabetes and hypertension), HBsAg, HCV, RPR/VDRL, pregnancy test (baseline investigations should not delay initiation of PrEP) • If no contraindication to TDF and the client is eligible and ready, prescribe • Give follow-up appointment date for review in 4 weeks' time	1-month supply

Special consideration: Partners of PLHIV with Drug Resistance

In sero-discordant couples, where the HIV infected partner has history of failing TDF regimen, there is possibility of transmission of the TDF resistant strain thus TDF-based PrEP for the uninfected partner may not be effective in such cases. Cases of drug resistant strains being transmitted in PrEP clients with proven PrEP adherence and adequate serum levels of TDF have been documented. Fortunately, TDF resistance is not common, and there is a decay of TDF resistant variance over time once TDF is withheld. Since there are limited PrEP options, the benefits of initiating TDF-based PrEP in these clients need to be thoroughly assessed and the risks explained to the client. A comprehensive history of the index client's genotypic test results, drug history and time since TDF discontinuation must be collected and evaluated in such cases. A senior HIV clinician should be consulted. If PrEP is not given following the evaluation, offer alternative preventive measures and ensure that the HIV positive client's treatment is optimized.

Clients who present for PrEP within 72 Hours of HIV exposure

People who have been exposed to HIV in the preceding 72 hours should be offered Post-Exposure Prophylaxis (PEP) instead of PrEP. Lesotho's recommended PEP regimen is TDF/3TC/DTG. PrEP can be started immediately after completion of 28 days of PEP and after confirmation of negative HIV status among clients who continue to be at risk. If possible, transition should be smooth without a time lag between the two interventions.

Follow-up of PrEP Users

The scheduling of follow-up visits for PrEP users should be aligned to the drug refill dates and the dates when laboratory tests for monitoring are to be done. Clinical and adherence assessments should be done at 1 month, 3 months after PrEP initiation and every three months thereafter. These shall constitute face-to-face interactions between the health worker and PrEP user that may happen either at the facility or at community level. Additional interactions with health workers can take place by telephone, for example to discuss laboratory results. More frequent clinical monitoring may be required for clients reporting severe adverse events or those with poor adherence to PrEP medications. Adolescents and young adults may benefit from more frequent appointments to address their changing routines and multiple needs.

Clients will benefit from screening for STIs at every visit. Additionally, assessments such as adherence monitoring, adverse drug reaction/ events monitoring as well as laboratory assessments for creatinine clearance and hepatitis B are recommended in the follow-up of clients taking PrEP. Ongoing risk reduction counselling should be provided alongside the repeat periodic clinical assessment to establish the need for continued PrEP use. Pre-exposure prophylaxis should be used during periods of substantial HIV infection risk for HIV and can be stopped during periods of low or no risk.

Table 3.4: Follow Up Visit Assessments

Visit	Action	Medication supply
1 month	• Review results • Address side effects • Risk assessment • Adherence assessment and counselling as required. • Assess for symptoms and signs of acute HIV infection • Repeat HIV test • Combination prevention package services • Continue PrEP only if client is still eligible	2 months
Every 3 months	• Repeat HIV Test • Assess for acute HIV infection • HIV risk assessment • Adherence assessment and support as required	3 months
Every 6 months	• Creatinine clearance for clients older than 50 years, known diabetics, known hypertensive clients and people with existing renal disease	

HIV testing for PrEP users

Prior to PrEP initiation a client must test HIV-negative on the day of initiation. Subsequent HIV testing should be done to rule out seroconversion while on PrEP. HIV testing after one month of PrEP use will help detect infections that happen just before staring PrEP as well as those that occur during early use before optimal circulating and tissue concentrations are achieved. Following the test at one month, repeat tests must be done for clients continuing to use PrEP, at three months from PrEP initiation, and then every three months thereafter. This is done to avoid dispensing PrEP to persons who may have acquired HIV and require ART instead. Additionally, exposure to ARVs by clients using PrEP may decrease sensitivity of serological tests. In the event of suspected acute HIV infection, stop PrEP and perform tests to definitively exclude HIV. Perform DNA PCR if turnaround time is less than two weeks, otherwise repeat rapid HIV test after four weeks.

HIV self-testing is an important demand creation tool that provides a way to reach individuals eligible for PrEP who may not otherwise test or access a health facility. However, a non-reactive self-test result is not sufficient to start PrEP thus blood-based rapid HIV testing remains a pre-requisite for PrEP initiation. Therefore, individual with a non-reactive self-test result should be linked to further testing that follows the National HIV testing algorithm before starting or restarting PrEP. Similarly, oral fluid-based tests are currently not recommended during PrEP use in Lesotho. They should not replace conventional testing for routine monitoring.

Adherence Monitoring

PrEP provides high levels of protection in people who take PrEP medicines regularly. However, time is needed to build up protective levels of the drug in the blood and other human body tissues. Additional HIV prevention should be taken during the first seven days of PrEP use. In clinical trials, the overall reduction in risk of acquiring HIV was more than 90% when PrEP was used consistently. Several large demonstration projects have observed no new HIV infections during PrEP use while others have reported seroconversions associated with the use of fewer than four tablets per week among men who have sex with men and transgender women or fewer than six tablets per week among women. Adherence to PrEP is the most important determinant of effectiveness and is enabled by providing users with accurate information and adherence support. Adherence is higher among people who perceive themselves to be at risk and understand the benefits of PrEP at a personal level. Social factors are also important in determining uptake and continuation on PrEP .

Monitoring for adherence is crucial for client management particularly with regards to the need for additional counselling, the decision to stop PrEP and performing unscheduled HIV tests. Physical pill counts and recall of doses taken over the days preceding refill are methods that are used to estimate adherence. Interpretation of adherence using these two methods are illustrated below.

*Ask client how many pills they swallowed in the past 7 days

Pills taken	# of pills taken in last 7 days	Interpretation
Most	6-7	Good
Some	4-5	Suboptimal
Few	0-3	Poor

Count all remaining pills

Pills taken	% of pills taken /pills prescribed for the period	Interpretation
Most	86 -100%	Good
Some	57 – 85%	Suboptimal
Few	0-56	Poor

Arnold T, Brinkley-Rubinstein L, Chan PA, et al. Social, structural, behavioral and clinical factors influencing retention in Pre-Exposure Prophylaxis (PrEP) care in Mississippi. PLoS One. 2017;12(2):e0172354. Published 2017 Feb 21. doi:10.1371/journal.pone.0172354

Blumenthal J, Pasipanodya EC, Jain S, et al. Comparing Self-Report Pre-Exposure Prophylaxis Adherence Questions to Pharmacologic Measures of Recent and Cumulative Pre-Exposure Prophylaxis Exposure. Front Pharmacol. 2019;10:721. Published 2019 Jul 5. doi:10.3389/fphar.2019.00721

$$\% \text{ Adherence} = \frac{\text{(\# Pills taken)}}{\text{(\# Pills prescribed)}} = \frac{\text{(\# Pills given) - (\# Pills remaining)}}{\text{(Daily dose) x (\# Days since refill)}} \times 100$$

Management of poor adherence

Effective use of PrEP requires daily usage. It should be taken for a specified period, initially for attainment of full protection, followed by daily use for the duration of possible exposure to HIV infection, followed by a continuous use for one month after the cessation of exposure. Good quality counselling fosters adherence and supports a comprehensive plan for sexual and reproductive health. It is important to offer a combination prevention package of services for PrEP users to further decrease risk of HIV infection. Adherence is important in PrEP and is a significant modifier of PrEP effectiveness. Clients should only be initiated if they declare they are willing to use PrEP as prescribed including clinic visits, adherence and tests. In cases of suboptimal adherence, the following should be done:

- Counselling
- Address related issues that may be affecting client's adherence – social, financial, psychological issues as well as alcohol and substance abuse.
- Assess risk – confirm if client is still at high risk
- Refer to counsellor/psychologist as required
- Consider more frequent visits with counselling if this will help to improve adherence

Persistent non-adherence makes PrEP ineffective and may result in TDF/3TC resistance if infection occurs and HIV is not diagnosed early. Health care workers should stop PrEP in cases of repeated poor adherence (0-3 pills/ 7 days) despite adherence support.

Management of Creatinine Elevation

PrEP is well-tolerated and safe as demonstrated in several studies. Only 10% of people who initiate PrEP develop mild side-effects, and 1 in every 200 users develops one-time elevations in serum creatinine, which is usually temporary. Adverse events should be reported to the pharmacy division, pharmacovigilance unit in the Ministry of Health. Studies showed that clinically significant creatinine elevations were extremely rare in people younger than 45 years of age who had a baseline estimated creatinine clearance more than 90 ml/min and who weighed more than 55 kg. Creatinine elevations were mild, mostly self-limiting, and reversible.

The clinician should consider discontinuing PrEP if a creatinine elevation is confirmed on a separate specimen and if the estimated creatinine clearance decreases to less than 60 ml/min. Once PrEP is stopped, creatinine levels can be re-checked 1-3 months later, and PrEP restarted if renal function, as measured by estimated creatinine clearance, has returned to more than 60 ml/min. Stopping TDF-containing PrEP is typically sufficient to restore baseline renal function. Additional causes should be sought, and specialist treatment considered if:

- Creatinine elevations are more than 1.5-fold the upper limit of normal;
- Renal function or creatinine elevations do not return to normal levels within 3 months of stopping PrEP;
- Creatinine elevations progress at one month or more after stopping PrEP

Common causes of chronic or severe renal insufficiency are diabetes mellitus, uncontrolled systemic hypertension, hepatitis C virus (HCV) infection, liver failure from any cause and pre-eclampsia during pregnancy.

Seroconversion on PrEP

Seroconversion is the development of detectable levels of HIV antibodies. HIV infection and seroconversion among PrEP users can occur if:

- HIV infection was present but not diagnosed at the time of PrEP initiation.
- The client is exposed to HIV during early PrEP use, before achieving optimum drug circulating levels
- PrEP is not used correctly or consistently
- The client is exposed to a TDF resistant HIV strain.

If a person using PrEP tests positive for HIV, PrEP should be stopped immediately, and the person referred for prompt initiation of HIV treatment. Transitions from PrEP to HIV treatment without a gap avoid the risk of resurgence in viral load, immunological injury, and secondary transmissions. The standard first line regimen should be used as only 3% of sero-converters who received PrEP in studies showed resistance to TDF or FTC. **Resistance testing must be performed after one high viral load result to diagnose resistance mutations early among ART clients who seroconverted while taking PrEP.** Resistance testing may also be considered at the time of starting ART in exceptional circumstances after consulting an expert.

Special situations

Women Using Contraception

The Evidence for Contraceptive Options and HIV Outcomes (ECHO) study assessed the impact of three different contraceptive options (Medroxyprogesterone acetate, copper intrauterine device and levonorgestrel implant) on women's HIV risk. While the ECHO trial did not find substantial differences in HIV risk between women using three different contraceptive methods, overall HIV infection rates were alarmingly high (3.8% per annum) among study participants. The trial was conducted in four countries who, like Lesotho, have high HIV prevalence (South Africa, eSwatini, Zambia and Kenya). Women seeking contraception are at high risk of HIV infection and HIV prevention services, including HTS and PrEP, must be integrated and conveniently provided. HIV negative women should be routinely screened for PrEP eligibility and their refills must be scheduled to coincide with contraceptive visits.

PrEP does not affect the efficacy of hormonal contraceptives and hormonal contraceptives do not affect PrEP efficacy. There are no known drug interactions between TDF/3TC and oral, injectable or implanted hormonal contraceptives.

Pregnant and Lactating Women

Pregnant women are at a greater risk of HIV acquisition than their non-pregnant counterparts. This is thought to result from a combination of hormonal, immunologic, vaginal microbiome and behavioural changes occurring during pregnancy. A study by Machekano et al (2018) reported 2.6% annual HIV incidence among pregnant women in Lesotho. This is double the 1.3% per annum reported among Basotho women (15-49 years) in LePHIA 2017. AGYW in this study had a significantly higher risk of HIV infection compared to older women. The same study also showed 9.5% HIV transmission from acutely infected pregnant and postpartum women to their infants. HIV infection acquired during pregnancy or breastfeeding is more likely to be transmitted to the infant due to the high viral load associated with acute infection.

Machekano R, Tiam A, Kassaye S, Tukei V, Gill M, Mohai F, et al. (2018) HIV incidence among pregnant and postpartum women in a high prevalence setting. PLoS ONE 13(12): e0209782. https://doi.org/10.1371/journal.pone.0209782

The use of TDF among pregnant and breastfeeding women has not been associated with adverse outcomes to the women or their unborn babies. There were no differences in pregnancy outcomes, infant birth weight or congenital malformations in pregnant PrEP users compared to placebo users in the Partners PrEP study. TDF, in combination with other medicines, has also been frequently used for HIV treatment among pregnant and lactating women.

PrEP may be started or continued during pregnancy or breastfeeding if the woman is at substantial risk of HIV infection. HIV negative women should be routinely screened for eligibility at antenatal and postnatal clinics. Refills must be scheduled at the woman's convenience to coincide with ANC, PNC and immunization visits.

Hepatitis B infection

TDF/3TC is active against HBV infection at the same dose used for PrEP. For Hepatitis B infected individuals who take PrEP, TDF/3TC suppresses HBV and thus also acts as treatment. When PrEP is stopped, occasionally HBV infection can flare in the following 1-3 months. Such flares are often limited to elevations in serum alanine aminotransferase (ALT) and aspartate aminotransferase (AST), although decompensation of liver function can occur. Symptomatic flares in HBV infection are treated by restarting treatment, in this case, TDF/3TC. The risk of hepatitis flares after stopping HBV treatment is higher in people with liver fibrosis. Hepatitis flares were not observed in two PrEP trials that enrolled participants with HBV infection who had normal or near normal liver function tests (less than 2 times the upper limit of normal AST or ALT) and no clinical signs of liver cirrhosis .

SECTION 3.2: EVENT-DRIVEN PREP (2+1+1)

Based on the available evidence and WHO recommendations, Lesotho has adopted event-driven PrEP dosing as an option **for all people assigned male status at birth** and not taking gender-affirming hormones. Daily oral PrEP is still recommended for all people at substantial risk of HIV, including men.

Two pills of TDF/3TC are taken between 2-24 hours in advance of sex. Then, a third pill is taken 24 hours after the first two pills, and a fourth pill 48 hours after the first two pills. See table below:

Table 1.5: ED-PrEP dosing

	Timing	Number of pills
First Dose	2-24 hours before sex	2
Second dose	24 hours after loading dose	1
Third dose	48 hours after loading dose	1

ED-PrEP has been described as "2+1+1" dosing, a term that can be helpful to communicate this approach as an alternative to daily dosing for men. This 2+1+1 dosing is the only ED-PrEP regimen that has been demonstrated to be effective. ED PrEP is recommended for isolated acts. If more sex acts take place over the following days, a single PrEP pill can be continued daily for as long as sex continues, with a single pill taken for each of two days after the last sex act.

ED-PrEP is appropriate for men who:

- Find ED-PrEP more effective and convenient
- Have infrequent sex (for example, sex less than 2 times per week on average)
- Are able to plan for sex at least 2 hours in advance, or who can delay sex for at least 2 hours

ED PrEP users do not need to be provided with a 30-pill bottle due to their inconsistent exposure. Instead they should be provided with 15 pills (enough to cover them for 3 exposures). ED-PrEP users should be asked to come back for HIV test 1 month after starting the intervention for the first time or restarting. This visit should be recommended even if the client still has pills remaining. Similarly, HIV tests should be repeated at month three and every three months thereafter as recommended for daily oral PrEP. Adherence to ED-PrEP is difficult to measure and will not be required.

Starting and Stopping PrEP Safely

PrEP is not a lifelong drug-taking intervention. People can cycle on and off PrEP. This is NOT to be regarded as non-adherence. It is important to constantly remind users of lead in and lead out times during use cycles. The lead in time relates to the time that it takes to reach a drug concentration in blood that confers the protective effect while the lead out time relates to the duration that a PrEP user needs to continue taking PrEP for following the last exposure to HIV before stopping the medications.

- All people assigned male at birth (and not using gender-affirming hormones) have a lead in time of 2-24 hours and a lead out time of 2 days.
- **Women and all individuals with exposure through injective practices have lead in and lead out times of 7 days.**
- The new times are informed by pharmacokinetic studies.
- Additional HIV prevention interventions should be used during the lead in time. These may include abstinence or using condoms for all vaginal and anal intercourse.

SECTION 3.3: DAPIVIRINE VAGINAL RING

Vaginal ring

Background

The WHO has recommended the dapivirine vaginal ring as an additional HIV prevention choice for women at substantial risk of HIV infection as part of combination prevention approaches. PrEP delivered through a vaginal ring containing dapivirine, a novel non-nucleoside reverse transcriptase inhibitor (NNRTI), as the active PrEP agent could provide an acceptable option for women who are unable or do not want to take oral PrEP. The dapivirine vaginal ring is a female-initiated option to reduce the risk of HIV infection. It is made of silicone and contains dapivirine, which is slowly released into the vagina over one month. It should be used in combination with other prevention methods.

Studies have shown a reduction of HIV infection risk of up to 62% among users with good adherence, with risk reduction seen 24 hours after ring insertion. The ring should be continuously worn for 28 days before being replaced by a new ring. Initial outcomes from oral PrEP programmes for women are mixed. Some women report facing challenges to taking daily oral PrEP. These include the need to take a pill every day, opposition to their taking oral PrEP from partners and parents, and side-effects that may occur during the first month of use. These concerns suggest that additional options are needed for PrEP delivery, including long-acting PrEP products that are potentially more discrete, do not rely on daily adherence and have less systemic adverse events. The dapivirine vaginal ring could help to meet the requirements of women with unmet HIV prevention needs.

Side Effects

Local irritation resulting in itching and a discharge has been reported by some users. This typically resolves after a few days.

HIV Testing

HIV testing should follow the oral PrEP HIV testing schedule. A blood-based HIV rapid test should be performed before initiating the use of the dapivirine vaginal ring, at one month of use and every three months thereafter.

Monitoring

Similar to oral PrEP, an HIV test is required at baseline while HBsAg, RPR and pregnancy tests are also recommended within the first three months of use. However, creatinine testing is not required as dapivirine does not have kidney related concerns. Visit schedules are the same as for oral PrEP (month 0, month 1, month 3, and every 3 months thereafter).

Adherence Support

Similar to oral daily PrEP, the dapivirine vaginal ring needs to be used continuously as prescribed for effectiveness. Adherence support should therefore be a key part of service provision. Flexible and tailored support will be needed, especially as women start to use this new product.

Frequent check-ins with users may be needed for new users. Data showed low adherence among women and girls younger than 21 years. Additional adherence support, including partner and peer support, should be considered depending on the individual's circumstances for this age group.

Pregnancy and Breastfeeding

A woman-centred, rights-based approach will be utilized when counselling on potential HIV prevention methods and options, including dapivirine vaginal ring. Use in pregnant and breastfeeding women is under investigation with limited safety data available to date.

In the ASPIRE trial, 169 of the 2629 women enrolled became pregnant during the trial. From this small data set, dapivirine use in the periconception period does not appear to be associated with adverse effects on pregnancy or infant outcomes. Two ongoing studies, MTN-042 (DELIVER) and MTN-043 (B-PROTECTED) are expected to provide further safety data for pregnant and breastfeeding mothers.

Making a choice between oral PrEP, the Ring and other prevention methods

Current evidence suggests that oral daily PrEP, when taken as prescribed, has greater efficacy for HIV prevention than the dapivirine vaginal ring. Oral PrEP should be offered at sites where the dapivirine vaginal ring is provided to enable women to make a choice. Male and female condoms must also be available and offered alongside the dapivirine vaginal ring. Women should be provided with full information and counselling on the available prevention options and their relative efficacy and safety and counselled to help them to make an informed choice regarding the best option for them.

Some women may switch from oral daily PrEP to using the dapivirine vaginal ring and potentially back to oral PrEP use. Some women may also decide to use both the dapivirine vaginal ring and oral daily PrEP at the same time and must understand the importance of good adherence to optimize protection from either method. Inconsistent use of either would be ineffective for HIV prevention.

Oral PrEP and condom use are the preferred HIV prevention methods for women who have undergone total or radical hysterectomy due to the absence of the cervix which may affect efficacy of the ring.

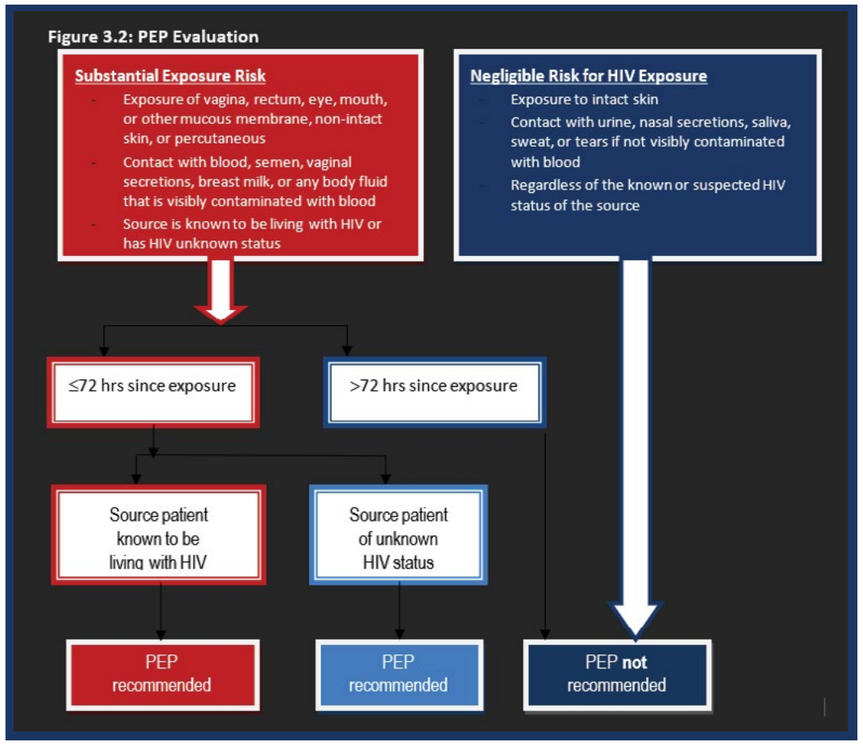
Baeten JM, Palanee-Phillips T, Brown ER, et al. Use of a Vaginal Ring Containing Dapivirine for HIV-1 Prevention in Women. N Engl J Med. 2016;375(22):2121-2132. doi:10.1056/NEJMoa1506110

SECTION 3.4: POST-EXPOSURE PROPHYLAXIS

Post-exposure prophylaxis (PEP) is the prevention of transmission of pathogens following a potential exposure. In the context of HIV, post-exposure prophylaxis refers to the set of services that are provided to prevent HIV infection and includes first aid; counselling, assessment of risk of infection; HIV testing; and depending on the outcome of the exposure assessment, a prescription of a 28-day course of ARVs with appropriate support and follow-up.

PEP should be offered, and initiated as early as possible within 72 hours, to all individuals with exposure that has the potential for HIV transmission. An exposure has potential for HIV transmission only if the source has HIV infection, an infectious body fluid is involved and there is a route of infection. Infectious body fluids include blood, genital secretions, breast-milk, and blood-stained fluids. Routes of infection include mucous membranes (eye, nose, mouth, genitals, anus) and the skin. Exposures that do not require PEP include if the source is established to be HIV negative, if the exposed individual is HIV positive, if only intact skin is exposed, or if the bodily fluid does not pose a significant risk (tears, urine, sweat, non-blood-stained saliva).

Figure 3.2: PEP Evaluation



Exposures may include occupational exposure, sexual assault, and other sexual exposures. People exposed to HIV through sexual assault or occupational exposure merit close monitoring. In addition to the risk of infection, these experiences cause significant psychological damage that can be long-lasting. For these reasons, avoidance of occupational exposure and proper management of sexual assault victims should be given top priority.

Table 3.6: Recommendations for PEP

Exposure	Source patient with HIV or unknown status
Intact Skin	No PEP
Mucosal splash or Non-intact skin	3-drug PEP regimen
Percutaneous (sharps)	3-drug PEP regimen
Percutaneous (needle in vessel or deep injury)	3-drug PEP regimen

It is imperative that HIV post-exposure prophylaxis policies reinforce the importance of primary risk prevention in all settings where HIV could be transmitted. PEP should never be provided in isolation but should form part of a wider strategy for preventing exposure to HIV. It should also be associated with measures to prevent other blood borne diseases, such as Hepatitis B and C.

PEP Regimens

DTG is the preferred third drug in PEP regimens. NRTI backbone of TDF/3TC or ABC/3TC depends upon the age and weight of the client. Adolescents and adults >35kg should be provided TDF/3TC/DTG and children ABC/3TC + DTG.

All adolescent girls and women should be offered pregnancy test at baseline and during follow-up. Emergency contraception should be offered to girls and women as soon as possible within five days of the sexual exposure and information provided on the risks (including potential risks of neural tube defects) and benefits of DTG if this drug is included in the PEP regimen. Individuals for whom DTG is not recommended based on age, weight, or client choice should be offered LPV/r as the third drug.

Table 3.7: Recommended PEP drug regimen

Population	Drug	Dose	Frequency	Duration
Adults & adolescents ≥ 35kg	TDF/3TC	300/300mg	Once daily	28 days
[b]Adults, adolescents & children	DTG (3rd drug)	[a]Weight-based	Once daily	28 days
Adults, adolescents & children < 35kg	ABC/3TC	[a]Weight-based	Once daily	28 days
[c]Adults and children	Lopinavir/ritonavir (3rd drug)	[a]Weight-based	Twice daily	28 days

[a]See Annex 4 for weight-based dosing
[b]Counsel on potential risks in women of childbearing potential when taken around the time of conception.
[c]For those unwilling or unable to use DTG, LPV/r is the preferred 3rd-drug

SECTION 3.5: TREATMENT AS PREVENTION

Treating people living with HIV with ART is an effective strategy for preventing new HIV infections – "Treatment as Prevention."When the viral load of the HIV-positive partner is sustainably fully suppressed by ART (below 200 copies/ml) the protective effect of ART for preventing new infections approaches 100%. "Treatment as Prevention" is an effective strategy regardless of the route of HIV exposure (vaginal, rectal, or percutaneous) and population group (heterosexual men and women, homosexual men and women, transgender persons, commercial sex workers, and people who inject drugs).

Studies further demonstrated that PLHIV who achieve and maintain an undetectable viral load by taking antiretroviral therapy as prescribed cannot sexually transmit the virus to others.

SECTION 3.6: ELIMINATION OF MOTHER-TO-CHILD TRANSMISSION OF HIV

Elimination of mother-to-child transmission (PMTCT) of HIV is composed of four prongs:

1) Preventing HIV infection in women
2) Preventing unintended pregnancies among women with HIV
3) Preventing vertical transmission of HIV from mothers to their infants during pregnancy, delivery, and breastfeeding
4) Providing care, treatment, and support for mothers with HIV and their children

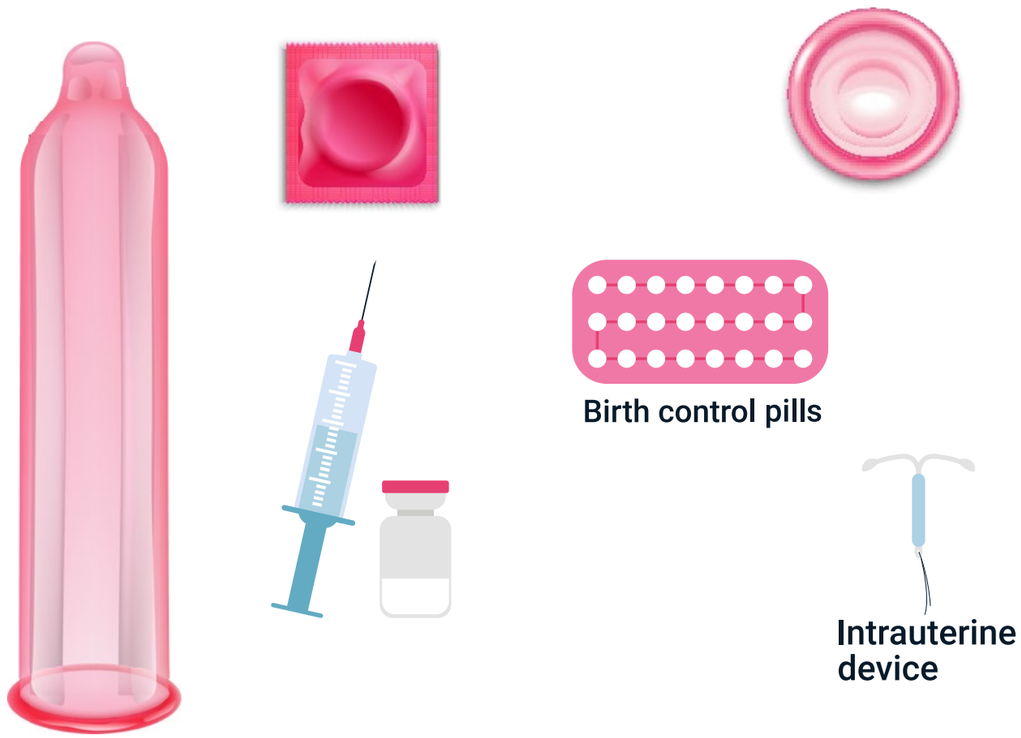
Clinicians should discuss pregnancy desires and plans regularly with women and adolescent girls living with HIV, and family planning services should be provided to those who do not wish to become pregnant. HIV prevalence among pregnant women attending ANC is estimated at 22.8% in Lesotho while eMTCT coverage and MTCT were at 84% and 8.7% respectively in 2019. Maximum effort is needed to ensure that all pregnant women and adolescent girls are tested for HIV and actively enrolled into eMTCT services. In addition, HIV-exposed infants must be enrolled and retained in exposed infant care.

SECTION 3.7: MALE MEDICAL CIRCUMCISION

Voluntary male medical circumcision (VMMC) has been shown to reduce an HIV-negative man's risk of HIV infection by up to 60%. Other benefits of medical male circumcision include the reduced risk of human papillomavirus among men with the indirect benefit of reduced HPV infections among their female partners and lower cervical cancer incidence. VMMC is an additional efficacious HIV prevention option within combination prevention for males aged 15 years and older to reduce chances of heterosexually acquired HIV infection. Comprehensive VMMC services include safer sex education, condom promotion, STI screening and management, risk- based HIV testing services and linkage to HIV care and treatment services for individuals identified as HIV infected. Refer to National VMMC Guidelines for further guidance.

SECTION 3.8: OTHER HIV PREVENTION INTERVENTIONS

Other HIV prevention interventions include condom and lubricants, risk reduction counselling, targeted information and education, early STI diagnosis and treatment and enabling interventions to address barriers to accessing services. Male condoms are estimated to reduce heterosexual transmission by at least 80% and to offer 64% protection in anal sex among men who have sex with men, if used consistently and correctly. Less data is available for the efficacy of female condoms, but evidence suggests they can have a similar prevention effect. Risk reduction messages focus on encouraging abstinence, avoiding multiple concurrent sexual partners, and using condoms consistently and correctly during sexual intercourse (vaginal, anal, and oral). Interventions to create an enabling environment include measures to reduce stigma and improve access to interventions including HTS.



CHAPTER 4: HIV DIAGNOSIS

INTRODUCTION

The overarching goals of HTS are as follows:

- To identify people with HIV through the provision of quality testing services for individuals, couples and families;
- To effectively link individuals and their families to HIV treatment, care and support, as well as HIV prevention services, based upon their status; and
- To support the scaling up of high-impact interventions to reduce HIV transmission and HIV-related morbidity and mortality.

The diagnosis of HIV includes testing services in health-care facilities, free-standing sites and a wide range of community-based approaches, as well as HIV self-testing (HIVST
The use of HIV rapid diagnostic tests (RDTs) at the point of care has become an important strategy to expand access, increase the return of same-day results and enable immediate linkage and follow-up.

SECTION 4.1: HIV TESTING

People access HIV treatment, care, and prevention through the gateway of HIV testing services (HTS). The overall goals are timely identification of people living with HIV (case-finding), linking to treatment, care, and support services, reinforcing HIV prevention and linking HIV-negative clients to appropriate prevention services. Diverse models of HTS are available to increase access to HIV diagnosis, including testing services in health care facilities, free standing sites and a wide range of community-based approaches. Priority attention should be given to adolescents, pregnant women, and infants due to the high rates of new infections among adolescents and pregnant women and the rapid progression of HIV disease in infants. Men are another priority group that must be targeted due to their poor health seeking behaviours and possible intergenerational sexual relationships with adolescent girls and young women. It is crucial that all Basotho know their HIV status if the HIV epidemic is to be reversed and stopped.

The process of HIV testing services should follow the minimum standards of **C**onsent, **C**onfidentiality, **C**ounselling, **C**orrect results, and **C**onnection (linkage to care and treatment), the so-called 5 C's.

The recommendations in this chapter reflect those in the 2019 National HIV Testing Services Guidelines and the National eMTCT 2020 Guidelines . Please refer to those guidelines for complete guidance.

Consent for HIV Testing

Adults and children 12 years and above have the right to give their own informed consent for HIV testing and index testing in Lesotho. For children under 12 years, a parent or caregiver who brings the child for care can give written or verbal consent for testing. Pre and post-test counselling must be offered to the client and/or caregiver. If the health care provider determines that an adult or child is at risk of HIV exposure or infection, consent is not required, and the provider may initiate testing with the understanding that the individual maintains the right to 'opt out'.

National HTS Guidelines (2019), Ministry of Health, Lesotho.

National Guidelines on Elimination of Mother to Child Transmission of HIV (2020), Ministry of Health Lesotho.

Who Can Conduct Rapid Tests and Perform DBS for DNA PCR?

All those trained and accredited in HTS including:

- Counsellors, including lay counsellors who are adequately supervised
- Midwives
- Nurses
- Trained Nursing Assistants
- Physicians
- Laboratory Technicians and Technologists
- Social Workers
- Pharmacists and Pharmacy Technicians
- Ward Attendants
- Village/Community Health Workers who are adequately supervised
- Expert Patients (PLHIV) who are adequately supervised
- Doctors

Client-Initiated Testing and Counselling

Clients may seek HTS to guide personal life decision making; plan for their future or the future of their families; understand symptoms they might be experiencing; or to support personal HIV prevention efforts.

Provider-Initiated Testing and Counselling

The importance of knowing one's HIV status is to ensure receipt of appropriate care and should be emphasised. HIV testing should be offered to all people with unknown status during all clinical interactions with a health facility. The need for HIV testing should be assessed using the national HTS screening tool. Those found to be in need of testing should be offered HTS on-site or receive HIV self-test kit to screen at their own convenience and report back to the nearest facility for interpretation of screening results. Individuals who opt out should be further counselled on prevention, the benefits of knowing one's status, and different ways of getting tested if desired in the future.

Frequency of HIV Testing

The frequency of HIV testing is dependent on the risk of HIV transmission.

People who are diagnosed HIV-negative but remain at high risk, such as some people from key populations, may benefit from PrEP and regular screening for ongoing risk. All sexually active adolescents and adults in Lesotho should be tested at least annually. It is important that all individuals are routinely assessed for their need for HIV testing and their risk for recent HIV exposure at every health service delivery point as retesting earlier than 12 months may be indicated based on individual exposure and risk assessment.

For further guidance on retesting frequency for various population groups, consult HTS guidelines.

Self Testing

HIV self testing refers to a process where individuals collect their own specimen (usually an oral swab), perform an HIV test, and interpret the test results alone and/or with the support of the health care provider. Self testing reduces barriers to HIV testing, particularly among certain populations that have low HTS utilization rates, such as, adolescents, key populations, men, and individuals fearful of testing in health facilities due to stigma or poor treatment by health care providers. Support systems are critical to ensure appropriate linkage to confirmatory HIV testing services as well as HIV care and treatment if HIV infection is confirmed. HIV self testing does not provide a definitive diagnosis. **A reactive self test always requires additional testing according to the national HIV testing algorithm.**

Refer to the National HIV Testing Services Guidelines for guidance on HIV self testing.

HIV-positive clients already on ART should be discouraged from performing HIV self testing as a false negative result can be obtained due to viral suppression from ART leading to low levels of HIV antibodies that are not detected by some rapid tests.

Safe and Ethical Testing for Partners and Families

Index testing and partner notification services

Ensuring that all sexual partners and biological children below 19 years of age of PLHIV is a key targeted strategy for identifying HIV-positive people in the community. Additionally, biologic siblings of children and adolescents living with HIV should also be offered HTS. Persons living with HIV should be routinely asked about the HIV status of their sexual partners and children and the statuses of these family members should be clearly documented in the client's medical record to allow for further follow-up.

Intimate Partner Violence Screening

Further guidance on safe and ethical index testing and partner notification services including intimate partner violence screening is detailed in the HTS guidelines.

Adolescents

Adolescents are often underserved and given insufficient priority, with poor access to and uptake of HTS and linkage and retention to prevention, care, and treatment services. Adolescent girls and adolescents from key populations are particularly vulnerable to HIV infection and benefit from access to acceptable and effective HIV testing services. HIV testing should be integrated in all adolescent services, including family planning services. Counsel adolescents about the potential benefits and risks of disclosure of their HIV status and empower them to determine if, when, how and to whom to disclose.

Community-Based HIV Testing and Counselling

Although facility-based testing is a key HTS approach, PLHIV who are diagnosed with HIV at health facilities are often identified late in the course of HIV disease because they have developed clinical signs and symptoms of HIV. In addition, some populations, including men, adolescents, and especially key populations, have low utilization of health care services where they can be reached by facility-based testing approaches. Community-based testing approaches provide opportunities to reach PLHIV earlier in the course of their HIV disease and engage with populations that may not normally attend health facilities.

The use of HIV rapid tests performed by trained lay and professional counsellors and community health workers has facilitated the expansion of HIV testing services in community settings, which include homes, transport stations, religious facilities, schools, universities, workplaces and venues frequented by key populations. Continued expansion of community-based testing is an important strategy in achieving universal knowledge of HIV status and earlier diagnosis with linkage to care and treatment. Community-based HTS include mobile, door-to-door, index, campaign, events, workplace and school-based approaches.

Community health workers who are certified to provide HTS and appropriately supervised should provide HTS to all community members when able and link them to facility-based or other community-based HTS providers if they are not able to provide HTS themselves. Easy access to HIV self testing services and provision of safe and ethical index testing services remain critical in identification of PLHIV in the communities and linking them to appropriate treatment and or prevention services.

Community-based HIV testing services with linkage to prevention, care and treatment services are recommended as a key strategy for ensuring that all people know their HIV status.

Table 4.1: Summary of HTS Recommendations

Who to Test	When to Test
Everyone attending health facilities	• Confirm status at all health care encounters • Retest at least annually for all sexually active adolescents and adults • Retest every 3 months for individuals with high risk for recent HIV exposure§
Partners and couples	• Premarital, pregnancy, after separations, new partnerships, at the start of care and ART • For the HIV-negative person in sero-discordant couples, offer re-testing at least every 3 months if the HIV-positive partner is not on ART or viral load is not suppressed
Partners and family members of PLHIV	• As soon as possible after the index client is diagnosed
Key populations: MSM, transgender people, sex workers and their clients, prisoners, factory workers, and injection drug users	• At least annually for all adolescents and adults • Every 3 months for individuals with high risk for recent HIV exposure§
Pregnant women and male partners	• At first antenatal care visit • Re-test in third trimester at 36 weeks and every 3 months thereafter during breastfeeding period • Test immediately for women presenting in labour with unknown HIV status or were not retested at 36 weeks • Offer partner testing throughout ANC and PNC
Infants and children <18 months old of HIV-positive mothers or women with unknown HIV status	• Early infant diagnosis for all HIV-exposed infants • Retest based on EID testing algorithm • Determine the final infant HIV infection status after 18 months and/or when breastfeeding ends
Children (>18 months to 9 years)	• Establish HIV status for every child and retest based on risk of HIV exposure (NB: children in this age group who test HIV negative do not need repeat HIV testing unless there has been a possible exposure to HIV)
Adolescents (10 to 19 years)	• Establish HIV status for every adolescent and retest based on risk of HIV exposure • Retest at least annually for all sexually active adolescents and adults • Retest every 3 months for individuals with high risk for recent HIV exposure§
People with disabilities (mental and physical)	• Establish HIV status for every person with a disability and retest based on risk of HIV exposure • Retest at least annually for all sexually active adolescents and adults • Retest every 3 months for individuals with high risk for recent HIV exposure§
People with presumptive or confirmed tuberculosis	• Establish HIV status for every person with presumptive or confirmed tuberculosis • Urgently link all individuals with TB/HIV co-infection to appropriate treatment for both infections
Individuals receiving oral pre-exposure prophylaxis or using dapivirine vaginal ring	• Retest every three months to ensure HIV negative status. • If seroconversion occurs, stop PrEP immediately and initiate ART.

§ Examples of behaviours and groups of people with ongoing high risk for HIV exposure and infection:

- Unprotected intercourse with an HIV-positive partner or partner with unknown HIV status (risk of infection is significantly reduced when HIV-positive partner's viral load is <1000 copies/ml)
- Men who have sex with men and transgender women
- Commercial sex workers and their clients
- Exchanging sex for money or having paid for sex
- Incarcerated individuals
- Injection drug use
- Multiple sexual partners

SECTION 4.2: UPDATED DUAL HIV/SYPHILIS ELIMINATION TESTING

Pregnancy and breastfeeding are periods when many women face an increased risk of HIV acquisition. Therefore, all pregnant women in all settings should be offered testing for HIV, syphilis and hepatitis B virus at least once and as early as possible during pregnancy. The testing algorithm for all pregnant and breastfeeding women has been updated as follows:

- Dual HIV/Syphilis testing at first contact for women with unknown HIV and syphilis status.
- Dual HIV/Syphilis testing during 3rd trimester for women with unknown HIV and syphilis status and those with negative status at 1st contact. Testing is recommended at 36 weeks but may be done at any point in 3rd trimester if client is unlikely to come back at 36 weeks or presents earlier than 36 weeks in labour.
- Pregnant and breastfeeding women living with HIV should not be tested with dual HIV/Syphilis tests to test for syphilis. Available syphilis tests such as VDRL/RPR should be used instead.
- Aside from the dual HIV/syphilis test conducted at 1st contact and 3rd trimester, provider-guided HIV self-testing shall be conducted every 3 months during pregnancy, post-delivery and throughout breastfeeding for women who test HIV negative.
- Women considered to be at high risk of acquiring HIV should be linked to prevention services such as risk reduction counselling, PrEP, etc and should be retested every 3 months.
- Women requesting and eligible for PrEP or on PrEP should be tested using conventional HIV testing and not self -testing.

Self-testing is encouraged for 3-monthly testing beyond delivery for PBFW and their partners. A reactive self-test result does not constitute HIV diagnosis and always requires additional testing to confirm the HIV status. PBFW who did not come with their sexual partners can also be provided with HIV self-tests to give to their partners.

Eligible clients for dual HIV/Syphilis testing are:

- All unknown HIV and syphilis status at 1st ANC
- All pregnant women with negative or unknown HIV and syphilis status at 3rd trimester

Clients who are not eligible for testing using dual HIV/Syphilis testing:

- • Women with HIV taking antiretroviral therapy (ART)
- • Women already diagnosed with and treated for syphilis during their current pregnancy
- • Re-testing for HIV

SECTION 4.3: HIV DIAGNOSIS IN CHILDREN

More than 90% of HIV infections among children are acquired from the mother during pregnancy, labour and delivery, or through breastfeeding. Because infants and children have an immature immune system, HIV disease progresses much faster in infants and children than it does in adults. If untreated, approximately 30% of HIV-infected children die before their first birthday, 50% by age 2, and 80% by age 5.

It is of paramount importance to diagnose HIV-exposed and HIV-infected children early; with rapid testing or nucleic acid testing (e.g. DNA PCR) before they get sick.

HIV Testing Services for Infants and Young Children

The diagnosis of HIV in infants is challenging because they may carry maternal HIV antibodies, which cross the placenta during pregnancy. Antibody (serological) tests, including HIV rapid tests, indicate HIV exposure and possible HIV infection. The HIV exposure of all infants should be known in order to diagnose HIV infection as early as possible.

HIV-infected infants have a poor prognosis if not diagnosed early and initiated on treatment immediately. Therefore, it is extremely important that exposed infants are followed closely, monitored for normal growth, development, and general health, prescribed co-trimoxazole and receive the appropriate ARV prophylaxis to prevent MTCT. Any signs of HIV infection should be considered seriously, and proper care and treatment administered to the infant immediately. Nucleic acid testing, such as DNA-PCR, should be performed for early infant diagnosis to allow for appropriate follow-up, treatment decisions, and initiation of ART as soon as indicated.

Infants will be considered **low risk** if they are born to a mother on ART > 12 weeks with third trimester viral load (VL) below 1000 cps/ml. All other infants will be considered **high risk** such as those with recent maternal seroconversion to HIV, less than 12 weeks of maternal ART and high maternal VL in the third trimester or no VL in the third trimester.

Based upon guidance from WHO and review of programmatic data, algorithms for early infant diagnosis have been updated.

- All **low-risk** HIV-exposed infants should receive HIV DNA PCR testing, either point-of-care (POC) or laboratory based, at 6 weeks of age or earliest presentation to care thereafter.
- **High-risk infants** will receive DNA PCR testing at birth or first visit to health facility.
- **High-risk infants** will then have repeat HIV DNA PCR testing. At facilities using lab-based DNA PCR, repeat testing at 10 weeks. At facilities using POC, repeat testing at 14 weeks.
- **All** HIV-exposed infants should receive DNA PCR testing, either POC or laboratory based, at 9 months of age, regardless of feeding status, unless last HIV DNA PCR was positive.
- **All** HIV-exposed infants, unless last DNA PCR was positive, should receive rapid tests at 18 months of age and 3 months post cessation of breastfeeding if later than 18 months.
  Conduct rapid test every three months for all infants who continue breastfeeding beyond 18 months of age if mother is not virally suppressed. Conduct rapid test every 6 months for all infants who continue breastfeeding beyond 18 months of age if mother is virally suppressed.

For HIV-exposed infants who are weaned before 18 months of age, a post-wean HIV DNA PCR is recommended 3 months after complete cessation of breastfeeding. Any HIV-exposed child aged 18 months and below presenting with clinical symptoms consistent with HIV disease should receive HIV DNA PCR immediately to determine infection status. Infected children are likely to be seen in inpatient wards and nutrition corners so repeat HIV DNA PCR should be proactively performed in these settings.

In children less than 18 months, all positive HIV rapid tests should be followed immediately by DNA PCR testing to determine the infant's HIV infection status. If the confirmatory DNA PCR result is negative giving discordant results, a third DNA PCR sample should be sent along with an HIV viral load to determine the infant's true HIV infection status. ART should be continued until the results of the third DNA PCR and viral load have returned, and an expert paediatric HIV clinician should be consulted.

All HIV-infected infants need two definitive tests to diagnose HIV infection: either 2 positive DNA PCRs or 1 positive DNA PCR and one detectable viral load or 1 positive DNA PCR and positive HIV rapid tests at 18 months.

Table 4.2: Interpretation of DNA PCR Testing in Children < 18 months

DNA PCR Result	Test Interpretation
POSITIVE	• Definitively HIV infected • Send a second sample for confirmation of HIV status • Initiate ART immediately
NEGATIVE**	• Definitively HIV uninfected, if outside the window period* **OR** • HIV exposed and possibly HIV infected, if still within the window period*
INDETERMINATE	• Inconclusive result, possibly due to quality of sample or error in performing DNA PCR. • Repeat DNA PCR sample as soon as possible

* Window period for DNA PCR test is 6 weeks.
** Must always consider window period when interpreting HIV negative test results.

Table 4.3: HIV Testing for Infants < 18 months with Unknown HIV Status

Scenario	Test	Result	Interpretation
Mother available	HTS to mother	Negative	Infant is not HIV exposed.
	HTS to mother	Positive	Infant is HIV exposed. Send DNA PCR.
Mother unavailable Infant < 4 months	DNA PCR & Rapid test to infant	DNA PCR negative Rapid test negative	Infant is not HIV exposed.
	DNA PCR & Rapid test to infant	DNA PCR negative Rapid test positive	Infant is HIV exposed. Repeat DNA PCR after 12 weeks.
	DNA PCR & Rapid test to infant	DNA PCR positive Rapid test positive	Infant is HIV infected. Send confirmatory DNA PCR and VL. Begin ART.
	DNA PCR & Rapid test to infant	DNA PCR positive Rapid test negative	Infant is HIV infected. Send confirmatory DNA PCR and VL. Begin ART.
Mother unavailable Infant 4-18 months	DNA PCR to infant	DNA PCR negative	Infant is HIV negative but could be exposed. Repeat testing in 12 weeks.
	DNA PCR to infant	DNA PCR positive	Infant is HIV infected. Send confirmatory DNA PCR and VL. Begin ART.

Presumptive Clinical Diagnosis of HIV in Children under 18 Months

In cases where DNA PCR is not available, or results are pending, the presumptive diagnosis of severe HIV disease is essential for early initiation of antiretroviral treatment. An infant or young child diagnosed with HIV based on the clinical criteria in Table 4.4 below should be **started on ART immediately,** even before definitive DNA PCR test results are available. If possible, perform DNA PCR and viral load at time of ART initiation, but do not delay ART initiation.

A presumptive diagnosis of severe HIV disease should be made if:

A diagnosis of any AIDS-indicator condition(s) can be made	**OR**	The child is symptomatic with *two or more* of the following: • Oral/oesophageal thrush[a]; • Severe pneumonia[b]; • Severe sepsis[c]

Other factors that support the diagnosis of severe HIV disease in an HIV seropositive child include:

- Recent HIV-related maternal death; *or*
- Advanced HIV disease in the mother; *or*
- CD4 < 20% in infant.

Confirmation of the diagnosis of HIV infection should be sought as soon as possible.

NB: The presence of a positive rapid test is no longer one of the criteria for presumptive diagnosis of severe HIV disease in infants because women who are recently infected with HIV may not pass HIV antibodies to their child before delivery or in sufficient amounts through breastfeeding leading to false negative results in the infant

AIDS-defining conditions include *Pneumocystis jirovceii* pneumonia, oesophageal candidiasis, cryptococcal meningitis, cerebral toxoplasmosis, and unexplained wasting or malnutrition.

IMCI definitions:

a. Oral thrush: Creamy white to yellow soft small plaques on red or normally coloured mucosa which can often be scraped off (pseudo membranous), or red patches on the tongue, palate or lining of mouth, usually painful or tender.

b. Severe pneumonia: Cough or difficulty in breathing in a child with chest in-drawing, stridor or any of the IMCI general danger signs i.e., lethargy or unconsciousness, not able to drink or breastfeed; vomiting; and presence or history of convulsions during current illness.

c. Severe sepsis: Fever or low body temperature in an infant with any severe sign such as fast breathing, chest in-drawing, bulging fontanelle, lethargy, reduced movement, not feeding or sucking breast milk, convulsions.

SECTION 4.4: DIAGNOSIS OF HIV IN ADULTS, ADOLESCENTS, AND CHILDREN ≥ 18 MONTHS

By 18 months of age, all HIV-exposed children have lost their maternal HIV antibodies. Thus, serial rapid HIV testing can accurately confirm HIV infection. Serial testing is done in children over the age of 18 months, adolescents, and adults to determine HIV infection status. Children ≥ 18 months still breastfeeding should be considered to still be HIV exposed. Rapid testing should be repeated three months after cessation of all breastfeeding. All previously HIV-exposed children >18 months who did not have confirmatory rapid testing done at 18 months should have rapid HIV testing as soon as possible to confirm their HIV status.

Interpretation of HIV serial rapid testing

(Refer to the Annex 18 and National HIV Testing Services Guidelines for the complete HIV rapid testing algorithm)

Lesotho has been using a 2-test strategy for diagnosis of HIV. However, it is moving to a 3-test strategy as recommended by WHO. As more PLHIV are diagnosed and initiated on ART, the prevalence of undiagnosed PLHIV in the population decreases. A 3-test strategy is necessary to ensure a high positive predictive value – the likelihood that a positive test accurately reflects HIV infection. Details of the new algorithm will be included in revised HTS guidelines. For now, the tests will be referred to as A1 (first test), A2 (second test) and A3 (third test).

- If the first rapid test (A1) is negative, the result is reported as HIV negative. Counselling on strategies to stay negative should be conducted and repeat HIV testing is recommended based on the assessment of the individual's recent potential HIV exposure and risk behaviours.
- If the first rapid test (A1) is positive, a different confirmation rapid test (A2) is carried out
  - If the second rapid test (A2) is also positive, a third rapid test (A3) is carried out.
    - If A3 is positive, the result is reported as HIV positive.
    - If A3 is negative, the result is reported as HIV-inconclusive. Repeat testing is recommended in 14 days.
    - If the second rapid test (A2) is negative, the first rapid test (A1) is repeated.
  - If the repeat A1 test is negative, the result is reported as HIV negative. Counselling on strategies to stay negative should be conducted and repeat HIV testing is recommended based on the assessment of the individual's recent potential HIV exposure and risk behaviours.
    - If the repeat A1 test is positive, the result is reported as HIV-inconclusive. Repeat testing is recommended in 14 days.
- If a pregnant woman has an indeterminate rapid test result, treat her as if she is HIV positive and initiate and continue her on ART until her true HIV status can be established.
- PLHIV already on ART should not receive repeat rapid testing. Viral suppression by ART can lead to significant declines in circulating HIV antibodies yielding a false negative rapid test result.

SECTION 4.5: DOCUMENTATION OF TEST RESULTS

All HIV test results should also be recorded in the HTS Register. Test results (Rapid HIV test, DNA PCR or RNA-based tests), are recorded in the bukana. If available, the Under 5 stamp should be used in the bukana and test results recorded as indicated on the stamp. Test results may also be recorded on the eMTCT stamp where available.

Figure 4.3: Recording HIV status in the Bukana

HTC done: Y or N *Date*:_____*

Type of test (rapid, DNA PCR):
1st rapid test: P or N
2nd rapid test: P or N
3rd rapid test (when indicated): P or N
DNA PCR tests*: P or N or I

Confirmatory re-testing (when indicated)
1st rapid test: P or N
2nd rapid test: P or N
3rd rapid test (when indicated): P or N
DNA PCR tests*: P or N or I

Where:
P = Positive
N = Negative
I = Indeterminate
U = Unknown

*Record the date that DNA PCR test is done and the results can be filled in when they arrive.

CHAPTER 5: HIV CARE AND TREATMENT

INTRODUCTION

This chapter covers HIV Care and Treatment to newly diagnosed PLHIV, PLHIV who are returning to care and treatment, as well as those already enrolled into care and treatment. Topics are grouped into Clinical and Laboratory Evaluation, Prophylaxis, and Care.

Objectives:

- To comprehend the full package of HIV Care and Treatment for PLHIV
- To understand the full range of TPT Options
- To appreciate the addition of HPV vaccine to the immunization schedule
- To differentiate infant prophylaxis between high-risk and low-risk infants

Summary of Recommendations

A thorough clinical evaluation is indicated for all newly diagnosed PLHIV, PLHIV who are returning to HIV care and treatment, as well as those already enrolled into HIV care and treatment.

All PLHIV require TPT prophylaxis as TB is the most common opportunistic infection in Lesotho and is 10 times more likely to develop in PLHIV. TPT options have now been expanded, and PLHIV have more input in the decision making for their own care.

All infants born to women living with HIV who are at high-risk of acquiring HIV should receive dual prophylaxis with daily AZT and NVP for the first 6 weeks of life. For those who are breastfeeding, daily NVP should continue for an extra 6 weeks or until maternal viral suppression.

SECTION 5.1: HIV CARE AND TREATMENT PACKAGE

After a person is infected with HIV, the virus progressively weakens the immune system. Infections that do not occur in individuals with normal immune systems begin to appear and the risk of HIV-related cancers significantly increases as the CD4 count declines. TB is the most common opportunistic infection in Lesotho and is 10 times more likely to develop in HIV-positive persons. Without antiretroviral treatment, HIV infection is nearly uniformly fatal.

Antiretroviral treatment, in combination with comprehensive primary health care, is able to stop further immune destruction and allow for immune recovery through the suppression of HIV replication. People with HIV successfully taking ART have been shown to have life spans comparable to HIV-negative individuals. It is therefore crucial that all people diagnosed with HIV who are ready receive same-day "test and treat" ART initiation. Exceptions exist for those with central nervous system infections such as cryptococcal meningitis or TB meningitis.

After diagnosis of HIV, people living with HIV should be linked to HIV care in order to receive the comprehensive package of HIV services.

Assessments to determine an individual's readiness to start ART should be started immediately upon entry into HIV care.

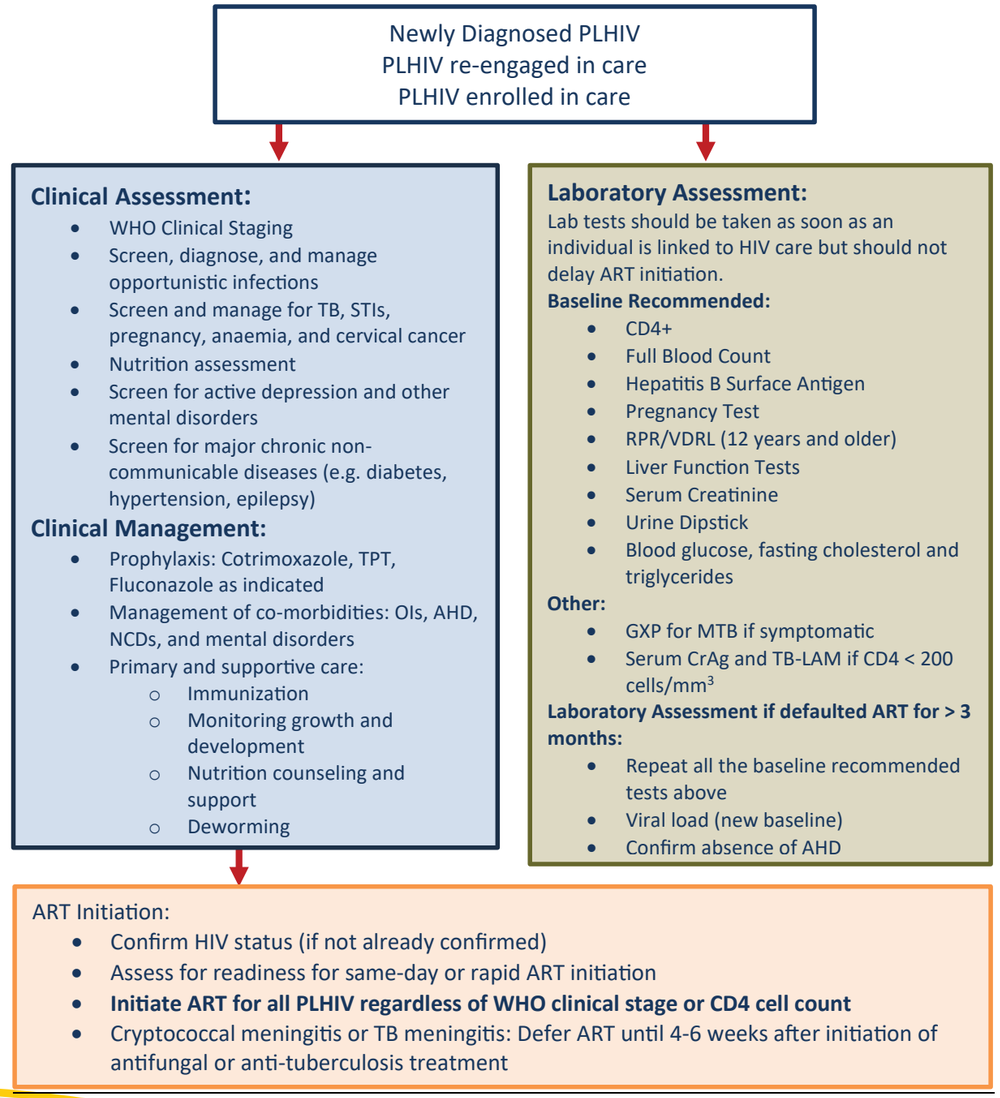
ART should be initiated as soon as a person is ready to commit to treatment, preferably the same day as testing, regardless of the availability of baseline laboratory tests.

People living with HIV should receive the comprehensive package of services described in the following sections after being linked to and enrolled in chronic HIV care. A complete record of care and treatment services provided should be kept in the HIV Care / ART card, e-register and the bukana.

Clinical Evaluation of the HIV Infected Patient

A thorough clinical evaluation must be performed on all newly diagnosed PLHIV, PLHIV already enrolled in care and those returning to care. A comprehensive history and physical examination allow for the accurate assessment of the WHO clinical stage, screening for active TB disease, and diagnosis and management of other opportunistic infections and co-morbid conditions. The baseline laboratory investigations conducted provide critical information that informs choices for ART, co-morbidity management and comprehensive care.

Figure 5.1 Clinical Evaluation of the HIV Infected Patient



WHO Clinical Staging

The baseline HIV clinical stage should be determined based on the findings of the initial history and physical examination (see Annex 13 for WHO clinical staging criteria). Clinical staging should be based on the evaluation of current conditions. Past conditions can be considered for clinical staging only if they are well documented.

Note that the term 'AIDS' refers to the condition in which a person's immune system is severely compromised and the risk for developing serious HIV-related infections is high. Without urgent effective treatment, AIDS will lead to death within six months.

Similarly, Advanced HIV Disease (AHD) is defined in adults, adolescents and children older than five years as CD4 cell count < 200 cells/mm3 or with a current WHO stage 3 or 4 event. All children younger than five years of age presenting with HIV infection not on effective ART are considered as having AHD.
Note children younger than five years of age who have been receiving ART for more than one year and are clinically stable do not have AHD. Additional screening, treatment, and prevention interventions are indicated in those with AHD. Details are provided in Chapter 9.

Table 5.1: WHO Classification of HIV-Associated Clinical Disease

WHO clinical stage	Classification of HIV-associated clinical disease
1	Asymptomatic
2	Mild
3	Advanced
4	Severe

Ongoing clinical assessment is conducted through focused history and physical examination at clinical review visits. Changes in WHO clinical stage may indicate deterioration and a need to re-evaluate management.

How to Stage

Prior to initiating ART, patients remain at their most compromised clinical stage even after treatment for the causative opportunistic infection. For example, a person who has recovered from PCP remains stage 4 even after completion of PCP treatment.

Six months after ART has been initiated, PLHIV should be reassessed and staged with a "T" for treatment. The T stage should reflect their current WHO clinical stage. For example, an adult with chronic herpes simplex infection successfully treated with acyclovir and asymptomatic after 6 months of ART should be restaged from stage 3 to stage T1.

Clients who default ART for greater than 3 months should be assessed as WHO clinical stage without the "T" as they are at high risk for disease progression. Reassess at the time of return to care based upon signs, symptoms and conditions present at the time.

Screening for Opportunistic Infections and Co-morbid Conditions

All opportunistic infections identified during clinical staging should be appropriately treated. A thorough clinical evaluation for opportunistic infections with focused laboratory investigations is crucial to providing proper clinical staging, treatment and prevention measures. Screening and management of non-communicable diseases (NCD) like hypertension, diabetes, etc., should be included in the care package of PLHIV.

Screening for tuberculosis, cryptococcal disease and AHD should be performed at:

- HIV diagnosis
- Detection of high viral load
- Upon returning to HIV services for PLHIV lost to follow-up (28 days or more)

Routine screening for TB, NCDs, mental health, STIs, cervical cancer, and pregnancy are essential components of the HIV care package.

Screening for Tuberculosis

PLHIV have increased susceptibility to TB infection and a greater risk of progression from primary TB infection to active disease and reactivation of latent TB infection. TB continues to be the most common opportunistic infection and number one cause of death among people living with HIV in Lesotho.

Every HIV-positive individual should be actively screened for TB at each clinical encounter using a TB screening tool (see Annex 15). Answering 'yes' to one or more questions on the screening tool indicates presumptive TB disease and appropriate investigations to further examine for TB should be taken. A sputum sample for GeneXpert MTB/RIF testing is the recommended first-line TB diagnostic for all HIV-positive presumptive TB cases (see Annex 14). Clinicians may consider obtaining a CXR as part of the evaluation of PLHIV with presumptive TB disease but CXR should not delay the clinical decision-making process given the rapid progression of TB observed in PLHIV. TB-LAM testing has also been added for those with advanced HIV disease. See Chapter 9 for additional details.

IF ACTIVE TB DISEASE IS IDENTIFIED, INITIATE TB TREATMENT PROMPTLY AND FOR CLIENTS WITH HIV COINFECTION INITIATE ART TREATMENT WITHIN 2 WEEKS

Screening for STIs, Cervical Cancer and Pregnancy

The presence of STIs, such as syphilis, herpes, gonorrhoea, and chlamydia, in either a HIV-positive or HIV-negative person significantly increases the risk of HIV transmission. **Symptomatic screening for STIs and syndromic management for any STI identified should be conducted at every clinical visit for adult and adolescent PLHIV** (see Chapter 9 and the National STI Management Protocols).

Cervical cancer is the most common cancer among Basotho women and is the cause of the most cancer-related deaths in this group. Women living with HIV have six-fold higher risk of precancerous lesions and invasive cervical cancers. Eligible girls should be fully vaccinated with HPV vaccine by 15 years of age based on national guidelines.

All women and sexually active adolescent girls living with HIV should be screened for cervical cancer upon HIV diagnosis and every two years thereafter if initial screening is negative.

Prompt identification of pregnancies among women and adolescent girls living with HIV helps to ensure that optimal care is provided in order to minimize the risk of mother-to-child transmission of HIV. Females of reproductive age should be asked about their menstrual history. Family planning practices, pregnancy intentions, and menstrual history should be discussed at every clinical encounter for women and adolescent girls living with HIV and urine pregnancy testing performed as indicated.

Mental Health Screening

PLHIV are at increased risk for mental health disorders such as depression, anxiety and substance abuse. The PHQ-2 is a simple, two-question screen that can be used to identify individuals with possible depression. The PHQ-9 is a more detailed questionnaire that is used to screen, diagnose, monitor and measure severity of depression. The GAD-7 is a similar easy-to-use tool that can be used to screen for anxiety. More details are included in Chapter 9 and in Annexes 17 and 18.

Baseline Laboratory Investigations

Laboratory investigations enhance clinical assessment, which is the primary tool for evaluating clients both before and after initiation of ART. Laboratory investigations can help inform which ART regimen to choose but are not essential for ART initiation.

The inability to perform laboratory investigations, including CD4 count, should not prevent PLHIV from being initiated on ART if they are otherwise ready to start ART.

The baseline laboratory investigations in Table 5.2 are recommended for all persons newly diagnosed with HIV. Lab tests should be taken as soon as an individual is linked to HIV care but ART can be started before results of lab tests have returned. When lab test results are available, they can be used to guide ARV substitutions required due to contraindications.

Table 5.2: Recommended baseline laboratory investigations for newly diagnosed HIV clients

Laboratory Test	Purpose
$CD4^{+}$	• Assess immunologic HIV stage (see Annex 13) • Determine need for co-trimoxazole prophylaxis • Assess risk for immune reconstitution inflammatory syndrome (IRIS) upon starting ART • **CD4 count below 200 cells/mm^3 is an indication of Advanced HIV Disease.**
TB GeneXpert MTB/RIF	• Diagnosis of TB in PLHIV with a positive TB symptom screen
Alere Determine TB LAM Antigen Rapid Screening	• For the diagnosis of active mycobacterium infection in PLHIV with clinical symptoms of tuberculosis. • Test all clients with CD4 count <200 cells/mm3 or at WHO stage 3 and 4.
Serum cryptococcal antigen	• Screen for asymptomatic cryptococcemia and to gauge the need for fluconazole prophylaxis for adolescents and adults with CD4 count <200 cells/mm^3
VDRL or RPR if 12 years or above	• For diagnosis of syphilis • For pregnant and breastfeeding women, HIV/Syphilis dual testing is recommended at first contract those with unknown HIV or syphilis status
Hepatitis B surface antigen and hepatitis C serology	• Screen for hepatitis co-infections
FBC (haemoglobin if FBC is not available)	• Screen for anaemia • Note: Unexplained anaemia (<8 g/dl), neutropenia (<0.5 x 10^9/l) or chronic thrombocytopaenia (<50 x 10^9/l) are WHO Stage 3
LFTs (ALT if LFTs unavailable)	• Screen for liver disease and assess for contraindications to INH (ALT >5x upper limit of normal)
Serum creatinine and urine dipstick for glucose and protein	• Screen for renal disease and assess for contraindications to TDF (CrCl < 50 ml/min)
Pregnancy test	• Screen for pregnancy • Enrol in PMTCT services if pregnant • Offer voluntary and informed choice family planning services if not pregnant
Blood glucose and fasting cholesterol and triglycerides	• Screen for diabetes and hyperlipidaemia, which can be worsened by LPV/r more than other PIs such as ATV or DRV. • Diagnose and manage NCDs
Cervical Cancer screening HPV testing	• To identify women with cervical lesions • Treat precancerous lesions or refer for management of suspicious lesions

CD4: Immunological Staging

While viral load monitoring is now the preferred method for assessing response to ART, assessing the CD4 count remains important for the clinical management of PLHIV to assess the degree of HIV-related immune suppression, risk for opportunistic infections, and need for co-trimoxazole prophylaxis. CD4 should not be used for determining when to start ART.

The CD4 count, measured in cells/mm3, gives an approximate measure of the strength of one's immune system. The CD4 count declines with HIV disease progression and can be used to predict the risk for developing opportunistic infections. In children younger than five years living with HIV, the CD4 percentage should be used to monitor the immune status instead of the absolute CD4 count because infants' and young children's CD4 counts are higher than adults, adolescents and older children. CD4 counts decline slowly during childhood to reach adult levels around age 5 but the CD4 percentage remains fairly constant throughout childhood into adulthood.

Table 5.3: WHO Classification of HIV Immunodeficiency

Classification Immun Deficiency	< 12 Months (CD4 %)	12-35 Months (CD4 %)	36-59 Months (CD4 %)	≥ 5 Years (CD4 count)	Adolescents & Adults
Not significant	> 35%	> 30%	> 25%	> 500	> 500
Mild	30-35%	25-30%	20-25%	350-499	350-499
Advanced	25-30%	20-25%	15-20%	200-349	200-349
Severe	< 25%, or < 1500 cells/mm^3	< 20%, or < 750 cells/mm^3	< 15%, or < 350 cells/mm^3	< 15%, or < 200 cells/mm^3	< 200 cells/mm^3

The CD4 count and percentage can decline very rapidly in HIV-infected infants. Opportunistic infections can develop at any CD4 count or percentage in this population because of the immaturity of infants' immune systems.

CD4 monitoring may be discontinued for PLHIV established on ART with immune recovery.

PRIMARY AND SUPPORTIVE CARE

People living with HIV should receive a comprehensive package of primary care services.

Table 5.4: Primary Health Care Services for PLHIV

Recommended Service	Target Group
Treatment preparedness and adherence evaluation	PLHIV
Continuous adherence assessment and support	PLHIV
Routine immunizations (including HPV and COVID-19)	PLHIV
Vitamin A and micronutrient supplements	Children
Routine de-worming	Children and adolescents
Monitoring of growth and development	Children and adolescents
Every other year screening for cervical cancer	Women and adolescent girls living with HIV
Family planning counselling and method provision	Adults and adolescents
Condom use counselling and provision	Adults and adolescents
Mental health screening	PLHIV
Substance use disorder screening	Adults and adolescents
Nutritional assessment, counselling and support (see Chapter 9)	PLHIV
Hepatitis B vaccination	• Adolescents and adults with negative HBsAg (now included in childhood immunizations) • Newborns of mothers with chronic Hepatitis B
Safe water supply	PLHIV

Immunizations

Immunizations in HIV-exposed and HIV-infected infants and children follow the standard Lesotho immunization schedule. See notes below for caution in severe immunosuppression.

Table 5.5: Immunization Schedule

Age	Immunizations
Birth	BCG
0-2 weeks	bOPV
6 weeks	Pentavalent vaccine (DPT, Hep B, HiB); bOPV, PCV-13, Rotavirus
10 weeks	Pentavalent vaccine (DPT, Hep B, HiB); bOPV, PCV-13, Rotavirus
14 weeks	Pentavalent vaccine (DPT, Hep B, HiB); bOPV, PCV-13, IPV
9 months	MR (Measles, Rubella)
18 months	MR, DT

Notes

- Children who have or are suspected to have HIV infection but are not yet symptomatic should be given all appropriate vaccines, including BCG and measles.
- BCG and yellow fever vaccines should not be given to a child who has symptomatic HIV infection or who is severely immunodeficient. Virtually all HIV-exposed and HIV-infected infants are asymptomatic at birth and can receive the BCG vaccine at birth.
- Consider giving measles vaccine early at 6 months and again at 9 and 18 months in children with HIV infection. Measles vaccine may be given to a child with symptomatic HIV infection as long as there are no features suggestive of severe immunodeficiency.
- All HIV-positive adults and adolescents who test hepatitis B surface antigen negative should be vaccinated against hepatitis B infection.

Routine Oral Vitamin A Supplementation

The following dosages of vitamin A should be administered to all children every 6 months until age 5.

Age	Dose of Vitamin A
6 months	100,000 Units
12 months to 5 years	200,000 Units

Routine De-worming

Children living with HIV should be de-wormed routinely every 6 months from 1 year until age 12 (HIV-negative children are routinely de-wormed until age 5) using one of the following recommended treatments:

Age	Weight	Albendazole		Mebendazole (alternative)
12-23 months	<10 kg	200 mg once	or	100 mg BD for 3 days or 500 mg once
≥2 years	>10 kg	400 mg once		500 mg once

Nutrition Assessment, Counselling, and Support

The nutritional status of people living with HIV should be assessed as part of the comprehensive care package. Children in particular should be assessed for malnutrition. See Chapter 10 and the National Guidelines for the Integrated Management of Acute Malnutrition for complete details regarding nutritional assessment, counselling, and support recommendations.

EDUCATION AND COUNSELLING

Immediately upon HIV diagnosis, clients should be prepared for ARV initiation through HIV education and counselling and the performance of a psychosocial assessment. These activities will assist future adherence counselling as well as the identification of potential barriers to successful treatment adherence and potential strategies to optimise care and treatment. Key topics to be addressed in initial education and counselling sessions include:

- Establishing a partnership with the client and organizing a care plan
- Screening for substance abuse and mental health issues
- Support for disclosure to partners and family members
- Reinforce self-management, including looking out for key symptoms, avoidance of dangerous habits, such as substance abuse (alcohol, injection drug use, marijuana)
- Importance of preventing HIV transmission to sexual partners (U=U counselling) and children, review of key prevention methods
- Encourage testing of partners and children
- Available community-based programs and support groups/networks

Refer to Chapter 8: Adherence and Disclosure for detailed guidance on ART readiness assessments and ART adherence counselling.

Initial education and counselling sessions should reinforce the importance of preventing HIV transmission and preparation for ARV treatment.

Preventing Transmission of HIV among PLHIV

From a public health perspective, people living with HIV constitute the most important group in terms of HIV prevention. Studies have shown that HIV treatment for PLHIV is the most effective method for preventing HIV transmission in combination with the general prevention strategies detailed below. Change in the risk behaviours of an individual living with HIV can have a greater impact on the transmission of HIV than that of a HIV-negative person. Education and counselling on positive prevention strategies for PLHIV should be implemented at group and individual levels in health facilities and the community. The comprehensive package of services aimed at prevention of HIV transmission for people living with HIV is referred to as **Positive Health, Dignity and Prevention** (PHDP) and includes:

- Encourage consistent condom use through education and condom and lubricant provision
- Reduction in high risk behaviours, including unprotected sex and multiple sexual partners
- Routine screening and treatment of STIs
- Mental health and substance abuse screening with referral to appropriate services for individuals, including Blue Cross and Alcoholic Anonymous groups
- Support for disclosure of HIV status to partners and partner testing with appropriate referral to prevention services for HIV-negative partners, such as PrEP and VMMC (see Chapter 2)
- Continuous adherence monitoring and support for PLHIV on ART
- Prompt identification of pregnancy and provision of family planning services to PLHIV not currently desiring pregnancy
- Referral to and from relevant community-based programs for non-clinical services

SECTION 5.2: CO-TRIMOXAZOLE PROPHYLAXIS

Co-trimoxazole (CTX) prophylaxis is an inexpensive and cost-effective way to reduce morbidity and mortality among people living with HIV. It protects against:

- Pneumocystis jirovecii pneumonia (PCP)
- Toxoplasmosis
- Diarrhoea caused by Isospora belli and Cyclospora species
- Certain bacterial infections, including bacterial pneumonia and urinary tract infections

Co-trimoxazole prophylaxis is recommended for children under 5 years in the following circumstances:

- All HIV-exposed infants starting at 4-6 weeks of age. CTX should be continued until:
  - HIV infection has definitively been excluded in the child and
  - The infant is no longer at risk of acquiring HIV through breastfeeding
- All children below 5 years living with HIV regardless of CD4 or HIV clinical stage

Co-trimoxazole prophylaxis is recommended for HIV-positive adults, adolescents, and children above 5 years in the following circumstances:

- All those in WHO clinical stage 3 or 4, including those with TB co-infection
- Those in clinical stage 1 and 2 where the CD4 count is ≤ 350 cells/mm3.
- All those in clinical stages 2, 3 and 4 where a recent CD4 count is not available

Table 5.6: Indications for Co-Trimoxazole Prophylaxis in Adults, Adolescents, And Children >5 Years

WHO Clinical Stage	CD4 is available	CD4 is not available
4	Daily CTX	
3	Daily CTX	
2	Daily CTX if CD4 < 350	Daily CTX
1	Daily CTX if CD4 < 350	Do not give CTX

Table 5.7: Dosages for Co-Trimoxazole Prophylaxis

Age	Weight	Suspension (200/40 mg/5 ml)	Single Strength tablet (400/80 mg)	Double Strength tablet (800/160 mg)
< 6 Months	3-5.9 kg	2.5 ml	¼ tablet	--
6 mo- 5 yrs	6-13.9 kg	5 ml	½ tablet	--
6-14 yrs	14-24.9 kg	-	1 tablet	½ tablet
>14 yrs	> 25 kg	--	2 tablets	1 tablet

Co-trimoxazole should be avoided in the following situations:

- History of a severe rash with prior use of co-trimoxazole (or another 'sulfa' drug)
- Severe renal disease
- Severe hepatic disease

Clients who are unable to take co-trimoxazole should be offered dapsone 100 mg daily (children: 2mg/kg daily) to help prevent Pneumocystis pneumonia (PCP). Clients with mild (Grade 1 or 2) adverse effects can be desensitized in a monitored setting. Desensitization should never be attempted in anyone who developed Stevens Johnson Syndrome, anaphylaxis, or in children.

When to Discontinue Co-trimoxazole Prophylaxis

Co-trimoxazole prophylaxis can be discontinued in adults, adolescents and children > 5 years who:

- Are established on ART and have one CD4 count ≥ 350 cells/mm3
- TB co-infected clients after the completion of tuberculosis treatment if their CD4 is ≥ 350

cells/mm3 and the client is restaged as WHO T Stage 1 or 2.
- Those with previous PCP infection if their CD4 is ≥ 350 cells/mm3 and the client is restaged as WHO T Stage 1 or 2.

SECTION 5.3: TUBERCULOSIS PREVENTIVE THERAPY (TPT)

Lesotho has the highest incidence of tuberculosis globally. Tuberculosis preventive therapy reduces the risk of developing active TB disease in PLHIV by treating latent TB infection . The risk of developing TB is particularly high during the first six months after ART initiation. Given the high prevalence of latent TB infection in Lesotho, all PLHIV above 1 year of age who has no signs or symptoms of active TB should be started on TPT as soon as possible. TPT is integrated with HIV services delivered at ART clinics, RMNCH clinics, Adolescent Corners, Men's Clinics, and other service delivery points.

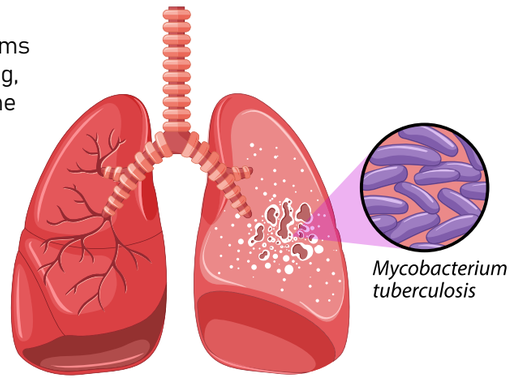
PLHIV should be screened for TB upon HIV diagnosis and at every clinical encounter using a TB screening tool (see Annex 15). Individuals who screen negative for symptoms of active TB should be initiated on TPT regardless of CD4 count, WHO clinical stage, and ART status. TPT and ART can be safely initiated at the same time in people living with HIV. Isoniazid is the preferred TPT option in pregnant and breastfeeding women.

Additional indications for TPT are:

- Children living with HIV aged 0-14 years and exposed to TB through household contacts without signs or symptoms of active TB, including infants <1 year
- After the completion of TB treatment for all TB/HIV co-infected persons
- HIV-negative children 0-14 years exposed to TB through household contacts without signs or symptoms of active TB, including infants <1 year
- All Health Care Workers in whom active TB disease has been excluded
- All clients with silicosis in whom active TB disease has been excluded

Clients should not be offered TPT if they report:

- Acute or chronic liver disease. Signs and symptoms suggestive of active hepatitis are nausea, vomiting, right upper quadrant pain, jaundice, and dark urine
- Regular and heavy alcohol consumption
- Symptoms of severe peripheral neuropathy
- History of epilepsy or convulsions
- Kidney failure
- Known hypersensitivity to any TPT medication



The standard options for TPT regimen in Lesotho are:

- **Rifapentine and Isoniazid Preventive Therapy**
  - Weekly dosing for 12 doses = 3HP
  - Not for use in children below 2 years of age
  - Not for use in pregnant or breastfeeding women or women who are planning to become pregnant in the next three months
  - Not for use in those on PIs or NVP
  - For children on DTG – double the dose of DTG by increasing to twice daily dosing
  - Supplement with pyridoxine (Vitamin B6) 12.5-25 mg daily x 3 months
  - Higher dosages of INH are used in this regimen as follows:
  - **Adults:** 15mg/kg/weekly (max 900mg) x 3 months
  - **Children:** ≥12 years 15mg/kg/week (max 900mg) x 3 months
  - **Children: 2** – 11 years 25mg/kg/week (max 900mg) x 3 months

World Health Organization, 2020. WHO Consolidated Guidelines on Tuberculosis: Tuberculosis Prevntive Treatment: Module 1 – Prevention.

Table 5.8 Pediatric (2-14 years) Dosing for 3HP

	If using individual formulations		If using FDC
Weight	**Isoniazid (100mg)**	**Rifapentine (150mg)**	**HP 150/150mg**
10-15 kg	3	2	2
16-23 kg	5	3	3
24-30 kg	6	4	4
>30 kg	7	5	5

Table 5.9 Adolescent and Adult (>14 years) Dosing for 3HP

	If using individual formulations		If using FDC
Weight	**Isoniazid (300mg)**	**Rifapentine (150mg)**	**HP 300/300mg**
30 kg and up	3	6	3

- **Rifampicin and Isoniazid Preventive Therapy**
  - Daily dosing for 3 months = 3HR
  - **Recommended for children < 2 years for whom rifapentine is not recommended**
  - Supplement with pyridoxine (vitamin B6) 12.5-25 mg daily x 3 months
  - For those on DTG – double the dose of DTG by increasing to twice daily dosing
  - For those on LPV/r tablets, increase ritonavir to reach Lopinavir to ritonavir ratio 1:1
  - **Not for use in those on DRV/r. Coadministration of darunavir and rifampicin is contraindicated.** Use another TPT option or change DRV/r to LPV/r if feasible.
  - **Not for use in those on ATV/r. Coadministration of atazanavir and rifampicin is contraindicated.** Use another TPT option or change ATV/r to LPV/r if feasible.

Table 5.10 Weight-based dosing of RH

Weight	RH 75/50mg	RH 150/75mg
2-3.9 kg	½ tablet	
4-6.9 kg	1 tablet	
8-11.9kg	2 tablets	
12-15.9 kg	3 tablets	
16-24.9 kg	4 tablets	
25-40 kg		2 tablets
40-55 kg		3 tablets
55-70 kg		4 tablets
>70 kg		5 tablets

- **Isoniazid Preventive Therapy (IPT)**
  - Daily dosing for six months
  - **Adults:** 300 mg/day x 6 months
  - **Children:** 10 mg/kg/day (max 300 mg/day) x 6 months
  - Supplement with Pyridoxine (vitamin B6) 12.5-25 mg daily x 6 months

Table 5.11: Weight-Based Dosing for Isoniazid

Weight (kg)	INH 100mg	Dose given (mg)
<5	½ Tablet	50
5.1 - 9.9	1 Tablet	100
10 – 13.9	1 ½ Tablets	150
14 – 19.9	2 Tablets	200
20 – 24.9	2 ½ Tablets	250
>25	3 Tablets or INH 300mg x 1 tablet	300

The absence of baseline liver function tests should not preclude or delay the initiation of TPT. If liver function test (LFTs) results are available, the most recent LFT results should be reviewed. Table 4.5 details the recommended course of action for TPT initiation based on the baseline LFT results.

Table 5.12: Interpretation of LFT Results in Context of Initiating TPT

Baseline Liver Function Tests	Course of action
Normal up to 2x the upper limit of normal (ULN) in the absence of symptoms of hepatitis	Initiate TPT, no further LFT testing required
2-5x the ULN in the absence of symptoms of hepatitis	Initiate TPT and check ALT monthly
Greater than 5x the ULN or symptoms of hepatitis	Do not initiate TPT until LFTs normalize

TB preventive therapy is key to reducing the incidence of TB among PLHIV. If TPT is begun at ART initiation, TPT should be completed prior to entering a differentiated ART delivery model. However, PLHIV established on ART will sometimes need TPT. Medication supply should align with ART among those established on ART, including MMD.

Clients on TPT should be educated on possible side-effects needing sooner return and monitored through minimum of clinical assessments after one month and at completion of TPT. Include:

- Screening for symptoms and signs of active TB
- Screening for possible side-effects (e.g. rash, peripheral neuropathy, convulsions, or any signs/ symptoms of hepatitis including nausea and vomiting, jaundice, right upper quadrant pain and dark urine).
- Adherence to TPT.

If a client on TPT develops symptoms of active TB:

- Discontinue TPT immediately
- Investigate for active TB disease
  - Send sputum specimen for GeneXpert MTB/RIF and sputum for culture with DST to evaluate for resistance
  - Refer, if needed, to ensure that investigations are completed
- If active TB is confirmed, begin treatment for drug-susceptible TB.
- Perform other laboratory investigations as clinically indicated.

SECTION 5.4: WHEN TO START ANTIRETROVIRAL THERAPY

ALL PLHIV ARE ELIGIBLE TO INITIATE ANTIRETROVIRAL THERAPY AS SOON AS POSSIBLE AFTER HIV DIAGNOSIS.

Because antiretroviral treatment is life-long and optimal adherence is crucial to treatment success, it is important to assess every individual's (or caregiver's) readiness to start ART. **The initial ART readiness assessment should be conducted as soon as possible, even on the day of HIV diagnosis.** All PLHIV should receive 1-3 counselling sessions around the time of ART initiation. **A client's (or caregiver's) level of understanding and readiness to start ART will determine the number of adherence sessions to be done before initiation of ART. Initiation of ART on the same day of HIV diagnosis is recommended for people who demonstrate clear readiness to begin ART.**

SECTION 5.5: ADULTS AND CHILDREN NOT YET INITIATED ON ART OR WHO DEFAULT TREATMENT

There are some people living with HIV who will not be ready to commit to initiating on lifelong ART during initial counselling sessions and other individuals who start ART and then default from treatment. Some clients have an opportunistic infection, such as TB or cryptococcal meningitis, which precludes them from starting ART immediately. Those individuals who have not yet initiated ART or have defaulted should continue to receive the complete package of HIV care outlined in this chapter in order to optimize their health while preparing to start or restart ART.

PLHIV not yet initiated on ART should have regular clinical reviews, adherence readiness assessments and ART preparation sessions so that ART is initiated as soon as a client is ready to begin treatment.

It is recommended that people living with HIV who are not yet on ART should be reviewed at least every 3 months. This is particularly important for all HIV-infected children not on ART and adults and adolescents with advanced HIV disease because their clinical status can deteriorate rapidly. The **CD4 count should be monitored every 6 months** to evaluate disease progression and the need for co-trimoxazole prophylaxis for these individuals.

SECTION 5.6: CLINICAL MANAGEMENT OF CLIENTS PRESENTING WITH ADVANCED HIV DISEASE (AHD)

Many people living with HIV are diagnosed at advanced stages of HIV or have been lost from HIV care and/ or ART and re-present with advanced HIV. Those with AHD require more intensive care and support in order to reduce the high rates of HIV morbidity and mortality seen in this group compared to asymptomatic PLHIV presenting with higher CD4s.

PLHIV with AHD should receive a package of care that includes:

- Screening for serious illness needing immediate admission or referral
- Performance of TB LAM & GeneXpert, CrAg screening
- Screening for meningitis
- Screening for other OIs such as Kaposi's sarcoma lesions, CMV retinitis and disseminated mycobacterium infections
- Screen for severe acute malnutrition, especially in children
- Urgent management of any identified infections and conditions
- Rapid initiation on ART (unless contraindicated)
- Prevent infections with co-trimoxazole prophylaxis, TPT, pre-emptive fluconazole
- Intensive follow-up with more frequent clinical visits to monitor response and for signs of IRIS and to rescreen for OIs

There should be a low threshold for admitting clients presenting with advanced HIV to the hospital for stabilization, nutritional support, and observation during the initial stages of ART and any needed OI treatments. See the 2020 Lesotho Guidelines on Approach to the Management of Advanced HIV Disease for further guidance.

SECTION 5.7: CARE OF THE HIV-EXPOSED INFANT

Most infants with HIV infection are asymptomatic at birth. Without identification and treatment nearly 50% of HIV-infected infants will die before the age of two years. It is therefore essential that infants exposed to HIV are placed on appropriate prophylaxis and monitored closely until their final HIV status is confirmed. All efforts should be made to ensure that HIV-exposed infants are not lost to follow-up. Table 5.13 summarizes the schedule for HIV-exposed infant care. Key highlights are:

- Initiation of infant NVP prophylaxis for low-risk infants from birth to 6 weeks
- Initiation of enhanced infant prophylaxis with AZT and NVP for high-risk infants from birth to 12 weeks
- Initiation of co-trimoxazole prophylaxis at 4-6 weeks of life until infant is confirmed to be definitively HIV-negative
- Monthly clinical assessments to monitor growth and development and ongoing HIV exposure through breastfeeding, and to evaluate for signs or symptoms of HIV disease and other illnesses
- Provision of education and counselling on recommended Infant and Young Child Feeding Practices (see Chapter 10)
- DNA PCR testing at 6 weeks of life for low-risk HIV-exposed infants
- DNA PCR testing at birth and 10-14 weeks for high-risk infants
- Prompt initiation of ART for all infants with a positive DNA PCR
- DNA PCR testing at 9 months of age, regardless of feeding status, unless last DNA PCR was positive
- For those with cessation of breastfeeding prior to 18 months, repeat DNA PCR 3 months post cessation of breastfeeding.
- Rapid HIV testing at 18 months of age, unless last HIV DNA PCR was positive
- Infants who continue breastfeeding beyond 18 months of age will have 3 monthly rapid tests if mother is not virally suppressed and 6 monthly if mother is virally suppressed until 3 month post cessation of breastfeeding serology has been performed

Table 5.13: Schedule for Monitoring Visits for HIV Exposed Infants

Age	Services to be Provided
7 days	Clinical monitoring (thorough history and physical exam) Infant feeding counselling and support Appropriate ARV prophylaxis - Daily NVP for low-risk infants - Daily AZT and NVP for high-risk infants Reinforce adherence to prophylaxis Follow up/send DNA PCR for high- risk infants if birth DNA PCR not performed Track infants with positive results immediately and start ART
6 weeks	Clinical monitoring (thorough history and physical exam) Infant feeding counselling and support Provide immunizations Monitor growth and development Initiate co-trimoxazole prophylaxis Perform 1st DNA PCR for low-risk infants Stop infant ARV prophylaxis (daily NVP) for low-risk babies Review results for high-risk infants to ensure testing performed. Track infants with positive results immediately and start ART. Continue NVP prophylaxis for high-risk infants.
10 weeks	Clinical monitoring (thorough history and physical exam) Infant feeding counselling and support Monitor growth and development Provide immunizations Continue co-trimoxazole prophylaxis Provide DNA PCR results to the caregiver, if not done already. If positive, initiate ART and send confirmatory DNA PCR. Send DNA PCR for high-risk infants (align with postnatal maternal viral load testing)
14 weeks	Clinical monitoring (thorough history and physical exam) Infant feeding counselling and support Monitor growth and development Provide immunizations Continue co-trimoxazole prophylaxis Send DNA PCR for high-risk infants (align with postnatal maternal viral load testing) Stop NVP for high-risk infants if maternal viral load suppressed
19 weeks	Clinical monitoring (thorough history and physical exam) Infant feeding counselling and support Monitor growth and development Provide immunizations if not up to date Continue co-trimoxazole prophylaxis
24 weeks (6 months)	Clinical monitoring (thorough history and physical exam) Infant feeding counselling and support on introduction of complimentary foods Monitor growth and development Provide immunizations if not up to date Give vitamin A supplementation Continue co-trimoxazole prophylaxis Assess breastfeeding status. Perform DNA PCR if 3 months post cessation of breastfeeding.
7 months	Clinical monitoring (thorough history and physical exam) Infant feeding counselling and support Monitor growth and development Provide immunizations if not up to date Continue co-trimoxazole prophylaxis NB: For infants with WHZ greater than -1 and no developmental delays, offer follow-up after two months (at 9 months of age)

9 months	▪ **Clinical monitoring (thorough history and physical exam)** ▪ **Infant feeding counselling and support** ▪ **Monitor growth and development** ▪ **Provide immunizations** ▪ **Continue co-trimoxazole prophylaxis** ▪ **DNA PCR test for all HIV-exposed infants** ▪ **NB: For infants with WHZ greater than -1 and no developmental delays, offer 2-3 month follow-up**
12 months	▪ Clinical monitoring (thorough history and physical exam) ▪ Infant feeding counselling and support ▪ Monitor growth and development ▪ Continue co-trimoxazole prophylaxis if ongoing exposure through breastfeeding ▪ Provide vitamin A and deworming ▪ Assess breastfeeding status. Perform DNA PCR if 3 months post cessation of breastfeeding.
15 months	▪ Clinical monitoring (thorough history and physical exam) ▪ Infant feeding counselling and support ▪ Monitor growth and development ▪ Continue co-trimoxazole prophylaxis if ongoing exposure through breastfeeding ▪ Assess breastfeeding status. Perform DNA PCR if 3 months post cessation of breastfeeding.
18 months	▪ Clinical monitoring (thorough history and physical exam) ▪ Infant feeding counselling and support ▪ Monitor growth and development ▪ Provide immunizations, vitamin A supplementation and deworming ▪ Continue co-trimoxazole prophylaxis if ongoing exposure through breastfeeding ▪ Rapid HIV test unless infant known to be HIV infected
>18 months and still breastfeeding	▪ Clinical monitoring (thorough history and physical exam) ▪ Infant feeding counselling and support ▪ Monitor growth and development ▪ Provide vitamin A supplementation and deworming every six months ▪ HIV rapid test every three months if mother is not virally suppressed ▪ HIV rapid test every six months if mother is virally suppressed ▪ Continue co-trimoxazole until definitive HIV negative status

Infant ARV Prophylaxis

Low risk HIV-exposed infants, those born to a mother on ART > 12 weeks with third trimester viral load < 1000 cps/ml, should be started on ARV prophylaxis with nevirapine at birth to 6 weeks of age.

High risk HIV-exposed infants, all other HIV exposed infants such as those with recent maternal seroconversion to HIV, < 12 weeks of maternal ART and high maternal VL in the third trimester or no VL in the third trimester, will receive enhanced infant prophylaxis with both AZT and NVP from birth to 6 weeks and ongoing NVP from 6 weeks – 12 weeks or maternal viral suppression.

- If the mother was diagnosed with HIV during the postpartum and/or breastfeeding period, give both AZT and NVP prophylaxis from time of maternal diagnosis for 6 weeks with ongoing use of NVP for additional 6 weeks.
- If the mother refuses to start or has defaulted ART, give both AZT and NVP prophylaxis for 6 weeks with ongoing use of NVP after 6 weeks until the mother has initiated/restarted ART and been taking ARVs for 12 weeks or if mother stops breastfeeding before 12 weeks on ART give NVP until 1 week after breastfeeding is stopped.

Table 5.14: ARV Prophylaxis Recommendations Based on Risk of HIV Infection

Infant risk	Prophylaxis
Low risk infant Mother as on ART for ≥12 weeks prior to delivery Mother VL<1000 copies in 3rd trimester	Give infant NVP syrup until the infant is 6 weeks old for both breastfeeding and non-breastfeeding infants
High risk infant Mother was not started on ART until <12 weeks before delivery or in early postpartum period Mother VL of ≥ 1000c/ml in 3rd trimester or no VL result Mother refuses to start ART, has defaulted ART, or has poor adherence on ART Mother seroconverts during breastfeeding period	***Breastfeeding*** • Give infant AZT syrup + NVP syrup for 6 weeks then additional 6 weeks of NVP syrup alone • Continue NVP prophylaxis until maternal viral load is suppressed ***Non-breastfeeding*** AZT syrup + NVP syrup for 6 weeks

Table 5.15 Recommended AZT prophylaxis for exposed Infants by gestational age at birth

Gestational age at birth	Weight	Zidovudine Syrup (10 mg/ml)
≥35 weeks gestation	< 2kg	4 mg/kg/dose twice daily
	2-3 kg	1 ml twice daily
	3-4 kg	1.5 ml twice daily
	4-5 kg	2 ml twice daily
≥30 weeks - < 35 weeks		
Birth to 2 weeks		2 mg/kg/dose twice daily
2 weeks to 6 weeks		3 mg/kg/dose twice daily
< 30 weeks		
Birth to 4 weeks		2 mg/kg/dose twice daily
4 weeks to 6 weeks		3 mg/kg/dose twice daily

* For infants needing to start AZT prophylaxis after 6 weeks of age, use the ART dosing chart.

Table 5.16: Nevirapine prophylaxis dosing

	Age	Weight	NVP 10mg/ml
Term infants (Gestational age ≥ 37 weeks)	Birth to 2 weeks	< 2 kg	2 mg/kg daily
	2 weeks to 6 weeks		4 mg/kg daily
	Birth to 6 weeks	2-2.499 kg	1 ml daily
	Birth to 6 weeks	>2.5 kg	1.5 ml daily
	> 6 weeks to 6 months	Any weight*	2 ml daily
	> 6 months to 9 months		3 ml daily
	> 9 months until breastfeeding ends		4 ml daily
Preterm babies (Gestational age < 37 weeks)	Birth to 6 weeks	1-1.8 kg	0.3 ml daily
	Birth to 6 weeks	1.8-2 kg	0.5 ml daily
	Birth to 6 weeks	>2 kgs	1 ml daily
	> 6 weeks to 6 months	Any weight*	2 ml daily
	> 6 months to 9 months		3 ml daily
	> 9 months until breastfeeding ends		4 ml daily

Identifying Infants with Signs and Symptoms of HIV Infection

Infants may be HIV-infected but completely asymptomatic. More commonly, they present with recurrent common infections. HIV-exposed infants should be assessed monthly and the criteria for presumptive diagnosis of severe HIV disease should be used to initiate ART in sick HIV-exposed infants awaiting DNA PCR results.

WHO July 2018 Technical Brief on HIV Diagnosis and ARV use in HIV-Exposed Infants: A Programmatic Update. Dosing information used from clinicalinfo.hiv.gov/en/guidelines/pediatric-arv/zidovudine. Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection https://apps.who.int/iris/bitstream/handle/10665/273155/WHO-CDS-HIV-18.17-eng.pdf?ua=1

CHAPTER 6: ANTIRETROVIRAL TREATMENT REGIMENS

INTRODUCTION

This chapter covers the first line, second line and third line options for PLHIV living in Lesotho. DTG based ART regimes are now the preferred ART regimen. This chapter also includes the plan for transition of clients not yet on DTG to a DTG-based regimen.

Objectives:

- To know the preferred first line ART regimen for children, adolescents and adults
- To understand the science that supports ongoing use of once-daily NRTIs in 2nd line regimens
- To know when genotypic resistance testing is indicated
- To select an appropriate ART regimen based on drug-drug interactions

Summary of Recommendations:

DTG-based HIV treatment leads to better outcomes for PLHIV of all ages, including children. All PLHIV over 4 weeks of age and over 3 kg are to be initiated on a DTG-based 1st-line ART regimen. Optimal ART regimes should maintain clients with viral loads < 50 cps/ml.

2nd and 3rd-line ART should be guided by genetic resistance testing. However, DTG and PI's have high genetic barriers to resistance. Individuals with high viral loads within two years of starting DTG or PI-based therapies are unlikely to have treatment failure due to resistance. Enhanced adherence counselling and adherence support form the basis of management of viremia. Where genetic resistance testing is not available, an empiric switch from DTG to PI should be undertaken with maintenance of the NRTI backbone. This recommendation is based on science from the ERNEST study. ATV/r is the preferred PI due to lower risks of lipodystrophy and hyperlipidaemia as well as lower pill burden and once daily dosing across age and weight bands.

Both DTG and PIs interact with anti-tuberculosis drugs so appropriate adjustments in ART dosing are needed. Other key drug-drug interactions with DTG include metformin and anti-convulsant drugs.

Guidance has been provided to standardize ART dosing for premature and low birth weight infants needing ART. Consultation with Pediatric HIV Specialists is strongly encouraged to properly manage these complex clients.

SECTION 6.1: GENERAL PRINCIPLES OF ANTIRETROVIRAL THERAPY

To ensure optimization of treatment for all people living with HIV (children, adolescents and adults), the selection of an antiretroviral therapy regimen should take into consideration efficacy, safety, simplification of dosing and administration, harmonization across populations and cost. In addition, selecting the antiretroviral drugs needed for infants and young children must also consider the formulations that are appropriate for different developmental stages and timelines for their availability in-country.

Three antiretroviral drugs from two different classes are given together in order to effectively treat HIV infection because of HIV's propensity to develop resistance. There are four classes of ARVs used in Lesotho – nucleoside reverse transcriptase inhibitors (NRTI), non-nucleoside reverse transcriptase inhibitors (NNRTI), boosted protease inhibitors (PI) and integrase strand transfer inhibitors (INSTI). The classes are based upon mechanism of action and which of the primary HIV proteins they inhibit – reverse transcriptase, integrase or protease. PIs are boosted with ritonavir (/r).

Table 6.1 ARVs in Lesotho (Current and Historical)

NRTI	NNRTI	PI	INSTI
TDF – tenofovir ABC – abacavir AZT – zidovudine 3TC – lamivudine *d4T – stavudine* *ddI – didanosine*	NVP – nevirapine *EFV – efavirenz* ETV – etravirine	LPV – lopinavir ATV – atazanavir DRV – darunavir RTV – ritonavir Used as pharmacokinetic booster with other PIs	RAL – raltegravir DTG – dolutegravir
ARVs in italics were used historically. They have either been completely phased out or reserved for special populations only.			

The goals of antiretroviral therapy (ART) are:

- Maximal and durable suppression of HIV replication
- Restoration and preservation of immune function
- Reduction in HIV-related morbidity and mortality
- Improvement in quality of life and prolonged survival
- Prevention of mother-to-child transmission of HIV
- Accelerated growth and normalization of development for children
- Reduction of transmission of HIV from infected to uninfected individuals

SECTION 6.2: FIRST-LINE ART

In treatment-naïve adults, adolescents, and children ≥ 4 weeks and ≥3 kg, the first-line ART regimen should consist of two nucleoside reverse transcriptase inhibitors (NRTIs) plus Dolutegravir (DTG), an integrase strand transfer inhibitor (INSTI). DTG-based HIV treatment leads to better outcomes for all age groups of people living with HIV, including children. DTG is less likely to be affected by drug resistance and achieves viral load suppression sooner; child-friendly dispersible tablets improve adherence due to lower pill burden, once-daily dosing and easier administration. These factors help children achieve and maintain viral load suppression, the gold standard for measuring the effectiveness of HIV treatment. Children, adolescents and adults on 1st-line protease inhibitor (PI) based ART regimens will also be transitioned to DTG.

For treatment-naïve infants < 4 weeks old or < 3kg, a Raltegravir-based regimen is the preferred first-line ART regimen, followed by switch to DTG-based regimen when the infant is ≥ 4 weeks and ≥3 kg.

Table 6.2: Recommended first-line ART regimens

First-line ART	Preferred 1st line regimens	Alternative 1st line regimens
Adolescents and Adults ≥35 kg (including pregnant and breastfeeding women)	TDF + 3TC + DTG	ABC + 3TC + DTG AZT + 3TC + DTG TDF + 3TC + ATV/r or LPV/r
Children (≥ 4 weeks and ≥3 kg) and Adolescents <35 kg	ABC + 3TC + DTG	ABC+ 3TC + DTG AZT + 3TC + LPV/r or ATV/r
Infants <4 weeks and < 3kg	AZT + 3TC + Ral	AZT + 3TC + NVP

Adolescents and Adults

- First-line ART for adults and adolescents should consist of two NRTIs plus DTG
- TDF + 3TC + DTG as a fixed-dose combination is recommended given its potency and its favourable side effect profile. **Adolescents on ABC/3TC + DTG should transition to TDF/3TC/DTG as soon as their weight is ≥35kg.**
- If TDF + 3TC + DTG is contraindicated, one of the following ART regimens is recommended:
  - ABC + 3TC + DTG
  - AZT + 3TC + DTG
  - TDF + 3TC + EFV
  - TDF + 3TC + ATV/r or LPV/r
- If a client develops a severe adverse reaction while taking DTG (e.g. Stevens Johnson Syndrome or psychosis) or has an absolute contraindication to DTG, use a PI-based regimen with ATV/r or LPV/r
- PLHIV with hepatitis B co-infection should be given TDF/3TC to treat their hepatitis B infection. Consult an expert clinician if there are contraindications to TDF.
- Pregnant women living with HIV will be offered ART using a woman-centred approach. DTG is recommended as research has shown it to be as safe as EFV and more effective than NNRTI-based regimens in preventing MTCT, sexual transmission, and keeping mothers alive.

Children

- Dosing of all ARVs in children is based upon weight. Refer to Annex 4 for details.
- ABC + 3TC is the preferred NRTI backbone for all children ≥ 4 weeks and weighing 3 -34.9 kg
  - o AZT + 3TC is the alternative NRTI backbone in the case of serious adverse events to ABC, such as abacavir hypersensitivity syndrome
- ABC + 3TC + DTG is the preferred first-line ART regimen for children living with HIV
- If a child develops a severe adverse reaction while taking DTG (e.g. Stevens Johnson Syndrome or psychosis) or has an absolute contraindication to DTG, use a PI-based regimen with ATV/r or LPV/r
- AZT + 3TC + Ral is the preferred first-line ART regimen for HIV-infected infants < 4 weeks or weighing < 3 kg. Switch to ABC/3TC + DTG when the infant is >4 weeks and >3 kg.
- AZT + 3TC + NVP is the alternative recommended 1st-line regimen for HIV-infected infants < 4 weeks or weighing < 3 kg in the case of unavailability or contraindication to Raltegravir

SECTION 6.3: SECOND-LINE ART

The most common reason for HIV treatment failure is poor adherence to ART. Clients who fail 1st-line antiretroviral treatment are switched to 2nd-line ART after any adherence issues that are present are identified and adequately addressed. Switching to 2nd-line ART regimens will not fix ongoing adherence issues. Multiple mutations are required to develop resistance to PIs and DTG; high viral loads within two years of initiation on PI or DTG-based regimens is unlikely to be due to resistance.

Introducing new classes of medications are important when constructing 2nd-line regimens. Obtaining a client's complete antiretroviral treatment history is helpful when selecting an appropriate regimen that will maximize the potential of viral suppression. The ERNEST trial and the NADIA trial provide evidence supporting the use of recycled NRTIs with both PI or DTG-based regimens which allow PLHIV to benefit from once-daily dosing. Although previous recommendations emphasized the importance of introducing new NRTI backbones, the potency of DTG and PIs and in-vivo activity demonstrated by the above referenced clinical trials allow for greater flexibility without compromising viral suppression.

Hakim, J. G., Thompson, J., Kityo, C., et. al. & Europe Africa Research Network for Evaluation of Second-line Therapy (EARNEST) Trial Team (2018). Lopinavir plus nucleoside reverse-transcriptase inhibitors, lopinavir plus raltegravir, or lopinavir monotherapy for second-line treatment of HIV (EARNEST): 144-week follow-up results from a randomised controlled trial. The Lancet. Infectious diseases, 18(1), 47–57. https://doi.org/10.1016/S1473-3099(17)30630-8

Paton, N. I., Musaazi, J., Kityo, C., et. al. & NADIA Trial Team (2021). Dolutegravir or Darunavir in Combination with Zidovudine or Tenofovir to Treat HIV. The New England Journal of Medicine, 385(4), 330–341. https://doi.org/10.1056/NEJMoa2101609

Table 6.3: Recommended Second-line ART regimens

Age group	Failed 1st-line ART regimen*	Recommended 2nd-line ART regimen
Adults and adolescents ≥35kg	TDF/3TC + LPV/r or ATV/r	TDF/3TC + DTG If contraindication to TDF - ABC/3TC + DTG
	ABC/3TC + LPV/r or ATV/r	
	AZT/3TC+ LPV/r or ATV/r	
	TDF/3TC + DTG	TDF/3TC + ATV/r or LPV/r If contraindication to TDF - ABC/3TC + ATV/r or LPV/r
	ABC/3TC + DTG	
	AZT/3TC + DTG	
Children and adolescents <35kg	ABC/3TC + LPV/r or ATV/r	ABC/3TC + DTG If contraindication to ABC - AZT/3TC + DTG
	AZT/3TC+ LPV/r or ATV/r	
	ABC/3TC + DTG	ABC/3TC + LPV/r or ATV/r If contraindication to ABC - AZT/3TC + LPV/r or ATV/r
	AZT/3TC + DTG	

*PLHIV currently (2021) on PI-based 2nd-line therapy are eligible for transition to DTG-based regimens. See Section 6.7 for details.
**Change AZT/3TC to TDF/3TC once 35kg if no contraindications to TDF.

- PLHIV with treatment failure needing a switch to 2nd-line therapy are to be presented to an ART Advisory Committee (AAC) for review. Approval will be provided after review of clinical histories, adherence assessment, and laboratory investigations.
- 2nd-line regimens will consist of an NRTI backbone and either DTG or a boosted PI.
  - Those failing a PI-based 1st-line regimen will be switched to DTG.
  - Those failing a DTG-based 1st-line regimen will be switched to PI.
  - NRTI backbones will primarily consist of TDF for those >35kg and ABC for those <35kg as supported by ERNEST and NADIA trials.
    - Modification of NRTI backbone may be needed for individuals with persistent detectable viral load six months after switch.
- Heat-stable fixed-dose combinations of ATV/r and LPV/r are the preferred boosted PI options for 2nd-line ART.
  - ATV/r is the preferred PI for clients with lipodystrophy syndrome, hyperlipidaemia, or other risk factors for coronary artery disease
  - ATV/r is the preferred PI for adolescents due to its once daily dosing, which reduces a common adherence barrier in this population
- Clients with HIV/Hepatitis B co-infection should always receive a 2nd-line regimen that contains TDF in order to appropriately treat the hepatitis B infection

SECTION 6.4: THIRD-LINE REGIMENS

Lesotho's ART programme is now 16 years old and although the majority of PLHIV on ART remain on 1st-line regimens, there are an increasing number of PLHIV on 2nd-line regimens. The country's goal is to maintain PLHIV on successful 1st-line for as long as possible followed by 2nd-line ART when needed. However, it is expected that as the national ART programme continues to expand and mature, more PLHIV will fail 2nd-line treatment and require 3rd-line ART.
The introduction of DTG is simplifying treatment but complicating the terminology regarding regimens. PLHIV may be on a DTG-based regimen as a 1st-line, 2nd-line or 3rd-line option. PLHIV are expected to achieve long-term viral suppression on DTG due to its potency and high genetic barrier to resistance.

If there is evidence of treatment failure on a 2nd-line regimen, switching to a 3rd-line regimen is recommended after addressing any adherence barriers, drug-drug interactions and opportunistic infections.

- PLHIV with treatment failure needing a switch to 3rd-line therapy are to be presented to an ART Advisory Committee for review. Approval will be provided after review of clinical histories, adherence assessment, and laboratory investigations.
- Clients who have failed an NNRTI-based 1st-line regimen and DTG-based 2nd-line regimen, should be offered a PI-based 3rd-line regimen with ATV/r or LPV/r.
- Clients who have failed both PI-based and DTG-based regimens should be offered a DRV/r based 3rd-line regimen. Genotypic resistance testing is recommended to guide selection of an appropriate 3rd-line regimen.
- Discuss with National ART Advisory Committee (NAAC).

Third-line ARV drugs for Lesotho include:

- Boosted PIs – darunavir (DRV), lopinavir (LPV), atazanavir (ATV)
- INSTI – dolutegravir (DTG)
- NNRTI – etravirine (ETV)
- NRTIs – recycled NRTIs based on a client's genotypic resistance test results and complete ARV treatment history.

Special considerations:

- ETV should not be given with DTG as the concentration of DTG is reduced.
  - A regimen consisting of DTG + ETV + DRV/r may be used.
- Pediatric formulations of DRV and ETV are readily available in Lesotho through a long-term donation program from the drug manufacturer.

PLHIV on a failing regimen with no new ARV options should continue on a tolerated ART regimen that achieves maximal viral suppression in order to slow disease progression and HIV-related morbidity and mortality.

Partial viral suppression is better than uncontrolled viral replication.

SECTION 6.5: IMPORTANT DRUG-DRUG INTERACTIONS

Drug interactions can reduce the efficacy of ART and/or increase ART-related toxicity. This section summarizes the major ARV drug interactions.

Whenever PLHIV start or switch ARV drugs or start new concomitant medications, it is important to evaluate for potential drug interactions.

- Many drugs and drug classes have clinically significant drug-drug interactions with ARVs
- These are also important drug interactions between several ARVs
- It is important to consult a regularly updated database to assess whether drugs can be co-administered and whether dose adjustment is required
- Herbal medications (e.g., St John's Wort, garlic) may also have interactions with ARVs. The effects of Sesotho medicines on serum levels of antiretrovirals have not been evaluated. It is therefore recommended that clients do not take traditional medicines along with antiretrovirals.

Table 6.4: Key ARV Drug-Drug Interactions

ARV Drug	KEY INTERACTIONS	SUGGESTED MANAGEMENT
DTG	Carbamazepine, phenobarbital and phenytoin	Use alternative anticonvulsant agents (such as valproic acid or gabapentin)
	Rifampicin	Increase DTG to twice daily
	Rifapentine in TB preventative therapy regimens (1HP or 3HP)	No dose adjustment needed for DTG 50mg Awaiting more data regarding DTG 10mg
	Metformin	Avoid high-dose metformin with DTG. Reduce the metformin dose as availability is increased.
	Polyvalent cation products containing Mg, Al, Fe, Ca and Zn	Use DTG at least 2 hours before or at least 6 hours after supplements containing polyvalent cations, including but not limited to the following products: Fe, Ca, Mg or Zn multivitamin supplements; mineral supplements, cation-containing laxatives and Al, Ca or Mg containing antacids. *If taking medication with meals, DTG may be taken at the same time with the supplements.*
TDF	Lithium	Monitor renal function closely
	NSAIDs	Avoid prolonged use in those with renal disease or at risk of nephrotoxicity.
Boosted PI (ATV/r, DRV/r, LPV/r)	Rifampicin	Replace rifampicin with rifabutin Adjust the dose of LPV/r Contraindicated with ATV/r and DRV/r
	Rifapentine	Avoid combination
	Lithium, haloperidol	Use with caution since there is a risk of QT prolongation with ATV/r and LPV/r
	Amlodipine	Consider reducing the dose of amlodipine by 50%
	Antidiabetic drugs (such as glibenclamide and gliclazide)	Reduce the antidiabetic drug dose as needed
	Statins	Simvastatin: contraindicated because of the risk of rhabdomyolysis; use alternative agent Atorvastatin: dose adjustment required; total daily dose should be limited to 10mg with ATV/r, 20mg with LPV/r and 40mg with DRV/r
	Hormonal contraceptives	Use alternative or additional contraceptive methods
	Fluticasone or budesonide	Risk of Cushing's syndrome, use alternative corticosteroid (such as beclomethasone)
	Acid-reducing agents	ATV/r: use at least 2 hours before or 1 hour after antacids; contraindicated with proton pump inhibitors

ART and Rifamycins

For clients needing both ART and ATT or TPT, it is important to consider the following contraindications or interactions.

Rifampicin

- Rifampicin and DRV/r are contraindicated.
  - o Consult NAAC for guidance for PLHIV on DRV/r with TB disease.
  - o Use IPT if TB preventive therapy is needed.
- Rifampicin and ATV/r are contraindicated.
  - Substitute with LPV/r with appropriate dosing.
- Dose adjustment is needed for DTG when administered with rifampicin.
  - Double the dose of DTG by increasing to twice daily administration.
  - The twice daily dosing should be continued for two weeks after completion of rifampicin
- Dose adjustment is needed for LPV/r when administered with rifampicin
  - Do not use LPV/r syrup, pellets or granules with rifampicin.
  - For those on LPV/r tablet formulations, ritonavir should be boosted so that the ritonavir to lopinavir ration is 1:1 (e.g. LPV/r 400/100mg BD + RTV 300mg BD)
  - OR double the dose of LPV/r tablets (e.g. LPV/r 800/200mg BD)

Rifapentine

- Rifapentine and PI co-administration is contraindicated.
  - Use alternative TPT regimens for PLHIV on PI-based regimens.
- No dose adjustment is needed for DTG 50mg when administered with rifapentine.
- There is limited data on co-administration of DTG 10mg and rifapentine.
  - Use alternative TPT regimens for PLHIV on DTG 10mg.
  - Double dose of DTG by increasing to twice daily administration for those on DTG 10mg and rifapentine pending additional efficacy data

Rifabutin

- Where available, rifampicin may be replaced by rifabutin
- No dosage adjustment is needed for DTG and rifabutin
- No dosage adjustment is needed for PIs when used with rifabutin. However, dose adjustment of rifabutin may be needed to ensure adequate TB treatment.
  - LPV/r is the preferred PI to administer with rifabutin.

SECTION 6.6: ART FOR PRE-TERM OR LOW-BIRTH-WEIGHT INFANTS

With the introduction of birth testing in high-risk HIV exposed infants, it is possible that more infants will be initiating ART prior to 42 weeks corrected gestational age, prior to 4 weeks chronological age, and/or prior to weighing 3 kg. **Please refer to a Paediatric HIV Specialist for guidance with use of the below ART dosing recommendations.** These guidelines are primarily intended for standardization among HIV consultants.

Globally, there are still gaps in knowledge regarding optimal regimens and dosing for neonates. However, it is known that neonates have immature renal and hepatic pathways and decreased ability to excrete and metabolize medications so dosing for ARVs is reduced. Relatively more data is available on dosing of AZT and NVP as these medications have historically been used for infant prophylaxis. LPV/r is not recommended until 42 weeks corrected gestational age due to adverse effects.

Once the infant is at least four weeks of age and weighs at least 3kg, standard paediatric treatment with weight-appropriate ABC/3TC + DTG is recommended.

Neonatal dosing

Dosing recommendations change due to the rapid maturation of renal and hepatic functions.

- Treatment is given twice daily (with exceptions as noted for RAL and NVP).
- Raltegravir is administered once daily for the first week of life and twice daily thereafter.
- Nevirapine is administered once daily for the first two weeks of treatment and twice daily thereafter.
- Lopinavir cannot be used until 42 weeks corrected gestational age.
- **Notify Pediatric HIV Specialist for treatment in preterm infants.**

Table 6.5: ART for infants younger than four weeks of age

	2 - <3 kg	3 - <4 kg	4 - <5 kg
AZT 10mg/ml syrup	1 ml BD	1.5 ml BD	2 ml BD
3TC 10mg/ml syrup	0.5 ml BD	0.8 ml BD	1 ml BD
NVP 10mg/ml syrup	1.5 ml BD*	2 ml BD*	3 ml BD*
RAL 10mg/ml granules (< 1 week of age)	0.4 ml daily	0.5 ml daily	0.7 mg daily
RAL 10mg/ml granules (oral granules for suspension: 100mg/sachet)** (>1 week of age)	0.8 ml BD	1 ml BD	1.5 ml BD

*NVP is given once daily for two weeks of treatment and twice daily thereafter
** RAL granules for oral suspensiosn should be used for newborns weighing at least 2 kg

Infants over 4 weeks of age but below 3kg

Standard weight-based dosing and body surface area (BSA) dosing are used for infants at least four weeks of age. Calculation of BSA is recommended to confirm dosing in those below 3kg although dosing guides are included. BSA = $\sqrt{((ht*wt/3600))}$ with height in cm and weight in kg.

- AZT dose = 180-240 mg/m2 per dose given twice daily
- NVP dose = 160-200 mg/m2 per dose given once daily for first two weeks of treatment then twice daily thereafter
- RAL dose = 6 mg/kg per dose given twice daily
- LPV/r dose = 300/75 mg/m2 per dose given twice daily

Table 6.6 ART for infants over four weeks of age but below 3g

Drug	Strength	2 kg to < 3 kg	
		AM	PM
AZT/3TC	60/30 mg	0.5 tab	0.5 tab
NVP	10 mg/ml	1.5 ml	1.5 ml*
RAL+	10 mg/ml granules	1.5 ml	1.5 ml
LPV/r	80 mg/20 mg/ml	0.6 ml	0.6 ml

*NVP is only given once daily during first two weeks of treatment
+RAL granules are 100 mg/sachet

SECTION 6.7: DTG TRANSITION PLAN

The DTG transition plan addresses those PLHIV on 1st-line or 2nd-line ART but not yet on DTG as of January 2022. Most of those who will transition to DTG are children weighing less than 20kg who have been awaiting an appropriate paediatric formulation of DTG. Others include children and adults who have been on PI-based 2nd-line regimens.

All PLHIV aged at least 4 weeks and weighing at least 3 kg on 1st-line or 2nd-line ART (NNRTI or PI-based) with last VL < 1000 cps/ml should be transitioned to DTG with once daily NRTI backbone. Proper education should be provided to clients and caregivers related to drug and dosing changes.

All PLHIV with high viral loads on 1st-line or 2nd-line ART (NNRTI or PI-based) should be managed as treatment failure. They may be switched to 2nd-line or 3rd-line DTG-based ART, but this should be noted and communicated as a switch due to treatment failure and not as regimen optimization. Continue preferred NRTI backbone of TDF or ABC. If viral load taken six months after switch is detectable, modify NRTI backbone in discussion with ART Advisory Committee.

Most PLHIV receiving DRV/r-based 2nd-line or 3rd-line regimens are also eligible for transition to DTG. Children and adolescents who failed 1st-line LPV/r-based regimens and were switched to 2nd-line DRV/r-based regimens may transition to DTG-based regimens. Adults on DRV/r-based 3rd-line regimens likely failed both NNRTI-based and LPV/r-based regimens. They are likely to have less active NRTI backbones. However, they may also be transitioned to DTG-based regimens with close viral load monitoring. ART Advisory Committees will provide additional guidance and case-by-case support for transition of PLHIV on DRV/r-based regimens.

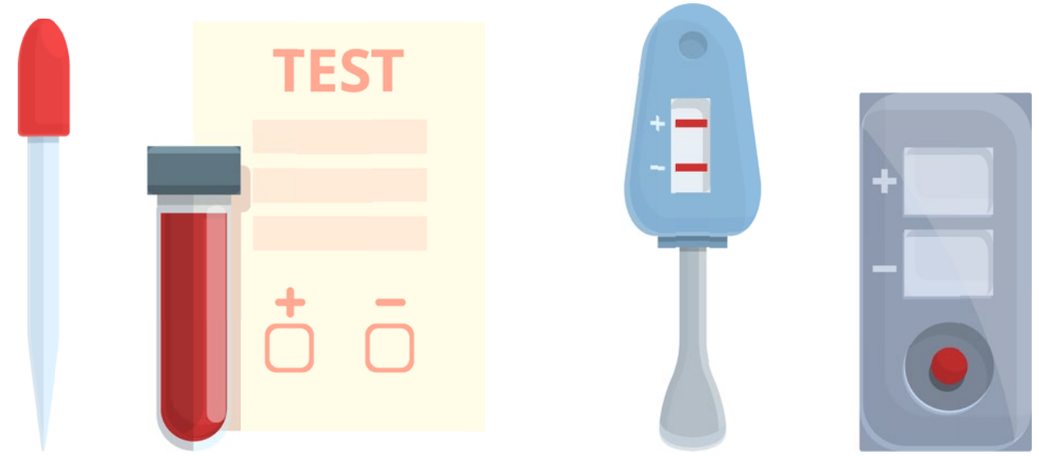
Viral load six months after transition to DTG is recommended for all PLHIV currently on DRV/r-based regimens. Consult NAAC for detectable viral loads six months after transition.

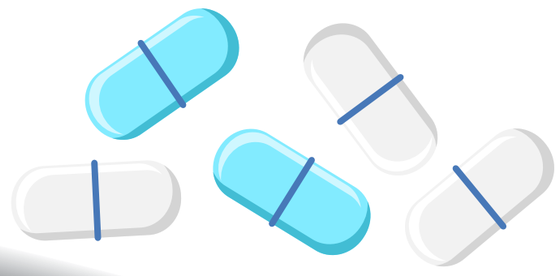
Table 6.7: ART Optimization

Weight	Current 1st Line	Optimal regimen for transition	Special Considerations
3 - 34.9 kg	ABC + 3TC + LPV/r or ATV/r or DRV/r	ABC / 3TC + DTG	If VL < 1000 copies/ml, transition to DTG. If VL > 1000 copies/ml, manage as treatment failure. Switch to 2nd-line (or 3rd-line) as appropriate in consultation with AAC.
	AZT + 3TC + LPV/r or ATV/r or DRV/r	ABC/3TC + DTG	
≥35 kg	ABC + 3TC + LPV/r or ATV/r or DRV/r	TDF/3TC/DTG	
	AZT + 3TC + LPV/r or ATV/r or DRV/r	TDF/3TC/DTG	
	TDF + 3TC + LPV/r or ATV/r or DRV/r	TDF/3TC/DTG	

Table 6.8 Follow-up Schedule after ART Optimization

Population	Supply at Transition	Supply at 1st Follow-up visit	VL Schedule	Resume DSD/ MMD models
Established (stable) adults, adolescents and children >5 years	1 month	3 or 6 month MMD	At scheduled time	At first review
Established (stable) children 12 months to5 years	1 month	2 month	At scheduled time	At 3 month review
Established (stable) infants <12 months	1month	1 month	At scheduled time	Monthly visits due to infant services
PLHIV on ART < 6 months (any age)	1 month	1 month	6 months after ART initiation	When established on ART (stable)
Switched for treatment failure	1 month	1 month	3 months after switch	When established on ART (stable)
PLHIV with viremia (50-999)	1 month	1month	3 months after switch	When established on ART (stable)
Transitioning from DRV/r - based regimens	1 month	3 or 6 month MMD	6 months after transition	At first review





CHAPTER 7: MONITORING

INTRODUCTION

Provision of quality care includes clinical assessment and laboratory tests which play a key role in monitoring PLHIV before, during, and after the initiation of ART. Monitoring done before and/or at the time of initiation of ART can help guide the selection of the ART regimen. After ART is started, clinical and laboratory monitoring will help to identify and manage possible side effects early before they become serious; assess the efficacy of treatment; and help identify poor adherence and treatment failure. This chapter is meant to provide guidance on clinical and laboratory monitoring, assessment of adherence, ART treatment failure, drug-drug interactions and ARV drug toxicities.

SECTION 7.1: CLINICAL AND ADHERENCE MONITORING

Clinical assessment should be the primary tool for monitoring PLHIV throughout the HIV care continuum. Clients initiating ART should have clinical and adherence assessments done two weeks, one month, three months and six months after ART initiation and at least every 6-12 months thereafter (see Table 7.1). **More frequent clinical monitoring should be conducted for clients presenting with advanced HIV disease, those with poor ART adherence and/or treatment failure, and pregnant and breastfeeding women.** More frequent monitoring is also needed for those restarting ART or switching to new regimens due to treatment failure.

A focused history and physical assessment should be performed during scheduled clinical visits.

- **Nutritional status for all clients**
  - Weight (measure at every visit)
  - Height (in children; measure every 3 months)
  - Head circumference (in children < 3 years; measure every 3 months)
  - Calculate Body mass index (BMI) and z score as appropriate for age and sex
- **Developmental status in children**
- **Diagnosis and management of new illnesses**
  - Screen for OIs, especially TB. In addition to symptom-based screening, TB LAM should be used in clients with CD4 count below 200 cells/ml
  - All clients with CD4 count below 200 cells/ml should be screened for Cryptococcal disease using Serum Cryptococcal antigen test (serum CrAg).
  - Check urgent viral load and CD4 count for those presenting with new stage 3 and 4 conditions.
  - Diagnosis and management of co-morbidities, including STIs, hepatitis B, hypertension, diabetes mellitus, substance use disorder, mental health, etc.
  - Screen women living with HIV for cervical cancer at least once every 2 years
- **Review of ART**
  - Optimization of current regimen/formulation for age, weight, ability to swallow tablets, co-morbidities, viral suppression status, etc.
  - Verify appropriate dose for age, weight, drug-drug interactions
  - Monitor for side effects and manage appropriately
  - Review adherence
    - Provide ongoing adherence support
    - Update changes in addresses, contact numbers and social support as needed
  - Assess for drug to drug interactions - including traditional and herbal medicines that may interact with ARVs
  - Link to or enrol in desired differentiated service delivery models
- **Early diagnosis of pregnancy**
  - Provision of routine primary health care service

Table 7.1: Monitoring Schedule for PLHIV on ART

ARV Regimen	Assessment / Investigations	Baseline	Wk 2	Mo 1	Mo 3	Mo 6	Mo 12	Every 12 months
All Regimen	Rule out active TB using TB screening tool	X	X	X	X	X	X	At every visit Children & Adolescents: 3-6 monthly Adults: 6-12 monthly
	Adherence assessment		X	X	X	X	X	
	Clinical exam (including weight)	X	X	X	X	X	X	
	Assessment for possible ARV side effects		X	X	X	X	X	
	Treatment Supporter	X					X	If adherence concerns (regularly if adherence issues persist)
TDF‡/3TC/DTG		CD4, ALT, Cr, FBC, FBS, HBsAg, pregnancy test, RPR/VDRL^				VL, Cr	VL, CD4∞, Cr	VL , CD4∞, Cr, FBS
ABC/3TC/DTG						VL	VL, CD4∞	VL , CD4∞, FBS
AZT/3TC/DTG*				Hb		VL, Hb,	VL, Hb, CD4∞	VL , Hb, CD4∞, FBS
All Pregnant women	Pregnant women should receive clinical exams and laboratory monitoring in accordance with ANC and eMTCT guidelines.							
PI-based regimens	Fasting blood glucose and lipids should be checked at baseline and annually thereafter							

*All clients with abnormal Hb at baseline should have repeat measurement to ensure correction
‡ Inability to perform creatinine clearance should not be a barrier to tenofovir use in asymptomatic persons
^ For those 12 years and older
Pregnant and breastfeeding women, children and adolescents require more frequent VL monitoring.
∞ CD4 monitoring frequency is based on the VL and previous CD4 result. If CD4 is >350 and VL is < 1000, stop CD4 monitoring. Use CD4% for children under 5 years. Continue monitoring if previous CD4 result reveals advanced or severe immunosuppression.

SECTION 7.2: LABORATORY MONITORING

Guiding Principles

- It is important for baseline tests to be conducted for all clients being initiated on ART, however availability of laboratory results is not a prerequisite for the initiation or continuation of ART.
- **Viral load monitoring is the preferred laboratory test for monitoring the success of ART and evaluation of treatment failure.**
- CD4 monitoring according to the recommended schedule will continue to play a role in monitoring PLHIV to recognize advanced HIV disease, to assess need for co-trimoxazole prophylaxis and risk for opportunistic infections.
- Viral load should be measured 6 and 12 months after ART initiation or switch to 2nd/3rd-line regimen and annually thereafter for adults and 6 monthly for children and adolescents (see Figure 7.1: Viral load monitoring algorithm).
- Refer to eMTCT guidelines for VL monitoring schedule for pregnant and breastfeeding women as baseline VL and more frequent monitoring are indicated for this special population.
- Symptom-directed laboratory monitoring for safety and toxicity is recommended for those on ART. Also note that clients with existing co-morbidities and those on medications that interact with ART may also require more frequent monitoring.

Routine Laboratory Investigations on ART

The following laboratory tests should be performed **routinely** depending on the regimen (See Table 7.1). Viral load and CD4 monitoring are discussed in the next section.

- If initiated **on TDF**, perform serum creatinine at baseline, six months and annually thereafter.

  Calculate rate of creatinine clearance. Dose-adjustment is required for TDF if creatinine clearance is < 50 ml/min.
- **Inability to monitor serum creatinine should not be a barrier to TDF initiation.** Creatinine clearance monitoring is crucial for those with underlying renal disease, older age groups, low body weight or comorbid conditions, such as diabetes or hypertension.

Calculation of Creatinine clearance in ml/min using Cockcroft Gault Equation

Male: $\frac{1.23 \times (140-age) \times wt\ in\ kg}{Creatinine\ in\ \mu mols/L}$

Female: $\frac{1.04 \times (140-age) \times wt\ in\ kg}{Creatinine\ in\ \mu mols/L}$

- AZT is relatively contraindicated if Hb is <8 g/dL.
- For individuals with HIV/HBV or HIV/HCV co-infection, it is recommended that liver enzymes be monitored 1 and 3 months after ART initiation and symptom-based thereafter.

Additional laboratory tests can be requested based on clinical assessments but should only be done if the results will guide clinical management. Such tests include but are not limited to:

- Lactate assay, if the client is on a NRTI for > 4 months and losing weight, and/or having other symptoms that suggest hyperlactatemia.
- Glucose and lipid profiles annually, if the client is taking a PI, such as LPV/r or ATV/r or DRV/r.
- Glucose monitoring is also recommended annually for PLHIV on DTG.
- **Point-of-care testing equipment** should ideally be available in all clinics to measure Haemoglobin (Hb) and glucose.

SECTION 7.3: MEASURING EFFICACY OF TREATMENT

The effectiveness of ART may be monitored by assessing clinical improvement, immunologic function (CD4 count and percentage), and viral load. However, virologic monitoring is the gold standard for monitoring ART success.

Clinical monitoring

The following clinical indices suggest that an adult client is responding to ART:

- The client feels better and has more energy to perform daily tasks
- The client is gaining weight
- There is an improvement in symptoms and signs of the original presenting illness
- The client is free of new WHO Stage 3 or 4 conditions

In children, growth and development are important clinical monitoring indicators and are assessed using growth charts. Important signs of infants' and children's response to ART include the following:

- Improvement in growth in children who have been failing to grow
- Improvement in neurological symptoms and development in children with encephalopathy or developmental delay/regression due to HIV
- Decreased frequency of infections (bacterial infections, oral thrush, and/or other OIs)

Virologic (HIV viral load) monitoring

PLHIV on effective ART are expected to achieve an undetectable viral load within six months of treatment with good adherence. The viral load measurement is the most accurate method for assessing treatment failure.

- The viral load is tested at six and 12 months after ART initiation.
- The viral load is tested at six and 12 months after switch to 2nd-line or 3rd-line ART.
- Viral load is tested annually for non-pregnant adults established on ART.
- Viral load is tested every six months for children and adolescents (0-19 years) established on ART.
- Viral load is tested at baseline/first contact for pregnant and breastfeeding women and every three months throughout pregnancy and breastfeeding period .
- Viral load is tested when substituting one ARV for another due to toxicity or serious adverse effect to exclude treatment failure in the setting of a single drug substitution (not necessary within six months of beginning regimen).

Any viral load ≥ 50 copies/ml must stimulate a thorough review, including:

- Enhanced adherence counselling sessions to evaluate for any adherence issues and address them
- Identify any untreated opportunistic infections, co-infections, or illnesses
- Checking for any drug-drug interactions with ARVs, including assessing for traditional Sesotho or herbal medication use
- Reassessing CD4 count if VL is above 1000 copies/ml

Ministry of Health (2020) National Guidelines for the Elimination of Mother to Child Transmission of HIV and Syphilis, Fourth Edition. Government of Lesotho, October 2020.

Although the viral load threshold for the definition of virologic treatment failure is ≥ 1000 copies/ml, there is clear evidence that sustained low level viremia (≥50 to 999 copies/ml) increases the risk of developing resistance. Thus, even though it is not recommended to change to a second or third-line ART regimen for low level viremia, PLHIV with a detectable viral load should be thoroughly evaluated in a similar fashion to PLHIV with viral loads ≥ 1000 copies/ml. Consult ART Advisory Committee (AAC) for additional guidance regarding low level viremia.

Point-of-care viral load use is being expanded for pregnant and breastfeeding women as well as for children and adolescents to improve the timely management of those with detectable viral loads.

Figure 7.1: Viral Load Monitoring Schedule

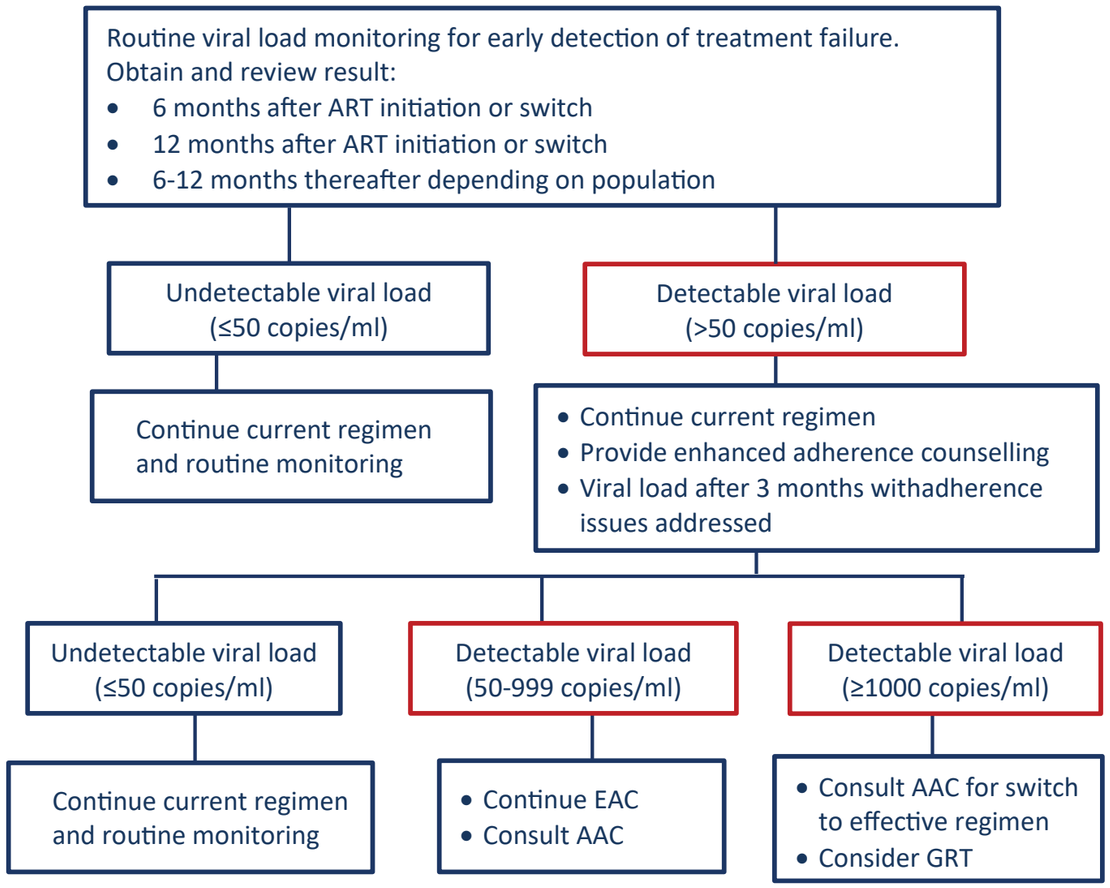


Table 7.2: Treatment Monitoring Algorithm for Pregnant and Breastfeeding Women

Pregnant and breastfeeding women already on ART	Pregnant and breastfeeding women newly initiating ART	In the event of elevated VL If client has been on ART for 6 months or more
First visit *Including ANC, labour & postnatal* Conduct VL at 1st contact regardless of duration on ART **Follow up VL tests** Every three months during pregnancy and breastfeeding period.	**First visit** *Including ANC, labour & postnatal* Conduct baseline viral load **Follow up VL tests** Three months after ART initiation. Every three months during pregnancy and breastfeeding period. Viral suppression should be achieved at 6 months.	**VL > 1000 copies/ml in client with ≥ 6 months on ART** • Review ART history • Evaluate for co-morbidities and malnutrition • Evaluate for ART side effects • Identify drug-drug Interactions • Evaluate adherence and start enhanced adherence counselling & adherence support • Evaluate psychosocial support needs • Repeat VL after 1 month of intensified adherence support ○ If log drop <1, switch to 2nd-line in consult with AAC ○ If log drop >1 but VL still detectable, continue regimen and adherence support. Repeat VL in 1 month **If VL 50 – 1000 copies/ml** Assess for adherence issues, and manage as for VL>1000 copies /ml.

Immunologic (CD4) monitoring

Immune recovery is expected as indicated by improvement in the CD4 count and percentage in PLHIV on effective ART. However, ART effectiveness is best monitored using viral load and not CD4 count. CD4 monitoring still has a role to play as immune suppression determines the risk for opportunistic infections and need for prophylaxis. Most PLHIV newly initiating ART with an abnormally low CD4+ count will see a rapid initial CD4+ count increase (75 cells/µL – 100 cells/µL), followed by a more gradual rise thereafter (50 cells/µL – 100 cells/µL per year) until a normal CD4+ count > 500 cells/µL is achieved. If CD4+ count does not rise despite viral suppression, the ART regimen does not need to be altered. This phenomenon may reflect an immunological discordant response to ART; however, if the client is unwell, then other secondary causes should be sought.

Smith CJ, Sabin CA, Lampe FC, et al. The potential for CD4 cell increases in HIVpositive individuals who control viraemia with highly active antiretroviral therapy. AIDS. 2003;17(7):963–969. https://doi.org/10.1097/00002030-2003 05020-00004)

Table 7.3: CD4 Monitoring Schedule

ART Status	WHO Stage	Last CD4 count	Last viral load	CD4 monitoring frequency
New on ART	Any stage	--	--	Baseline for all PLHIV
Treatment interruption of 6 months or longer	Any stage	Any CD4 count	--	Upon return to care
Not on ART	Any stage	Any CD4 count	--	Every 6 months
ART ≥12 months	--	≥350*	<1000	**Stop CD4 monitoring**
ART ≥12 months	--	<350	<1000	Every 12 months with VL
ART ≥12 months	Any stage	Any CD4 count	≥1000	Every 6 months until viral suppression
ART ≥6 months	New stage 3 or 4 condition	--	--	Immediately check CD4 and VL

*Use CD4% for children under 5 years. Continue monitoring if previous CD4 result reveals advanced or severe immunosuppression. (See Table 5.3)

A falling CD4 count may indicate intercurrent illness or an opportunistic infection, poor adherence, or treatment failure due to resistance. Such clients need a thorough review inclusive of:

- A viral load must be sent if it has not previously been done to determine if client is truly experiencing treatment failure
- Assessment for other possible reasons for CD4 decline besides treatment failure, such as intercurrent temporary illness (e.g. respiratory tract infection), TB, malignancy, or other OI
- If treatment failure is confirmed,
  - Conduct enhanced adherence counselling sessions to evaluate for adherence issues and address them
  - Identify any untreated opportunistic infections, co-infections, or illnesses
  - Check for any drug-drug interactions with ARVs, including assessing for traditional or herbal medication use
  - Manage for Advanced HIV Disease if CD4 count is below 200 cells/ml.

SECTION 7.4: ANTIRETROVIRAL TREATMENT FAILURE

Treatment failure is defined as a confirmed VL > 50 copies/mL on two consecutive measurements taken three months apart after at least six months on effective ART. The decision to alter ART should therefore be based on the results of repeat testing after 3 months, following intensive adherence counselling. Although previous guidelines used a threshold of 1000 copies/mL to define virologic failure, there is now good evidence that VL > 50 copies/mL is associated with subsequent virologic failure. Sustained viral replication, even at low levels, can lead to the accumulation of resistance mutations (although this has not yet been definitively established in the case of DTG).

Dolutegravir has been proved to be a remarkably robust drug in INSTI-naive patients when paired with at least one active NRTI. To date, less than five cases of DTG resistance have been described in this scenario.

Thus, although a high VL has traditionally been a marker of possible resistance, this paradigm no longer applies for the most part in patients receiving a DTG-based regimen, provided that:

- The client has not had previous exposure to INSTI as part of a failing regimen.
- The client is known to have at least one fully active NRTI as part of their regimen. (Note that patients who contract HIV whilst on pre-exposure prophylaxis [PrEP] are at risk of not having a fully active NRTI backbone.)
- The client was not recently exposed to a scenario where a drug–drug interaction would have substantially decreased DTG concentrations (e.g. RIF-based TB therapy without increasing DTG dosing frequency to 12 hourly).

Provided that none of the above conditions are met, a detectable VL should not be assumed to reflect possible resistance. Rather, it can be assumed that the detectable VL represents poor adherence and efforts to address this should be undertaken. **MOH does not recommend performing resistance testing for clients on a DTG-based regimen within 2 years of commencing the drug, provided that the above conditions are met.**

The majority of people living with HIV will achieve viral suppression after six months on an appropriate ART regimen. Clients who do not achieve viral suppression after six months on an appropriate ART regimen should receive enhanced adherence counselling (EAC) to identify and address adherence issues with repeat viral load after three months. Viremia is a risk for developing resistance to one or more ARV drugs, and this risk increases the longer that a client continues to take ART in the setting of an unsuppressed viral load. Upon receipt of the second viral load >1000 copies/ml after correcting adherence issues, treatment failure is diagnosed. The prompt identification of treatment failure is important to:

- Minimize resistance and preserve other ARVs for future ART regimens
- Reduce HIV disease progression and resulting HIV-related morbidity and mortality
- Reduce onward transmission of HIV, including decreasing the risk of transmission of resistant HIV strains.

Treatment failure may be classified as virologic, immunologic, or clinical. Virologic failure develops first, followed by immunologic failure and then clinical failure. This progression is the reason viral load monitoring is the preferred tool for assessing ART success so that treatment failure can be detected earlier than if CD4 and clinical monitoring are used alone.

Upon recognizing treatment failure, regardless of the type of failure (virologic, immunologic, or clinical), a thorough evaluation must be initiated to determine the cause. The most common causes of antiretroviral treatment failure are:

- Suboptimal ARV adherence
- Resistance to one or more ARV drugs in the ART regimen
- Drug-drug interactions leading to suboptimal ARV drug levels
- Opportunistic infections or other medical conditions, such as cancer, though full viral suppression can usually be achieved even in the setting of an untreated OI or medical condition with good ART adherence.

Suboptimal ART adherence and ARV drug resistance are the first and second most common causes of treatment failure respectively. Because of this, the main focus of the evaluation of PLHIV with treatment failure should be to determine whether poor adherence is the root cause. Switching a client to 2nd-line or 3rd-line ART without correcting underlying adherence issues will typically result in continued treatment failure and further increases the risk of developing resistance, which can reduce a client's future ARV drug options. However, prolonged adherence issues should not be a barrier to switching to an appropriate regimen in the setting of clinical deterioration. Early consultation with clinical experts and ART Advisory Committees are strongly recommended

TABLE 7.4: Clinical, Immunological and Virologic Failure

Failure	Definition	Comments
Clinical Failure	**Adults and Adolescents** New or recurrent clinical event(s) indicating severe immunodeficiency (WHO clinical stage 3 and 4 condition) after six months of effective ART **Children** New or recurrent clinical event(s) indicating advanced or severe immunodeficiency (WHO clinical stage 3 and 4 clinical condition with exception of TB) after 6 months of effective ART	The condition must be differentiated from immune reconstitution inflammatory syndrome (IRIS).
Immunological failure	**Adults and adolescents** CD4 count <350 cells/mm^3 or Persistent CD4 levels below 200 cells/mm^3	Without concomitant or recent infection to cause a transient decline in the CD4 cell count *Current WHO clinical and immunological criteria have low sensitivity and positive predictive value for identifying individuals with virologic failure. There is currently no proposed alternative definition of treatment failure and no validated alternative definition of immunological failure.*
	Children: **Younger than 5 years** Persistent CD4 levels below 200 cells/mm^3 or <25% **Older than 5 years** Persistent CD4 levels below 200 cells/mm^3	
Virologic Failure	Viral load ≥50 copies/mL based on two consecutive viral load measurements in three months with adherence support.	An individual must be taking ART for at least six months before it can be determined that a regimen has failed.

Upon identifying treatment failure, enhanced adherence counselling (EAC) sessions should begin as soon as possible. The following measures should be taken for quality EAC:

- Once any VL above 50 copies/ml is noted, call client to come to facility or initiate telephonic EACs immediately.
- Physically accompany any identified clients to EAC providers if provided by others.
- Clearly document EAC sessions in client notes using standard EAC form.
- Multi-disciplinary approach and support by the whole team in ensuring adherence support. Maintain good communication in the team by ensuring clear documentation of steps taken in adherence support.
- Effectively use appointment system, mobile app reminders and tracking to ensure retention of clients while undergoing EACs.

EAC sessions should focus on reviewing a client's adherence, identifying adherence issues and barriers to good adherence, and developing and implementing a plan with the client and their treatment supporter/caregiver to address them. At least two EAC sessions should be conducted in a short time period (e.g. 2-4 weeks) with further EAC sessions as needed. A repeat viral load should be sent 3 months after the EAC sessions began if the adherence issues identified have improved or been resolved. See eMTCT guidelines for guidance on management of elevated VL in pregnant and breastfeeding women.

Viral load is not recommended if there are ongoing adherence issues as the viral load will likely continue to be unsuppressed but a confident determination of whether the viral load is elevated due to poor adherence or viral resistance will not be able to be made. **PLHIV with treatment failure should be evaluated at frequent intervals by a multidisciplinary team** until a conclusion is reached about the primary cause of their treatment failure and the need for a change in their ART regimen. Refer to Chapter 8: Adherence and Disclosure for more detailed guidance on conducting EAC sessions.
Poor adherence and suboptimal ARV drug levels eventually lead to HIV resistance to one or more of the ARVs in the ART regimen. The primary purpose of the EAC sessions and thorough medical and social history and physical examination of clients with treatment failure is to identify those for whom there are reversible causes (e.g. poor adherence, untreated OI, drug-drug interaction) and monitor if correction of those issues leads to viral suppression allowing the client to stay on their current ART regimen.

Studies have shown that the highest viral suppression rates occur with 1st-line ART regimens compared to 2nd-line or 3rd-line regimens. Because of this, changes to 2nd-line and 3rd-line ART should be made after a client's care team is reasonably assured that the primary reason for treatment failure is viral resistance to a client's ARVs.

Guidance for genotypic resistance testing

Resistance assays are important tools to inform treatment decisions for clients who experience virologic failure while on ART. Genotypic resistance testing (GRT) may be indicated for clients who:

- Fail PI and DTG-based regimens
- Fail ART after exposure to PrEP
- Fail ART and have a complicated drug history

The following guidance applies to provision of genotypic resistance tests for eligible clients with suspected drug resistance to ensure efficient use of available resources:

- Ensure client has a plasma viral load of at least ≥500 copies/mL
- Viral load remains elevated in spite of EAC, and client has confirmed adherence to ART. This helps eliminate adherence as a cause for the elevated viral load. In addition, drug pressure will maintain resistant viruses and increase the chances of detection.
- Always consider prior drug history in interpreting GRT and note that in the absence of ART, resistant viruses may decline over time to less than the detection limit of standard resistance tests.
- Consult National ART Advisory Committee to support interpretation of genotypic test results and formulating a new regimen. Provide the committee with a complete history which provides all the necessary details to inform decision making.

Timely management of treatment failure

All clients identified with elevated viral load should be managed as promptly as possible to achieve viral suppression or re-suppression. Teams managing clients should aim to have all measures in the treatment failure algorithm concluded within six months at most. For challenging clients whose adherence issues are not resolved within three months of the initial VL, consult psychologist and escalate to the next level e.g. ART Advisory Committee for further support. Additional measures that should be attempted for clients with challenging adherences issues include:

- Arranging for treatment supporter
- Directly observed therapy

Unavailability of viral load monitoring for PLHIV with treatment failure
If a client presents with clinical and/or immunologic treatment failure but the treating clinician does not yet have access to viral load results, EAC sessions and the evaluation of treatment failure should be started while efforts are made to follow up viral load results.

- If access to viral load testing is interrupted after a client is identified with virologic treatment failure, EAC sessions and treatment failure evaluation should proceed.
- If viral load monitoring is unavailable or the results of viral load testing are delayed for a client with treatment failure who is clinically deteriorating, a change to 2nd-line ART should not be delayed if there are no unresolved adherence issues.
- ART Advisory Committees have been decentralised to hospital level to ensure rapid responses to 2nd- line requests. AACs should review all cases as soon as possible and within 2 weeks. All 2nd-line requests for infants, pregnant and breastfeeding women and AHD clients should be responded to within 24 hours. Delayed responses from an ART Advisory Committee should be followed up and support requested from the National ART Advisory Committee as needed.

SECTION 7.5 MONITORING AND SUBSTITUTIONS FOR ARV DRUG TOXICITIES

- The availability of laboratory monitoring is not required for initiating or continuing ART.
- Symptom-directed laboratory monitoring for safety and toxicity can be used for those receiving ART.

Most ARV adverse effects are mild to moderate in severity, are often self -limiting and commonly occur during the initial weeks to months on an ART regimen. In general, ARV substitutions for toxicity should only be made for Grade 3 or 4 adverse events – those that are severe and/or life-threatening. Table 7.4 below summarizes the primary toxicities associated with ARVs, the risk factors associated with the toxicities, and provides suggested management. See Annex 6 for additional information.

Table 7.5: Major ARV Toxicities

ARV	Major types of toxicity	Risk Factors	Suggested Management
TDF	Tubular renal dysfunction, Fanconi syndrome	o Underlying renal disease o Older age o BMI<18.5 or body wt <50kg o Untreated diabetes mellitus o Untreated hypertension o Concomitant use of boosted PI or nephrotoxic drugs	Adjust dose of TDF or substitute with ABC if creatinine clearance decreases to less than 50 ml/min
	Decreases in bone mineral density	o History of osteomalacia & pathological fractures o Osteoporosis or bone loss	Substitute with ABC or AZT only if clinically significant.
	Lactic acidosis or severe hepatomegaly with steatosis	o Prolonged exposure to nucleoside analogues o Obesity	Consult AAC.
ABC	Hypersensitivity reaction	o Presence of HLA-B*5701 gene	Substitute with TDF or AZT. **Do NOT rechallenge.**
3TC	Red cell aplasia	o Very rare and risk factors not well defined.	Rule out other causes of anaemia. Consult AAC.
AZT	Anaemia, neutropenia, myopathy, lipoatrophy or lipodystrophy	o Baseline anaemia or neutropenia o CD4 count ≤200 cells/mm^3	Substitute with TDF or ABC for severe anaemia (Hb <5g/dL)
	Lactic acidosis or severe hepatomegaly with steatosis	o Obesity o Prolonged exposure to nucleoside analogues	Consult AAC.
	Vomiting - persistent	o Risk factors unknown	Substitute with TDF or ABC.
ATV/r	Electrocardiographic abnormalities (PR interval prolongation)	o Pre-existing conduction disease o Concomitant use of other drugs that may prolong the PR interval	Use DTG if possible. Consult AAC as cardiac involvement is associated with PI class. Substitute with LPV/r.
	Indirect hyperbilirubinaemia (clinical jaundice)	o Underlying hepatic disease o HBV and HCV coinfection o Concomitant use of hepatotoxic drugs	
	Nephrolithiasis	o Risk factors unknown	
LPV/r	Electrocardiographic abnormalities (PR and QT interval prolongation, torsades de pointes)	o People with pre-existing conduction system disease o Concomitant use of other drugs that may prolong the PR or QT interval o Electrolyte abnormalities	Use DTG if possible. Consult AAC as cardiac involvement is associated with PI class ATV/r is the preferred PI for those with metabolic syndrome.
	Hepatotoxicity	o Underlying hepatic disease o HBV and HCV coinfection o Concomitant use of hepatotoxic drugs	
	Pancreatitis	o Advanced HIV disease	
	Lipoatrophy or metabolic syndrome, dyslipidaemia or severe diarrhoea	o Risk factors unknown	
DRV/r	Hepatotoxicity	o Underlying hepatic disease o HBV and HCV coinfection o Concomitant use of hepatotoxic drugs	Consult NAAC.
	Severe skin and hypersensitivity reactions	o Sulfonamide allergy	
ETV	Severe skin and hypersensitivity reactions	o Unknown	Consult NAAC.
DTG	Hypersensitivity reactions characterized by rash, constitutional findings, and sometimes organ dysfunction	o Previous history of hypersensitivity to DTG	Substitute with PI. Do NOT rechallenge.
	Depression	o Rare: Usually in clients with pre-existing psychiatric conditions	Consult AAC. Consider change to PI-based regimen.
	Hepatotoxicity	o HBV and HCV coinfection	Consult AAC.

CHAPTER 8: ADHERENCE AND DISCLOSURE

"Drugs do not work in patients who do not take them " C. Everett Koop, M.D.

Excellent adherence to the first ART regimen has the best chance of long-term success

INTRODUCTION

The standard clinical definition of ART adherence is taking 95-105% of medications the right way at the right time (the 4 R's: Right drug, Right dose, Right time, and Right way). Over time this definition has been broadened to include more factors related to continuous care, such as following an agreed-upon care plan; attending scheduled clinic appointments; picking up medications on time; and getting regularly required laboratory tests.

Adherence involves two-way communication between the healthcare provider and the client with shared decision-making in the care and treatment plan.

Adherence to ART is critical for improving a client's clinical, immunological and virologic outcomes. Maintaining good adherence to the prescribed ART regimen prevents or delays the onset of drug resistance and treatment failure. The ability to execute treatment adherence implies treatment literacy on the part of the client and/or caregiver. This means that the client and/or caregiver must understand both the disease process and necessary medications.

Health facilities should form multidisciplinary teams, consisting of clinicians (doctors, nurses), psychosocial support (counsellor, social worker, and psychologist), pharmacy and laboratory personnel in order to assist PLHIV to achieve excellent adherence.

PLAN for excellent adherence

Provide a supportive environment for clients and families
Learn as much as you can about your clients and families
Assess adherence at every visit
Negotiate strategies to help families overcome barriers to adherence

SECTION 8.1: TREATMENT LITERACY AND ADHERENCE COUNSELLING OR ART PREPARATION

Treatment literacy means clients and caregivers have good understanding about HIV: HIV infection and modes of transmission, antiretroviral therapy, viral load monitoring and the importance of adherence to HIV care and treatment. Clients and caregivers understand the importance of taking control of their lives, setting life goals, and achieving their full potential while living with HIV.

Adherence Counselling helps clients and caregivers learn about HIV and understand their treatment and its challenges, and it prepares a client to initiate treatment. Adherence counselling is a process that provides ongoing support for clients and caregivers to engage in treatment over the long term and to develop good treatment-taking behaviours. Adherence sessions consist of education and counselling. Counsellors and clients jointly identify barriers and strategies to overcome the barriers.

Osterberg L, Blaschke T. Adherence to medication. N Engl J Med. 2005;353(5):487-497. doi:10.1056/NEJMra050100

Providers can assess the client's readiness to start ART and maintain good adherence with the goal to keep viral load undetectable.

All individuals with no contraindication to same day ART initiation should be fully informed about the benefits of starting treatment and be initiated on ART at the point of diagnosis. Therefore, it is critical to articulate the benefits of same day ART initiation with a client newly testing HIV positive. However, clients should not be coerced to start ART immediately but rather be supported to make an informed choice regarding when to start ART.

Three (3) sequential enhanced adherence counselling sessions should be conducted in group and/or individual counselling sessions to help clients and caregivers to understand basic HIV knowledge as well as the importance of excellent adherence to ART and care plans. The initial treatment literacy and adherence counselling session is conducted on the date of ART initiation. The subsequent adherence counselling sessions may either be telephonic or face-to-face depending on availability of the client and caregiver. A literacy form guides the sequencing and documentation of treatment literacy and adherence sessions with outcome of the assessment and plans. More frequent or intensive contact may be provided based on the clinical judgement of the counsellors and clinicians.

Table 8.1: Topics for ART Preparation and Adherence Counselling Sessions

Basic HIV knowledge	▪ Modes of transmission of HIV and how HIV is not transmitted ▪ Signs and symptoms of HIV ▪ The difference between HIV and AIDS ▪ Disease progression ▪ Significance of viral load and CD4 count ▪ Importance of testing partners and biological children
ART	▪ Names of ARVs (including brand names) ▪ How and when to take ARVs ▪ Side effects of ARVs and management ▪ Immune reconstitution Inflammatory Syndrome (IRIS) ▪ Importance of bringing all medications to clinic visits ▪ Anticipated monitoring schedules, both clinical and laboratory ▪ Importance of adherence; taking 95-105% of prescribed doses to suppress viral load and prevent resistance ▪ Treatment is lifelong even when one is feeling well
Medication Adherence	Explain why adherence is needed and that it includes: ▪ Taking ART as prescribed ▪ Attending appointments on time ▪ Participating in ongoing counselling and education ▪ Picking up medication when scheduled ▪ Avoiding risky behaviours ▪ Delivering a baby at a health facility ▪ Psychosocial support On the other hand, non-adherence includes: ▪ Missing blood draw appointments ▪ Refilling medication late ▪ Skipping clinical reviews ▪ Missing doses of ART ▪ Taking medications at different times every day ▪ Taking treatment 'holiday'

U = U Messaging	▪ U=U messaging should be emphasized along the counselling continuum i.e. HIV testing, initiation of ART, adherence support, peer support ▪ It serves to encourage clients to take and adhere to treatment and prevention. ▪ U=U is an abbreviation for Undetectable = Untransmittable o It means that someone on ART with an undetectable viral load cannot sexually transmit HIV, even if not using condoms or PrEP. ▪ U=U is also part of an international campaign to raise awareness about this benefit of ART treatment as prevention. **Key messages** *How can someone living with HIV not be infectious?* ▪ When HIV viral load is undetectable, there is too little virus for an infection to occur. Even though someone on ART is still HIV positive, HIV sexual transmission is no longer a risk. ▪ Infections need a certain quantity or concentration of virus for transmission. For example, viral load might need to be above 200 copies/mL to be infectious. The actual upper limit is not known.
Other relevant and practical issues	▪ **Importance of cancer screening, proper nutrition, safe water, immunizations, and primary care** ▪ **Re-assessment of understanding of basic HIV and ART knowledge** ▪ **Discouraging use of unstudied and unproven medical and herbal therapies for HIV, including traditional medicines** ▪ **Screening for common OIs, especially TB** ▪ **Encouragement of disclosure to family, partners, and other caregivers who can support the treatment plan** ▪ ***Infants*** **- Demonstration to caregivers how to draw syrups into syringes and applying other measures, such as marking of syringe to indicate proper dose measurement** ▪ ***Children*** **- Teaching caregivers how to administer dissolvable tablets, granules or pellets** ▪ **Referrals to differentiated service delivery including facility- based and community-based peer support**

Issues to consider in children

Psychosocial factors: It is important to identify and counsel at least one dedicated caregiver who can supervise and/or give medicines. It is strongly encouraged to educate and counsel all caregivers who are involved in the care of the child and who may assist with medication administration.

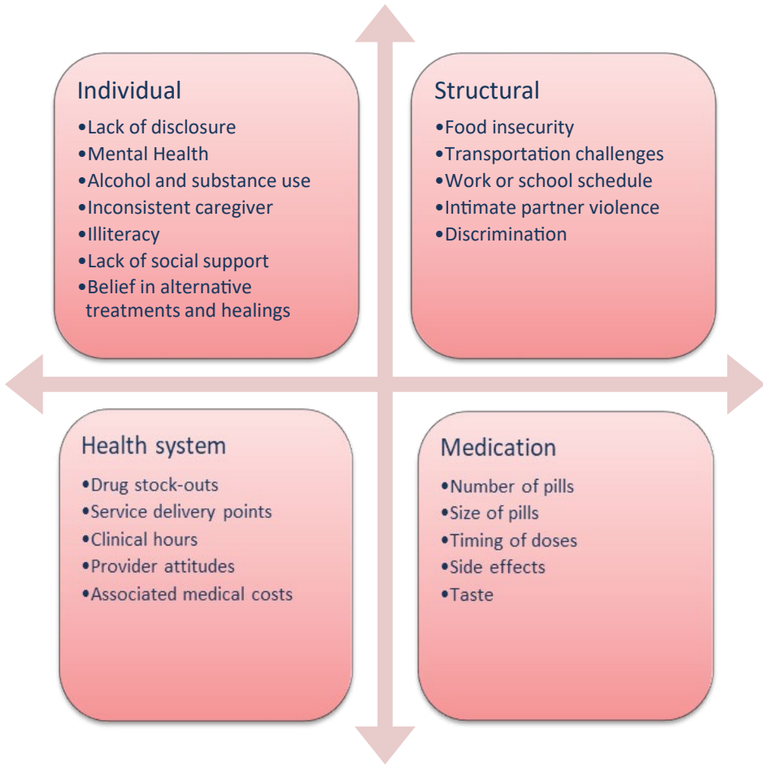
Disclosure: The process of disclosure to the child should be initiated as early as possible, usually from as early as 5-7 years of age. Disclosure is a process and children will move through the process at different speeds. Reinforce previous counselling at each visit and build upon child's knowledge and understanding. ART adherence is improved in children and adolescents who know their HIV status and are supported to adhere to medicines. See Annex 5 for additional information.

Weighing: It is important for both healthcare providers and caregivers to know that children have to be weighed on a regular basis in order to adjust the ART dosage as the child grows. Certain regimen such as (ABC/3TC or AZT/3TC) plus DTG once the child reaches 35kg and TDF is not contraindicated should be transitioned to TLD (TDF/3TC/DTG), this can only be identified if the weight of the child is frequently monitored.

SECTION 8.2: BARRIERS TO ADHERENCE

Barriers to adherence should be discussed with the client and caregiver prior to initiation of ART. Adherence does not depend solely on the client's or caregiver's understanding of HIV and ART or ability to remember to take medications.

Figure 8.1: Barriers to Adherence



Strategies to Address Barriers to Adherence

Once potential barriers have been identified, attempts should be made to help clients and caregivers overcome them. The examples below are not exhaustive.

Table 8.2: Addressing Adherence Barriers

Barrier	Strategy
Poor understanding of HIV and ART	Provide adherence education to clients and treatment supporters.
Lack of disclosure	Discuss client fears on disclosure and develop a disclosure plan together with the client. Support client to disclose to partner or family. Assist caregivers to disclose to children.
Pill burden	Use fixed-dose combination pills
Forgetting doses	Use of pill boxes or phone reminder alarms. Keep medications where they are easily seen.
Illiteracy	Use pictorial education materials.
Limited social support	Refer to community health workers. Enrol in support groups.
Full-time employment	Extend hours of service.
Migrant worker	Early adoption of multi-month dispensing

Both group and individual counselling should be provided for caregivers of children. Include children in counselling sessions appropriate for age and understanding. Counsel adolescents individually and with caregivers. Peer support is particularly important for adolescents.

Readiness Assessment

In 2016, the MOH launched test and treat guidelines to remove medical, socioeconomic and physical barriers to ART initiation. ART should be started once readiness has been agreed between the client (or caregiver) and the health care provider.

The health care team needs to assess and work towards supporting all newly tested HIV positive clients to understand the benefits of same day ART initiation. A client's/caregiver's ART readiness assessment should consider the following:

- General understanding of HIV, AIDS, ARVs, CD4 count/percentage, viral load, and their relationship with health status
- Understanding importance of keeping appointments and adhering to care plan
- When applicable, successful adherence to co-trimoxazole, TB therapy, TPT, and other chronic medication
- Presence of support network in family/community to assist with treatment adherence and medication reminder
- Understanding roles of different household members in drug administration with counselling of relevant household members
- Discussion of adherence strategy, including medication schedule and methods for remembering
- Client's/caregiver's desire and commitment to taking lifelong therapy
- Household conditions of drug storage met

For children and adolescents, collaboration between the child, caregiver and the multidisciplinary team is paramount. The following should also be considered during readiness assessment:

- Identification of all caregivers involved in medication administration
- Commitment of the caregiver(s)
- Cooperation of the child
- Skills for monitoring and supporting adherence by treatment supporter and/or Community Health Worker
- Provision of linkages to community support

Treatment for children must also cater for:

- Age and developmental stage of the child
- Child-caregiver interactions
- Psychosocial issues
- Drug administration: syrups, granules, pellets, tablets
- Communication among family members or between parents regarding the child's HIV status and/or ART schedule
- Supporting disclosure for older children and adolescents

A supporter or treatment buddy is strongly encouraged for adults but is not a pre-requisite for the initiation of treatment. The health facility can assist the client to identify a supporter who should live within a walking distance of the client's home. For children, a reliable, consistent caregiver should be identified to give medicines to the child and bring the child for clinic visits. If possible a second caregiver should also be identified to assist with medications when the primary caregiver is unavailable. Older siblings who are not yet adults should not be given the primary responsibility for administering ART to younger siblings. Older children and young adolescents should still be supervised by their caregiver in taking their ART.

The client's readiness to start ART should be documented prior to initiation of therapy. It is important to thoroughly assess and address the client's psychosocial and economic issues as part of adherence counselling.

SECTION 8.3: MAINTAINING ADHERENCE

Adherence is a lifelong process and continued assessment and education must be done at every opportunity to ensure the success of ART. At each visit, adherence must be assessed using the following parameters:

ARV pill count or suspension return: In order to perform pill counts, the pharmacy must document the date ARVs were dispensed and the number of pills dispensed. Adherence calculation should be document in the patient's bukana and their file at every visit. To perform pill counts, the pharmacy must document the date ARVs were dispensed and the # of pills dispensed.

$$\% \text{ Adherence} = \frac{\text{(\# Pills taken)}}{\text{(\# Pills prescribed)}} = \frac{\text{(\# Pills given) - (\# Pills remaining)}}{\text{(Daily dose) x (\# Days since refill)}} \times 100$$

Example:
On January 1, a client received 90 pills of TDF/3TC/DTG. Her prescribed dose was 1 tablet of TDF/3TC/DTG in the morning.

The client returns for a refill March 29th (88 days since prescription filled). You count 6 pills left in the bottle. Therefore, she has taken a total of 84 pills (90 - 84 = 6). She was prescribed 1 pill per day multiplied by 88 days. She should have taken 88 pills. She missed 4 doses of medication.

$$\% \text{ Adherence} = \frac{\text{(90 Pills given) – (6 Pills left)}}{\text{(1 Pill/day) x (88 Days since refill)}} \times 100 = 95\%$$

Quantitative questioning:

- "How many doses of ARVs have you missed over the past 3 days?"
- "How many doses of ARVs have you missed over the past month?"

Qualitative questioning:

- "What problems have you encountered when taking your ARVs?"
- "What are the names of your medications?"
- "How often do you take (give) the ARVs?"
- "What time do you take (give) the ARVs?"
- "How many tablets do you take (give) for each dose?"
- "How much syrup do you give for each dose?"
- "What problems do you have in giving your children their ARVs?"

Remember to use a multidisciplinary team approach: Doctor, nurse, counsellor, social worker, psychologist, laboratory technician, pharmacist, family, friends, support groups, community or village health workers, caregivers, and the CLIENT need to be involved to maintain adherence.
Help the client/family with adherence by:

- Providing education at every opportunity
- Discussing the importance of adherence at every visit or during telephonic followup support
- Asking the client/family to name or describe the specific medications (colour, #, size, or amount given)
- If any doses have been missed or adherence is too high (too much medication has been taken) (>105% for pills or >110% for syrups), ascertain the reason
- Asking the client/family to update you on living conditions and location
- If you expect problems and non-adherence; jointly create an adherence plan and schedule follow-up

Dealing with Poor Adherence

If adherence is questionable (< 95% for pills and syrups or >105% for pills and >110% for syrups):

- Identify barriers to adherence and assist with interventions/strategies to overcome
- Repeat adherence counselling either telephonically or face to face
- Increase frequency of monitoring
- Emphasize the importance of honest reporting of poor adherence (normalize imperfect adherence) in order to explore for pill tossing (e.g. adherence calculations are good yet clinical status or lab tests suggest poor adherence)
- Perform home visits
- Use available community groups, peers and partners

Additional adherence considerations

Infants and young children:

- Emotional and physical support for caregivers
- Have at least two people knowledgeable about the child's medication and available to administer
- Help the family to create a realistic medication schedule

School-age children:

- Teach them how to count medication
- Help them discover foods that make medications more palatable

Older Children and Adolescents:

- Caregiver's control over the child's treatment should be subtle (one to one; not a public issue)
- Ongoing supervision of medication by caregiver
- Individual counselling with adolescents
- Encourage peer support, including adolescent support groups
- Provide discreet pill boxes for social events
- Use role play for problem solving
- Investigate multiple aspects of the adolescent's life. See Annex 19 on HEADSS Assessment for additional details.

Table 8.1: Understanding and Monitoring Adherence

Reason for non-adherence relating to drugs	Poor palatability and unpleasant flavour
	Number of pills or volume of syrup
	Frequency of dosing
	Nausea
	Fear of adverse effects (particularly if prior bad experience)
	Child's refusal
Reason for non-adherence relating to the family or individual	Lack of disclosure in the family and to the child
	Strangers or visitors in the house
	Lack of disclosure in the family and to the child
	Strangers or visitors in the house
	Parental/caretaker illness, mental health, drug/alcohol abuse
	Lack of belief in the value of the treatment
	Cultural, traditional or spiritual beliefs
	Responsibility for giving the medication residing with a specific member of the family
	Poor understanding/knowledge
	Denial of status or denial of medication benefit
	Lack of food security
	Lack of funding/transport to return to the clinic

Table 8.2: Tools to Improve Adherence

Tools for the client or caregiver	Colour coded bottles and syringes
	Pillboxes
	Diary cards to use as memory aid
	Encourage use of alarms (i.e. in cellular phones)
	Use of modern technologies, such as mobile SMS messages
	Link medication to specific times e.g. meals or television programmes
	Make use of treatment supporters in the community
	Regular visits to therapeutic counsellors
	Early switch to pills from syrups/suspensions
	Treatment buddies
Methods to measure adherence	Calculate pill count adherence at every visit and document in the client's file and bukana (see above for how to calculate)
	Check for late returns to both the clinic and the pharmacy (use ART card and Appointment Book)
	Ask about problems with specific drugs
	Look at diary cards
The clinic should:	Emphasize adherence at every visit
	Assist with disclosure within the family and to the child
	Help explain to children why they must take the drugs
	Provide or refer the caregiver for psychosocial support
	Assist with financial and food security through grants and referral to appropriate NGOs and departments, such as Social Development and Agriculture
	Encourage joining of support groups; tracing for missed appointments
	Involve Department of Social Development or CGPU in special circumstances, such as child neglect or abuse

If adherence continues to be poor despite adherence interventions, stopping ART in order to reduce the risk of resistance developing can be considered as a last resort and should only be done in consultation with an experienced HIV physician. Re-start ART once barriers have been identified and accordingly addressed.

Adherence Counselling must be

- Continuous and repetitive: At every visit
- Personalised: Tailored to the needs and situation of each client
- Universal: Reinforced by all health care providers

SECTION 8.4: ENHANCED OR INTENSIVE ADHERENCE COUNSELLING

Enhanced adherence counselling (EAC) is an ongoing process that involves a structured assessment of the current level of adherence, explores the specific barriers the client is facing, assists clients to identify solutions, and develops an individualized adherence intervention.

ART patients experiencing treatment failure (clinical, immunologic, or virologic) must receive enhanced adherence counselling (EAC) sessions to assess if suboptimal adherence is the primary reason for ART failure. Poor adherence is the most common reason for treatment failure followed by viral resistance. As a result, EAC sessions should thoroughly investigate a failing patient's adherence and explore for potential barriers to optimal adherence.

Any member of the health care team who is knowledgeable in ART adherence, adherence counselling, and treatment failure can conduct EAC sessions. This includes, but is not limited to, clinicians (physicians and nurses), counsellors (professional and lay), pharmacists and pharmacy technicians, social workers, psychologists, expert patients, and peer leaders. Lower-level cadres also involved in the care of ART clients, such as community health workers, can also participate in the enhanced adherence counselling process.

EAC sessions should begin as soon as treatment failure is identified and a minimum of 3 EAC sessions are recommended over a period of 8-12 weeks. PLHIV with treatment failure should have close follow-up with visits at the health facility and possibly the home.

The suggested topics to be covered in EAC sessions include but not limited to

- Relationship between viral load, CD4, clinical status and the risk of transmitting HIV to sexual partners (reduction of risk of transmission can be a powerful motivator).
- Inquire about the home situation (Who administers the medication? Do they do directly observed therapy?).
- Develop enhanced adherence plan (e.g. re-involve or identify new treatment supporter)
- Discuss strategies to mask taste of medications with unpleasant taste
- Institute directly observed therapy by an agreed upon person, such as caregiver, treatment supporter, or community health worker
- Conduct psychosocial assessment of client and/or caregiver.
- Complete a depression screening tool for the client and/or caregiver.
- Complete a substance abuse screening tool.
- If viral load monitoring is available, a repeat viral load should be taken after any adherence issues have been addressed and good adherence has been documented at 2 or more visits.

SECTION 8.5: DISCLOSURE

Disclosure is a process where information about a client's HIV status is shared with one or more people (spouse, children, parents, friends, caregiver, employer, or another person). **Disclosure of HIV is not a one-time event but rather a process involving ongoing discussion about the disease as the individual matures – emotionally, socially, sexually and cognitively.** A healthcare provider can help a client develop a plan to share information about his or her HIV status. This involves exploring the options of whom and when to tell. Disclosure is important for promoting the client's adherence to treatment, prevention and care. Those tested for HIV are encouraged and assisted to disclose their HIV status to sexual partners and family members. Deciding about disclosure is a serious issue for a person who has been diagnosed with HIV.

Benefits of Disclosure

Disclosure can help reduce stigma and discrimination, as it:

- Enables an individual to address issues of reducing transmission and getting support
- Promotes easy access to care, support and treatment services as well as adoption of safer behaviours to protect family and partners
- Creates a sense of empowerment and control over the HIV infection since the person is able to talk with friends or counsellors for advice and support
- Client can feel confident and no longer has to worry about having to disclose
- Client may be able to influence others to test and get appropriate services
- Openness about HIV status can stop rumours and suspicion.
- Potentially less behavioural problems with the child or adolescent client as it improves psychosocial well-being and mental health.
- Promotes positive long-term psychological impacts and allows for better self care and treatment among clients.
- Empowers clients to feel more in control of their health and body

Types of disclosure

Full disclosure: Providing full information and knowledge about HIV

Complete non-disclosure: Maintaining complete secrecy around diagnoses.

Accidental disclosure: Revealing the HIV diagnosis without preparation and disclosing it by accident. It usually done unintentionally when the HIV information is being discussed and the conversation is overheard. The HIV diagnosis may be accidentally disclosed to the client or to another person.
Partial disclosure: Information is provided in a step-wise manner. Partial disclosure if often used with children to describe their illness without naming HIV.
Deception: Ascribing the condition to a different illness or linking behaviours and appearance (e.g. wasting due to not eating enough). Deception is frequently coupled with non-disclosure. Deception is NOT recommended for children or adolescents living with HIV.

Disclosure to a sexual partner, family member or friend

After undergoing HTS, it is critical for the individual to be empowered to make an informed decision about disclosure of their HIV status. Disclosure of one's HIV status to sexual partner(s), family members or friends is a crucial step in preventing HIV transmission as well as getting needed support to positively live with HIV and AIDS.

When people learn about their HIV positive status, they may need time to absorb and accept the diagnosis before they are ready to share it with another person and as such, they do require ongoing counselling for disclosure. While disclosure benefits sexual partners, the individual's social context must be taken into consideration. For example, HTS providers and counsellors should assess the risk of intimate partner violence and make appropriate referrals if necessary.

Partner Notification Services (PNS)

Partner notification is a voluntary process where trained health workers, including HTS providers, ask people diagnosed with HIV about their sexual partners and, with the consent person living with HIV, offer these partners voluntary HTS. Voluntary assisted partner notification services should be offered as part of a comprehensive package of testing and care offered to people with HIV. Accepting index testing services for one's sexual partners and or contacts does not force the PLHIV to disclose; however, disclosure is encouraged.

Disclosure should not proceed if the client has any concerns about risk of IPV or that there could be severe social ramifications (such as a partner who then discloses to the whole community, loss of employment, etc). Exploration of these concerns must preceed disclosure

Technology can be used to strengthen partner notification through use of text messaging, telephone calls, e-mail and other internet-based communication systems to encourage contacts of newly diagnosed PLHIV to access HIV services and encourage disclosure.

Disclosure to other Health Workers

Shared confidentiality or disclosure by a health worker to other health workers involved in the client's care is a type of disclosure. Clients who test HIV positive must be informed that their diagnosis may be shared with other health care providers to ensure appropriate medical care from the different health care workers. Such disclosure should respect their basic right to privacy and confidentiality of all medical information.

Disclosure by a health worker to employers, police or other legal authorities

This is unlawful and unethical and does not benefit the client. Such disclosures are only permitted if the client has given a written consent for his or her HIV status to be disclosed or where required by a Court of Law through a court order. HTS providers should refer legal requests to a Medical Practitioner or Facility Manager for action.

Disclosure Skills

Skills for supporting clients to disclose include assessing the client's readiness for disclosure:

- Make sure that it is what the client wants to do and assist him/her to plan
- Help the client to take time to accept their status and decide who, how, and when to disclose
  - Ensure that they are ready and comfortable to disclose
  - Choose someone they can trust and who is likely to support them.
  - Choose a time when the person to be disclosed to has enough time to listen and is in a good mood
  - Choose a place that is comfortable and private
  - Think about how the person will react and plan for their possible response
- Empower the client to disclose appropriately and safely by:
  - Providing the client with information and support that can help him/her live positively
  - Emphasising the need for discussing with sexual partners who need protection against infection (PrEP, PEP and SRH services)
  - Facilitating role plays such as 'empty chair' rehearsals where the individual client practices disclosure alone but pretending that the person is sitting next to him/her in an empty chair
  - Emphasising the importance of speaking calmly and clearly
  - For further details on disclosure, refer to the National HIV Testing Services Guidelines.

Disclosure Reactions

Children, adolescents and adults may all experience and express a range of emotions upon learning the HIV status of themselves or others. Expect the following possible feelings after disclosure:

- Shock
- Anger
- Sadness/Depression
- Fear
- Confusion
- Rejection
- Isolation
- Relief
- Acceptance
- Self stigmatization or perceived stigma

Disclosure of HIV in Children

Informing HIV-positive children about their status should be age-appropriate and is recommended for all children. Disclosure of HIV status in children is not a single event, but rather a process. It involves ongoing discussions about the disease as the child matures cognitively, emotionally, and sexually. Partial disclosure should start gradually from the age of 5 years. Full disclosure to adolescents ≥10 years old regarding their positive HIV status prior to initiation of treatment is especially important to ensure adherence. Whenever possible, disclosure should occur when a child is clinically and emotionally stable and the caregiver is ready. Although the process should not be rushed, disclosure should happen before the child enters adolescence. The timing will depend on caregiver's acknowledgment of the disease and readiness to disclose, the child's cognitive skills and emotional maturity and ability to maintain confidentiality. Disclosure should be done by the caregiver with assistance from the clinical team.

Children informed about their diagnosis have better coping mechanisms and higher self-esteem than children who are not disclosed to. In addition, children and adolescents who have been disclosed to tend to have better adherence .

Disclosure is beneficial to the child, as it may:

- Provide developmentally- appropriate and truthful explanations of the disease and help children understand their illness;
- Validate the child's concerns and clarify misconceptions; and
- Increase the child's willingness to adhere to ART and consequently, improve his or her social functioning and school performance by improving health and decreasing stress.

Process of Disclosure

"Disclosure of HIV infection status to children and adolescents should take into consideration their age, psychosocial maturity, the complexity of family dynamics and the clinical context."21

What the caregiver says during the process of disclosing to a child depends on the following:

- Age of the child – chronological age and mental age of the child
- Maturity of the child socially, sexually, emotionally and cognitively
- What the child already knows
- Personality of the child
- Illnesses the child has had
- Whether the child is on ART or not
- Health of others in family
- Recent stressors

When disclosing, the 5 C'S need to be considered: parental or caregiver's consent, confidentiality in adolescent services, appropriate and high-quality counselling, correct test results and linkage to appropriate care.

- Private location
- Planned in advance
- Guide the child regarding who they can talk to about their status
- Progressive disclosure is preferable to "all at once"
- Provide follow-up support

Committee on Pediatric AIDS. Disclosure of illness status to children and adolescents with HIV infection. Pediatrics. Jan 1999.

Disclosure Guidelines by Age

For children (5-9 years):

- Simple appropriate information in a language they can understand
- Nature of illness – explain the principles of infection, disease and the immune system
- How they can care for themselves
- The near future
- Note that diagnosis and prognosis are not a priority at this stage.

For adolescents (10-19 years old):

- It is recommended that they should be informed of their status
- Discuss and plan disclosure with parents
- First determine what they already know; may ask if they know why they are coming to clinic/getting blood drawn
- Information should be specific and accurate
- Provide moderate amounts of information at each visit
- Assist in developing coping mechanisms
- Talk about who/what they can tell others
- Counsel on the empowerment for living positively
- Discuss all aspects of the disease:
- Basic nature of the HIV virus and disease progression
  - Transmission and Prevention; this includes age appropriate information about sexuality and the fact that successful treatment and achievement of an undetectable status will prevent transmission to others.
  - Diagnosis and Prognosis
  - Self-care and self-medication
  - Drug Resistance
  - Living Positively
  - Sexual health education

It is important to help children cope with their diagnosis, care and treatment. Ways to help children cope include:

- Problem-solving with the client
- Empowering them
- Help the child/adolescent take one step at a time
- Reassure and comfort the child.
- Peer support

CHAPTER 9: OPPORTUNISTIC INFECTIONS, CO-INFECTIONS, ADVANCED HIV DISEASE & CO-MORBIDITIES

INTRODUCTION

People living with HIV continue to be at higher risk of developing infections and cancers. Opportunistic infections (OIs) are diseases that are associated with advanced or severe immunodeficiency and primarily categorized as WHO clinical stage 3 or 4 diseases. Due to the immature immune system of infants, opportunistic infections may occur despite a high CD4 count or CD4 %. Thus, HIV-infected children are more susceptible and vulnerable to severe life-threatening opportunistic diseases and must be monitored closely and treated aggressively.

In sub-Saharan Africa, more than a third of all people with HIV initiating ART have advanced HIV disease (AHD). AHD is defined in adults, adolescents, and children > 5 years as a CD4 count <200cells/mm3 or WHO stage 3 or 4 event. All children < 5 years old presenting with HIV infection not on effective ART are considered as having AHD. **Note children less than 5 years old who have been receiving ART for more than one year and are clinically stable do not have AHD.**

PLHIV with AHD are highly susceptible to the development of OIs such as tuberculosis (TB) and cryptococcal meningitis (CM), which are the leading causes of HIV-associated deaths in Sub-Saharan Africa. Despite an excellent HIV program in Lesotho exemplified by LePHIA 2020 results which indicate that the country has achieved the UNAIDS 90-90-90 Fast-Track targets for 2020, HIV-associated mortality has remained persistently high, with approximately 6,000 people dying annually from AIDS-related complications.

Objectives

- Provide basic knowledge on common opportunistic infections among PLHIV
- Provide knowledge on CD4 testing eligibility among PLHIV
- Describe Advanced HIV Disease (AHD)
- Define eligibility for TB_LAM and CrAG_LFA testing among PLHIV
- Describe management of clients with AHD
- Equip providers to diagnose and manage common opportunistic diseases such as TB, Cryptococcal Meningitis

Summary recommendations

PLHIV are at a higher risk of developing infectious diseases and various cancers, especially those with AHD. People with AHD need to be screened for common opportunistic infections such as TB and Cryptococcal Meningitis. Rapid diagnostic tests that can detect these diseases are available and include TB_LAM for screening of TB through urine samples and CrAG_LFA for screening of Cryptococcal Meningitis through blood samples.

PLHIV with TB without any evidence of meningitis should be initiated on ART at the same time as initiation of TB treatment. PLHIV with TB Meningitis or Cryptococcal Meningitis should be initiated on ART within 4 to 6 weeks of disease specific treatment. All AHD clients that screen negative for TB or Cryptococcal Meningitis through history taking, physical examination, CrAG_LFA and TB_LAM are offered same-day ART initiation. Rapid ART initiation reduces morbidity and mortality among people with Advanced HIV Disease. Unlike PLHIV who are established on ART, AHD clients require intensive adherence support and frequent clinic follow ups.

SECTION 9.1: COMMON OPPORTUNISTIC INFECTIONS AND CO-INFECTIONS

Common HIV-associated illnesses are often the presenting clinical manifestations leading to the diagnosis of HIV. Although TB is the most common co-infection and is responsible for the highest number of deaths, there are other important diseases that should be considered and monitored in PLHIV. Diagnosis and treatment of opportunistic infections in PLHIV is an essential component of their package of care. Table 9.1 below presents common adult and paediatric OIs; their major presenting signs and symptoms; diagnostic investigations; and subsequent management. Specific infections are discussed in more detail in the remainder of the chapter.

Table 9.1: Common Opportunistic Infections and Co-Infections

Infection	Major Presenting Symptoms	Prophylaxis	Diagnosis	Management	Comments
Oral candidiasis (thrush)	White spots or plaques in the mouth, painful	None	Clinical	Nystatin suspension 100,000 IU 5x daily Miconazole oral gel 4x daily Fluconazole 200-400 mg x 7days (adults)	Nystatin troches may be used but can be less effective than a single dose of fluconazole or Miconazole
Vaginal candidiasis	Vaginal itching, white creamy discharge	None	Clinical KOH prep	Nystatin or clotrimazole pessaries Fluconazole 200-400 mg x 7days (adults)	Nystatin pessaries are used but can be less effective than a single dose of fluconazole
Oesophageal candidiasis	Retrosternal pain and/or vomiting Difficulty in swallowing	None	Clinical	Fluconazole 200-400 mg daily for 14-21 days (6 mg/kg daily for children)	
***Pneumocystis jirovecii* pneumonia (PCP)**	Sub-acute shortness of breath; dry cough; fever; hypoxemia. auscultation – normal or rales	CTX	Clinical. Chest x-ray	Adults: Cotrimoxazole two 960 mg tablets tds for 21 days + folic acid Pediatric: 120 mg/kg/day divided QID x 21 days	If dyspnoea is severe and the patient's clinical status critical, add prednisone 1mg/kg/day x 5 days then taper to 0.5 mg/kg/day for 16 days
Bacterial pneumonia	Fever, cough, fast breathing, acute onset	CTX	Clinical; chest x-ray	Amoxicillin 500mg TDS for 7-10 days (50 mg/kg/day for children)	Admit and give IV antibiotics if severe respiratory distress Consider PCP in infants and in those with severe immune suppression.
Mycobacterium avium complex (MAC)/Mycobacterium other than TB (MOTT)	Varied: Abdominal pain; cough; malaise	Azithromycin	AFB culture	Rifampicin Ethambutol Clarithromycin	Associated with very low CD4 (usually < 50) Initiate ART at same time of MAC treatment initiation
Toxoplasmosis	Headache, fever, seizure, focal neurologic signs (facial palsy, hemiparesis), confusion	CTX	Clinical Head CT: ring-enhancing lesions with oedema	Cotrimoxazole 1920 mg BD (60mg/kg/day) for 6 weeks plus folic acid 5mg daily	Consider steroids to reduce oedema
Bacterial meningitis	**Fever, headache, confusion, stiff neck, vomiting, bulging fontanelle**	**CTX**	**Lumbar puncture Head CT for focal neurologic signs**	**Ceftriaxone IV/IM 1-2 gm daily (100mg/kg daily) or Chloramphenicol 25 mg/kg QID**	**Consider head CT if no improvement or continued fevers and evaluation for TB meningitis**
Isospora Cryptosporidium Microsporidium	Persistent diarrhoea	CTX	Stool iodine stain	ART	Ensure good nutrition and rehydration
Giardia	Diarrhoea, bulky, foul-smelling stool, flatulence	CTX	Stool iodine stain	Metronidazole 400mg (10mg/kg) TDS x 5 days	
Typhoid	Fever without a focus, abdominal pain, diarrhoea or constipation		Blood or stool culture	Ciprofloxacin 500mg (15mg/kg/dose) twice daily x 7 days	Complications – peritonitis, perforation
Dysentery	Bloody diarrhoea, abdominal pain, fever, vomiting		Clinical, Stool culture	Ciprofloxacin 500mg (15mg/kg/dose) twice daily x 3 days	Additional antibiotics based on stool culture Ensure hydration
Acute tonsillitis or otitis media or gingivitis	Fever, pain, swollen tonsils, purulent drainage	CTX	Clinical	Amoxicillin 500mg (50-90 mg/kg/day divided TDS) x 5-7 days	If suspect epiglottitis, admit for IV antibiotics
Acute necrotizing ulcerative gingivitis	Ulcerative gingivitis with soft tissue loss of cheek and gums, teeth		Clinical	Ampicillin IV 25mg/kg QID *plus* Gentamycin 7.5 mg/kg daily *plus* Flagyl 10mg/kg TDS	Refer for urgent admission for debridement and reconstruction by Dental
Scabies	Itchy rash Burrows and papules in webs of fingers, wrists		Clinical KOH prep	Benzyl benzoate applied from neck down overnight and repeated in 1 week (dilute 1:1 with water for children 6 months – 5 years) Infants <6 months: Sulphur ointment nightly for 3 days	Boil clothing and bedclothes Treat family
Varicella (chickenpox)	Itchy popular rash in crops		Clinical Tzanck smear	Severe cases: Acyclovir 20mg/kg/dose QID x 7-10 days	Isolate away from other immune suppressed children
Herpes Zoster	Painful vesicles, dermatomal distribution		Clinical Tzanck smear	Acyclovir 800mg (20mg/kg/dose QID x 7-10 days Analgesics	Refer for urgent ophthalmologic exam if rash is near eye or on nose
Molluscum contagiosum	Umbilicated lesions		Clinical	ART	
Tinea (ringworm)	Round scaly itchy lesions with raised edges		Clinical KOH prep	Clotrimazole cream twice daily (body) 6 wks Griseofulvin 20mg/kg daily (scalp) x 6 wks	Monitor ALT if on griseofulvin and ART and/or ATT Give cloxacillin for superinfected lesions

Infection	Major Presenting Symptoms	Prophylaxis	Diagnosis	Management	Comments
Syphilis	**Painless genital lesions, rash**		**Clinical VDRL, RPR**	**Benzathine penicillin 2.4 MU IM weekly x 3**	**Treat partner and reinforce condom use**
Gonorrhoea, Chlamydia	Burning urethral discharge, Vaginal discharge		Clinical	Ciprofloxacin 500mg po stat **plus** azithromycin 1gm stat **plus** metronidazole 2g stat Replace Ciprofloxacin with ceftriaxone 250mg IM stat if pregnant	Treat partners and reinforce condom use Do not use ciprofloxacin or doxycycline if pregnant
HSV	Painful oral or pharyngeal ulcers Painful anal or genital ulcers	Acyclovir	Clinical, Tzanck smear	First episode: Acyclovir 400mg TID x 10 days Recurrence: acyclovir 400 mg TID x 5 days	Consider suppressive therapy for recurrent/severe episodes (>6/year)
HPV/genital warts	Painless, raised fleshy lesions	HPV vaccine	Clinical	Podophyllin 0.5% twice daily on 3 consecutive days weekly x 4 weeks	If no response to podophyllin, refer for surgical excision or curettage evaluation
CMV	Variable Malaise, visual loss, bloody diarrhoea. Vision loss		Clinical	ART Ganciclovir	Refer for urgent ophthalmology evaluation if concern for CMV retinitis Associated with CD4 < 50

Table 9.2: Other Common Presenting Conditions

Condition	Major Presenting Symptoms	Prophylaxis	Diagnosis	Management	Comments
Pruritic papular eruption (PPE)	Itchy papules, 2mm to 2cm		Clinical	Antihistamine Topical steroids if no response	Resolves with immune reconstitution with ART
Parotitis	Swelling of parotid gland; pain with mouth movement		Clinical	Analgesics	Associated with LIP and untreated HIV
Lymphocytic interstitial pneumonia (LIP), Chronic lung disease	Chronic cough, lymphadenopathy, finger clubbing	None	CXR Sputum culture for bacteria. GeneXpert to rule out TB	ART Antibiotics as for bacterial pneumonia and salbutamol for symptomatic flares Rule out TB	LIP is a paediatric disease Reticulonodular patter on CXR CLD - bronchiectasis, cystic changes
Kaposi Sarcoma	Reddish-purple or hyperpigmented dark flat or raised lesions on skin or mucous membranes		Clinical Biopsy	ART Chemotherapy (Bleomycin, Thalidomide, Vincristine)	Refer all patients with KS to oncology
Cervical cancer	Vaginal bleeding	HPV vaccine	PAP smear Or VIAC Biopsy	Colposcopy Hysterectomy	Early diagnosis improves outcomes
HIV advanced nephropathy (HIVAN)	Sub-acute (high blood pressure or oedema rare)		Proteinuria Elevated creatinine	ART Enalapril 2.5mg twice daily	Avoid TDF if CrCl < 50 ml/min or clinical signs of renal failure

SECTION 9.2: ADVANCED HIV DISEASE (AHD)

Despite the drop in the burden of morbidity and mortality associated with HIV infection as a result of increased ART, 1 in 3 people living with HIV present to care with Advanced HIV Disease (AHD). A growing number of PLHIV are returning to care with advanced disease following a period of treatment interruption. People with AHD are at particularly high risk of death, even after initiating ART, and this risk increases with decreasing CD4 cell count. The most common causes of death are tuberculosis (TB), cryptococcal meningitis (CM), toxoplasmosis, Pneumocystis jirovecii pneumonia (PJP) and severe bacterial infections.

Definition of AHD

Lesotho defines AHD in adults, adolescents, and children older than five years as CD4 cell count <200cells/mm3 or with a current WHO stage 3 or 4 event. All children < 5 years old presenting with HIV infection not on effective ART are considered as having AHD. **Note children less than 5 years old who have been receiving ART for more than one year and are clinically stable do not have AHD.**

Targeted CD4 testing is recommended for the identification of AHD: at baseline, for suspected treatment failure, and for those returning to care. **CD4 monitoring should continue until CD4 is >350 cells/mm3 and viral load is <1,000 copies/mL** and only start again if patients meet the above criteria. (See Table 5.3 for CD4 monitoring in children below 5 years of age.)

Relying on clinical staging alone risks missing substantial numbers of PLHIV with severe immune suppression. In a study from Zimbabwe, Uganda, Kenya, and Malawi, close to half the people with CD4 cell count <100 cells/mm3 were classified as having WHO clinical stage 1 or 2 disease .

Primary AHD Package of Care

A package of interventions including screening, treatment, and prophylaxis for major opportunistic infections, rapid ART initiation, and intensified adherence support should be offered to everyone presenting with AHD at all facilities within Lesotho. The package of care is summarized in Table 9.3.

Table 9.3: Components of the Package of Care for People Living with HIV

Intervention	CD4 Cell Count/ Eligibility Criteria	Adults and Adolescents	Children (0-10)
Sputum Xpert MTB/RIF as first test for TB diagnosis in symptomatic clients Sputum/non-sputum – AFB, Xpert	Any CD4	Yes	Yes
Urine TB LAM* for TB diagnosis in patients with symptoms and signs of TB	CD4 $\leq$200 cells/mm^3	Yes	Yes
Cryptococcal Lateral Flow Antigen (CrAG_LFA) screening	CD4 $\leq$200 cells/mm^3	Yes	No

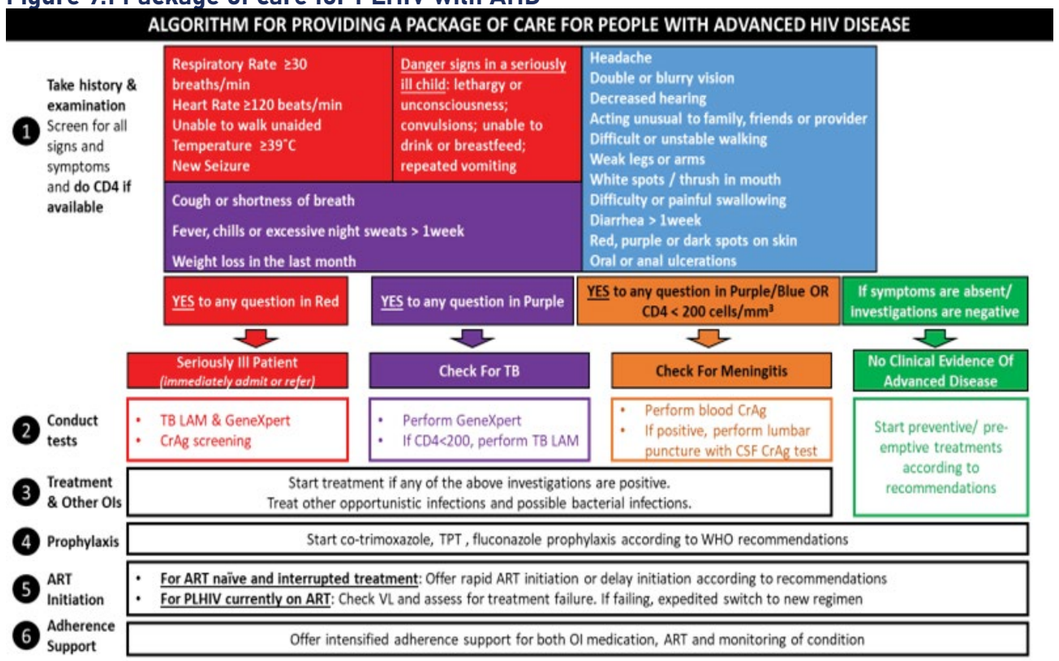
Guidelines for managing advanced HIV disease and rapid initiation of antiretroviral therapy. Geneva: World Health Organization; 2017 (https://www.who.int/hiv/pub/guidelines/advanced-HIV-disease/en, accessed 19 June 2020).

Key considerations for differentiated antiretroviral therapy delivery for specific populations: children, adolescents, pregnant and breastfeeding women, and key populations. Geneva: World Health Organization; 2017 (https://www.who.int/hiv/pub/arv/hiv-differentiated-care-models-key-populations/en, accessed 19 June 2020).

REALITY trial https://www.nejm.org/doi/full/10.1056/NEJMoa1615522

Prophylaxis and Pre-emptive treatment	**Co-trimoxazole prophylaxis**	**CD4 ≤350 cells/mm³ or WHO clinical stage 3 or 4 event**	**Yes**	**Yes**
	TB Preventive Therapy	Any CD4	Yes	Yes
	Fluconazole pre-emptive therapy for CrAg-positive patients without evidence of meningitis	CD4 ≤200 cells/mm³	Yes	Screening not advised
Rapid ART initiation	Rapid ART initiation	Any CD4	Yes	Yes
	Defer ART initiation if clinical signs and symptoms are suggestive of TB or cryptococcal meningitis	Any CD4	Yes	Yes
Adherence support	Tailored enhanced adherence counselling to ensure optimal adherence to the advanced disease package, including phone calls and home visits, if feasible	Anyone with AHD	Yes	Yes
*TB LAM also recommended for patients that are seriously ill (defined as (Temp >39ºC, respiratory ate >30/min, heart rate >120/min, unable to walk unaided) irrespective of CD4 cell count				

Figure 9.1 Package of care for PLHIV with AHD



Please note, the new accepted threshold for TB LAM screening is 200 cells/mm3

Clients with the following danger signs and symptoms should be prioritized for inpatient care for further investigations, management, and close monitoring:

- Respiratory rate > 30 breaths/minute
- Temperature > 39°C
- Heart rate > 120 beats/minute
- Altered mental status: confusion, strange behaviour, reduced level of consciousness (e.g., any component of GCS is abnormal; GCS ≤ 14/abnormal)
- Any other neurological problem: seizures, paralysis, difficulty talking, cranial nerve problems, rapid deterioration in vision
- Airway issues: new or worsening adenitis, with obstructive symptoms
- Unable to walk unaided

Rapid ART Initiation

Following a confirmed HIV diagnosis, all PLHIV are offered ART on the same day provided there are no contraindications to ART initiation. Clients should be fully informed of the benefits of ART. Rapid ART initiation is critical for people with extremely low CD4 cell count, for whom the risk of death is high.

People without clinical signs and symptoms of TB or other opportunistic infections and whose cryptococcal antigen (CrAg) test is negative should initiate ART the same day in combination with their package of prophylaxis. For PLHIV with CD4 cell count <200 cells/mm3 in facilities where CrAg testing result is not available on the same day, consideration could be given to starting fluconazole prophylaxis and discontinuing if the CrAg screening result is subsequently found to be negative.

Intensity of Follow-up and Adherence Measures for People Living with AHD

Due to the high risk of complications emanating from advanced disease and co-morbid conditions, closer in-depth follow-up is necessary for all AHD patients. This includes early identification and management of possible immune reconstitution inflammatory syndrome. Facilities should use a differentiated service delivery approach when managing these patients.

Referrals

Standard guidance on referral procedures should be followed:

- Inform client/caregiver and obtain consent
- Communicate with referral facility and set up appointments as appropriate
- Ensure complete documentation on referral forms or transfer letters and maintain appropriate records in facility
- Feedback and confirmation of linkage to referral site – document confirmation that client reached referral site
- Share feedback with referral sites as appropriate e.g., through use of community workers responsible for linkage and tracking, telephonic communication, etc.

When referrals are not feasible:

- Due to cost or distance constraints, advice should be sought from an experienced clinician and, where indicated, presumptive treatment started at the peripheral site.
- Referral and assessment should not result in unwarranted delays in starting ART and prophylaxis.
- Health care workers should carefully assess and balance the feasibility of more frequent visits and the client's ability to travel to the health facility.
- Consider all the conditions the client is being managed for and required follow-up dates to align visits e.g., integrating TB review, ART refill, laboratory monitoring, etc. into a single appointment to maximize on services provided per visit.

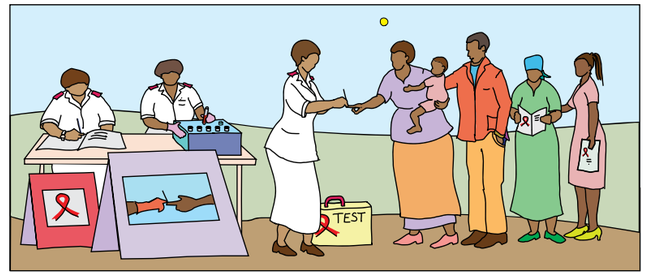


Table 9.4: Recommendations Regarding Appropriate Level of Care for Patients with AHD

Condition	Level of care	Recommended care
Danger signs	Hospital	Admitted/referred with review by medical doctor or nurse clinician for further investigation and management and close monitoring
Cryptococcal Meningitis	• Hospital for induction phase • May be managed at local health facility or via home-based care once stable* in the consolidation or maintenance phases	Follow guidelines on monitoring of clients while on Amphotericin-B and Flucytosine
Tuberculosis	Community based care with reviews at health facility unless: • Danger signs • Co-morbidity requiring admission • Severe forms of TB requiring close monitoring e.g. meningitis with danger signs	
* If condition deteriorates patient must be referred back to the hospital (this includes signs of raised intracranial pressure: headache, nausea, vomiting, increased blood pressure, decreased mental abilities, confusion about time and then location and people as the pressure worsens, double vision, pupils that don't respond to changes in light, seizures, loss of consciousness, coma, and cranial nerve palsies such as eye movement problems)		

Clinical Follow up schedule

Individualized assessment should be done to determine intervals between clinical assessment visits for AHD clients, e.g. consider TB or chronic illness reviews and management. As indicated above, AHD clients require more intensive follow-up and monitoring so that new issues, such as IRIS events, can be promptly diagnosed and managed. The Lesotho AHD manual recommends an additional 8 week visit during which standard assessment including staging, OI screening, adherence assessment, clinical exam (including weight) etc. should be done. (See Table 7.1 for monitoring schedule.)

Missed appointments

Adequate adherence counselling should be provided to clients and their treatment supporters prior to ART initiation to ensure clients understand the importance of adhering to clinic visit schedule. Facilities should ensure use of existing resources to maximize ability to conduct and monitor adherence to clinic visits. This includes ensuring efficient patient flow, conducting integrated outreach and other differentiated delivery models, use of mobile health services (e.g. SMS reminders, integrated patient tracking standards) as well as ensuring clear and complete documentation of all client interactions.

Recognition of clients with missed appointments should occur within 24 hours of missed clinic visit and active tracking should be done through phone calls the next day. Physical tracking should then follow if client does not return to facility within 5 days.

Adherence Support

Intensified adherence support is recognized as benefiting people with AHD. Such support may be provided at the time of diagnosis and initiation of ART and during episodes of acute illness, both while hospitalized and during the immediate discharge period. Appropriate measures, contingent on the barriers to adherence identified for the client, it should be taken[29] .

[29]Guidelines for managing advanced HIV disease and rapid initiation of antiretroviral therapy, July 2017. Geneva: World Health Organization; 2017. License: CC BY-NC-SA 3.0 IGO.

Table 9.5: AHD Specific Adherence Barriers and Recommended Measures

Barriers to adherence	Recommended measures
Increased pill burden due to OI treatment, prophylaxis, etc.	• Use fixed-dose combination pills
Physical challenges in attending clinic appointments	• Home-based follow-up • Integrated outreaches • Ensure clinic visits are aligned to minimise number of required visits
OIs affecting cognition or HIV encephalopathy leading to decreased understanding and remembering of adherence messages	• Treatment supporters including community health workers • Repetition of simplified advise to improve memory
Drug interactions and side effects	• Review possible drug interactions and ensure rational prescribing • Prevent and manage side effects • Provide client education, monitoring, and symptomatic treatment as appropriate

Post Hospital-Discharge Care

Admitted patients who are clinically stable can be discharged with defined post-discharge care. Assistance from a knowledgeable treatment supporter is recommended. Where possible, link to community health workers to support care of the clients. Dates for the next appointment must be documented, understood by clients, and aligned to monitoring requirements for all client conditions requiring post-discharge review. Summary records of the client's care during admission should be documented including history, examination, laboratory investigations, final diagnosis, and inpatient management.

Referral mechanisms and optimal communication following discharge back to the health centre or lower-level hospital is needed to ensure appropriate follow-up (such as continuation of fluconazole, TB treatment or the timing of switch to 2nd-line ART for those on a failing regimen). People discharged after hospitalization for AHD may also require more intensive follow-up as studies have shown high mortality in the first month of ART. For referrals, complete the referral form and send back to the referring hospital for record keeping and learning.

SECTION 9.3: MANAGEMENT OF TUBERCULOSIS

Clinical Presentation and Screening
Pulmonary Tuberculosis (PTB)

Over 90% of patients with PTB develop a cough soon after disease onset.

- The most common symptoms of PTB are:
  - Persistent cough for > 2 weeks
  - Fever
  - Night sweats
  - Weight loss
- Other features include sputum production which may be blood stained (haemoptysis)
- General non-specific symptoms to look for include shortness of breath, chest pain, a general feeling of illness (malaise), tiredness, and loss of appetite.

In children, TB may not present the same way as in adults. It is primarily the result of primary infection not reactivation disease. Although extra pulmonary TB (EPTB) is more common than in adults, PTB is the most common presentation of TB disease in children.

- Signs and symptoms of TB disease in children include:
  - Cough for ≥ 2 weeks
  - Feelings of sickness or weakness, lethargy, and/or reduced playfulness
  - Growth failure or weight loss
  - Fever
  - Night sweats
  - Swollen lymph nodes, especially cervical (in the neck)

Tuberculosis can affect any organ system and symptoms of EPTB will depend upon the site affected.

Table 9.6: Clinical Characteristics of Extra-pulmonary Tuberculosis

Suspect EPTB in patients with:	• Unintentional weight loss with night sweats and temperature > 37.5 °C or feels feverish • Breathlessness (effusion/pericarditis) • Enlarged glands in neck/armpit • Chest X-ray ○ Large heart (especially if symmetrical and rounded) ○ Pleural effusion ○ Enlarged lymph nodes inside the chest • Chronic headache or altered mental state
Look and listen for:	• Swollen lymph nodes in the neck or armpits: ***Possible TB adenitis*** ○ Fine needle aspiration can provide laboratory confirmation • Signs of fluid in the chest: ***Possible TB pleural effusion*** ○ Absent breath sounds ○ Reduced chest wall movement ○ Dull to percussion • Signs of fluid around the heart: ***Possible TB pericarditis*** ○ Heart sounds distant ○ Swollen legs and/or abdomen ○ Neck and hand veins distended with arm held above the shoulder • Signs of meningitis: ***Possible TB meningitis*** ○ Neck stiffness ○ Confusion ○ Abnormal eye movements

Diagnosis

All persons (regardless of HIV status) with clinical features suggestive of PTB must submit sputum for bacteriological diagnosis (GeneXpert, culture). TB testing may be integrated with COVID-19 testing, ensuring screening is done for both infections.

As infants and children are unable to provide sputum for diagnostic purposes, sputum induction or gastric aspirate is recommended for all children with presumptive TB so as to get sputum/gastric aspirates for bacteriological diagnosis. **Note that children have pauci-bacillary disease and a negative sputum result does not rule out TB disease.** Additional diagnostics might be indicated. Consult paediatric specialists for assistance.

PLHIV may also present with pauci-bacillary disease. Many patients with AHD are not able to provide a sputum sample. Sputum samples may not be of sufficient quality and volume for TB diagnostic testing. Urine is easier to collect. Tests based on the detection of mycobacterial lipoarabinomannan (LAM) antigen in urine have emerged as potential point-of-care tests for TB. LAM antigen is a lipopolysaccharide present in mycobacterial cell walls, which is released from metabolically active or degenerating bacterial cells and appears to be present only in people with active TB disease. Urine-based testing has advantages over sputum-based testing because urine is easy to collect and store and lacks the infection control risks associated with sputum collection. LF-LAM has sensitivity of 50 – 70% depending on CD4 count. Use of LF-LAM Ag test in the TB testing algorithm increases bacteriological confirmation of TB disease.

When to use LF-LAM?

The LF-LAM urine test assists in the diagnosis of active TB in adults, adolescents and children living with HIV:

- PLHIV with AHD with signs and symptoms of TB (pulmonary and/or extrapulmonary) should receive a LF-LAM test, regardless of CD4 count.
- Clients who are seriously ill (respiratory rate >30/min, temperature >39°C, heart rate >120/min, and unable to walk unaided) should receive a LF-LAM test, regardless of CD4 count.
- Children living with HIV who are seriously ill.
- LF-LAM sensitivity is highest in adults living with HIV, irrespective of signs and symptoms of TB, and in inpatient settings (sensitivity 62%, specificity 89%). Unlike traditional TB diagnostic methods, LF-LAM is more sensitive as the degree of immunodeficiency increases, defined by decreasing CD4 count. In other words, the test works better in those with AHD.
- A negative LF-LAM result does not indicate that a patient is negative for TB, but instead that further investigation may be required.
- Clinicians should initiate TB treatment immediately based on a positive result of the LF-LAM test.

Table 9.7: Recommended investigations for EPTB

Anatomical site	Recommended investigations
TB adenitis (especially from cervical region)	• Fine needle aspiration for GeneXpert and cytology • Sputum if coughing for GeneXpert • Urine LF-LAM test
Miliary TB	• Sputum if coughing for GeneXpert • CXR • Blood culture for *Mycobacterium tuberculosis* • Perform additional diagnostic tests as appropriate for associated symptoms and signs, e.g. Lumbar puncture for GeneXpert if TB meningitis is suspected • Urine LF-LAM test
TB meningitis	• Lumbar puncture for GeneXpert, WBC count and differential, biochemical analysis (protein and glucose), culture and DST • Sputum for GeneXpert • CXR • Urine LF-LAM test
Pleural effusion	• CXR • Pleural tap for GeneXpert, WBC count and differential, biochemical analysis (protein and glucose), culture and DST • Sputum for GeneXpert • Pleural biopsy for histology • Urine LF-LAM test

Abdominal TB	• **Abdominal ultrasound for ascites, lymph nodes, hepatosplenomegaly** • **Ascitic tap for GeneXpert, WBC count and differential, biochemical analysis (protein and glucose), culture and DST** • **Sputum for GeneXpert** • **CXR** • **Urine LF-LAM test**
TB of spine/bones/joints (osteoarticular TB)	• Spinal X-ray • Joint tap for GeneXpert, WBC count and differential, biochemical analysis (protein and glucose), culture and DST • Synovial biopsy for histology and GeneXpert • Sputum for GeneXpert • Urine LF-LAM test
Pericardial TB	• CXR • Echocardiogram for pericardial thickening and effusion • Pericardial tap for GeneXpert, WBC count and differential, biochemical analysis (protein and glucose), culture and DST • Sputum for GeneXpert • Urine LF-LAM test
Neonatal TB	• Evaluation of mother for tuberculosis • Chest x-ray • Lumbar puncture for GeneXpert, WBC count and differential, biochemical analysis (protein and glucose), culture and DST • Gastric aspirates for GeneXpert • Histopathology examination of the placenta for AFB and granulomata. • Neonatal abdominal ultrasound for portal lymphadenopathy and primary liver focus
Drug resistant TB – any anatomical site	• Culture and DST of relevant specimens
Renal TB	• Early morning urine for GeneXpert, culture and DST • Ultrasound • Urinalysis

Management of Active Tuberculosis

For detailed management of tuberculosis, refer to National TB Guidelines.

All new TB cases will be treated according to the drug susceptible treatment regimen for a New TB Case which involves administration of RHZE (rifampicin, isoniazid, pyrazinamide, ethambutol) in the first 2 months (intensive phase) and RHE in the 4 months of continuation phase. The recommended treatment regimen for new cases is represented as 2RHZE/4RHE. Clients should receive pyridoxine while on isoniazid in order to prevent peripheral neuropathy.

Table 9.8: Recommended treatment regimens and dosages for new adult TB cases

Phase of treatment	Drugs	Weight in kg			
		30-39	**40-54**	**55-70**	**>70**
Intensive phase of 2 months	**(RHZE)*** (150mg/75mg/400mg/275mg)	2 tabs daily	3 tabs daily	4 tabs daily	5 tabs daily
Continuation phase of 4 months	**(RHE)** (150mg/75mg/275mg)	2 tabs daily	3 tabs daily	4 tabs daily	5 tabs daily

Lesotho Ministry of Health. National Guidelines for Drug Susceptible Tuberculosis. 2019

Table 9.9 Recommended dosages for TB Treatment in Children

Weight (kg)*	**Intensive phase (2 months)**		**Continuation phase (4 months)**
	RHZ (paediatric) 75/50/150 mg	Ethambutol 100 mg	RH (paediatric) 75/50 mg
4 - 7.9 kg	1 tablet	1 tablet	1 tablet
8 - 11.9 kg	2 tablets	2 tablets	2 tablets
12 - 15.9 kg	3 tablets	2 tablets	3 tablets
16 - 24.9 kg	4 tablets	3 tablets	4 tablets

* Follow adult dosing for children weighing 25kg or above.

Previously treated patients

Previously treated TB patients require further investigations to determine optimal course of therapy. Previous TB treatment is a strong determinant of drug resistance, and this should be investigated since drug resistance hinders the effectiveness of 1st-line TB medications and amplifies resistance and further transmission.

- All previously treated TB patients should provide specimen for culture and drug susceptibility testing (DST) at or before start of treatment.
- Rapid molecular testing (GeneXpert, LPA) should be performed in all previously treated cases
  - If rapid testing reveals rifampicin resistance, the patient should receive empiric drug resistant treatment while awaiting phenotypic DST results.
  - Those patients with results showing rifampicin sensitivity, should be treated as drug susceptible TB.

Treatment for pregnant and breastfeeding women

The benefit of treating active TB disease in a pregnant woman far outweighs the risks that the medications may pose to both the mother and the foetus. No changes to the regimen are necessary. A woman who is breastfeeding and has TB should receive a full course of TB treatment. Timely and effective treatment is the best way to prevent transmission to the baby. All 1st-line TB medications are compatible with breastfeeding, allowing safe continued breastfeeding during treatment. The child should continue to breastfeed normally but be given prophylactic isoniazid and rifampicin (RH) for 3 months. BCG vaccination of the newborn should be postponed until the end of RH prophylaxis.

Treatment for women using contraception

Rifampicin interacts with combined oral contraceptive pills and progesterone only pills with a risk of decreased protective efficacy against pregnancy. A woman on oral contraceptives may choose between the following two options, after consultation with a clinician, while receiving treatment with rifampicin:

- take an oral contraceptive pill containing a higher dose of oestrogen (50 mcg) or
- switch to another form of contraception, e.g. injectable, implant, intrauterine device.

Treatment for patients with liver disorders

Isoniazid, rifampicin, and pyrazinamide are all associated with hepatitis. Of the three medications, rifampicin is least likely to cause hepatocellular damage, although it is associated with cholestatic jaundice while pyrazinamide is the most hepatotoxic.

Treatment for patients with liver disorders

Isoniazid, rifampicin, and pyrazinamide are all associated with hepatitis. Of the three medications, rifampicin is least likely to cause hepatocellular damage, although it is associated with cholestatic jaundice while pyrazinamide is the most hepatotoxic.

Clients with viral hepatitis, a past history of acute hepatitis, and excessive alcohol consumption can receive standard drug susceptible treatment provided that there is no clinical evidence of chronic liver disease. However, hepatotoxic reactions to TB medications may be more common in these clients and should be anticipated.

Clients with liver disease should not receive pyrazinamide. Isoniazid plus rifampicin plus one or two non-hepatotoxic drugs such as streptomycin (S) and ethambutol can be used for a total duration of 8 months. Alternative regimens are 9 RE or 9 SHE in the initial phase followed by HE in the continuation phase, with a total treatment duration of 12 months.

- 2 SRHE/ 6RH
- 9 RE
- 2 SHE/ 10HE

In case of acute hepatitis, which may or may not be related to TB or TB treatment, consult a physician. Expert consultation is advised in treating patients with advanced or unstable liver disease in conjunction with clinical and laboratory monitoring.

Treatment of patients with renal failure

Isoniazid, rifampicin, and pyrazinamide are either eliminated almost entirely by biliary excretion or metabolized into non-toxic compounds. Patients with renal failure can take normal dosages. Because of increased risk of nephrotoxicity and ototoxicity, streptomycin should be avoided in patients with renal failure. **The safest regimen to administer to patients with renal failure is 2RHZE/ 4RHE.**

All patients that fall under the category "special circumstances" should be referred to and managed by an experienced medical officer.

When to start ART in TB/HIV co-infected patients

TB/HIV co-infected clients have an increased risk of dying before TB treatment is completed, and deaths occur mainly in the first two months of TB treatment. There is a need to fast track these clients for both TB and HIV care and treatment. Delaying ART initiation increases the mortality due to HIV infection. Early initiation on ART treatment will reduce mortality and morbidity among PLHIV coinfected with TB. Improved immune system functioning from ART helps to cure TB and decreases infectiousness and transmission of HIV. Rapid ART initiation should be offered to all people living with HIV following a confirmed HIV diagnosis and clinical assessment, including those with signs and symptoms consistent with TB. Except for central nervous system disease (meningitis), initiate ART while rapidly investigating for TB, with close follow-up within seven days to initiate TB treatment if TB is confirmed.

ART should be started as soon as possible within two weeks of initiating TB treatment, regardless of CD4 cell count[31]. Only in patients who are suspected or confirmed to have TB meningitis should ART be delayed.

Clinical assessment is the primary tool for evaluating clients both before TB treatment initiation and after ART treatment has been initiated. Laboratory investigations can help inform which regimen to choose but are not essential for ART initiation. Inability to perform laboratory investigations should not prevent patients from being initiated on ART.

For people living with HIV with TB meningitis, immediate ART is associated with more severe adverse events compared with initiating ART two months after the start of TB treatment. ART should be delayed at least four weeks after treatment for TB meningitis is initiated. Corticosteroids should be considered adjuvant treatment for TB meningitis.

[31]World Health Organization. Updated Recommendations on HIV Prevention, Infant Diagnosis, Antiretroviral Initiation and Monitoring. 2021

Comprehensive preparation should be provided in view of the needed adherence to both TB and HIV treatments. Adherence counselling should be offered on an ongoing basis.

Table 9.9: Summarized Management of TB

Indication	Action
TB symptoms (cough, night sweats, fever, recent weight loss)	Investigate for TB* • If TB is excluded, initiate ART and TB preventive therapy • If TB is diagnosed, initiate ART and TB treatment
Diagnosis of drug-sensitive (DS) TB at a non-neurological site (e.g. pulmonary TB, abdominal TB, or TB lymphadenitis)	Start ART as soon as possible and within 2 weeks
Diagnosis of drug-resistant (DR) TB at a non-neurological site (e.g. pulmonary TB, abdominal TB, or TB lymphadenitis)	Start ART as soon as possible and within 2 weeks
Diagnosis of DS-TB or DR-TB at a neurological site (e.g. TB meningitis or tuberculoma)	Defer ART until 4-6 weeks after start of TB treatment
* Clinicians should initiate presumptive TB cases on ART while investigating for TB. The only exception is a patient suspected to have TB meningitis.	

SECTION 9.4: CRYPTOCOCCAL DISEASE AND MENINGITIS

Clinical Presentation

Despite the scale up of ART, the incidence of cryptococcal meningitis (CM) remains substantial. CM is a major cause of mortality in PLHIV with AHD. Cryptococcal meningitis is a leading cause of mortality among hospitalized adults living with HIV, accounting for 15–20% of adult deaths[32]. Patients with CM may present with symptoms and signs related to inflamed meninges (including neck stiffness), raised intracranial pressure[33] and encephalitis (including memory loss and new-onset psychiatric symptoms).

The absence of symptoms of meningitis does not exclude CM: approximately one in three patients with asymptomatic cryptococcal antigenemia has concurrent CM.

Screening

Cryptococcal antigen test (CrAg) testing is recommended on serum, plasma or whole blood on all adolescents and adults living with HIV who have a CD4 cell count <200 cells/mm3 at any point during their management. This is especially critical before initiating ART, reinitiating ART (after ART interruption > 3 months) or switching to 2nd-line ART treatment. When CD4 testing is not available, serum CrAg should also be performed on all critically ill patients and those with WHO clinical stage 3 and 4 disease. Routine screening is not recommended in children living with HIV due to rarity of disease in this age group.

Diagnosis

PLHIV with clinically suspected meningitis or a positive serum CrAg test need investigation for CM. Lumbar puncture (LP) with rapid cerebral spinal fluid (CSF) cryptococcal antigen assay (CrAg) is the

[32]World Health Organization. Guidelines for Managing Advanced HIV Disease and Rapid Initiation of Antiretroviral Therapy. 2017

[33]Signs of raised intracranial pressure include: including headache, confusion, altered level of consciousness and mental status, nausea, vomiting, sixth cranial nerve palsies with diplopia, photophobia, neck stiffness, altered mental status, visual impairment and papilledema.

preferred diagnostic approach. However, where CrAg is not available, lumbar puncture with CSF India ink test examination is the alternative diagnostic approach. If LP is not available immediately or if focal neurological signs are present, serum/plasma/finger prick whole blood may be tested for CrAg to determine if the patient has disseminated cryptococcal disease.

If CSF is positive for either CrAg or India ink, immediately initiate antifungal treatment. Patients with a positive blood CrAg test and symptoms/signs of meningitis should be empirically started on pre-emptive antifungal treatment to prevent progression to invasive disease while investigating or awaiting ART. As part of evaluation, clinicians should remember the differential diagnosis for meningitis in PLHIV, e.g. TB meningitis, toxoplasmosis, etc. especially where screening for cryptococcus is negative.

Prophylaxis

When CrAg screening is not available, primary prophylaxis with Fluconazole should be given to adults and adolescents living with HIV who have a CD4 cell count <200 cells/mm3.

Table 9.10: Fluconazole Prophylaxis

Recommended regimen for prophylaxis
Fluconazole 200 mg daily for adults and adolescents above 25kg
Fluconazole 6 mg/kg/day for adolescents below 25kg

Criteria to stop prophylaxis:

- When the client is established on ART, has had antifungal prophylaxis for at least one year, has a CD4 cell count ≥ 100 cells/mm3, and a fully suppressed viral load
- When the client is established on ART, has had antifungal prophylaxis for at least one year and has a CD4 cell count ≥ 200 cells/mm3

Pre-Emptive Treatment

All individuals with positive serum CrAg but negative CSF CrAg and without signs or symptoms of CM, should be given fluconazole pre-emptive antifungal treatment. Pre-emptive treatment is an alternative strategy to prophylaxis that aims to prevent progression to disease after infection has occurred. Fluconazole pre-emptive treatment involves giving the exact same consolidation and maintenance phases as treatment. The same discontinuation recommendations for prophylaxis apply.

Table 9.11: Fluconazole Pre-emptive Treatment

Induction Phase	Fluconazole 800mg/day x 10 weeks Fluconazole 6-12 mg/kg/day x 10 weeks for adolescents below 25kg
Maintenance Phase	Fluconazole 200 mg daily Fluconazole 6 mg/kg/day for adolescents below 25kg

Treatment of Cryptococcal Meningitis

Once definitive diagnosis of cryptococcal meningitis has been made based on positive CSF CrAg, India ink or culture, treatment should be initiated promptly while patient is hospitalized. Empiric treatment should be considered when access to these diagnostic tests is limited, and clients present with typical signs and symptoms especially when accompanied by clinical signs indicating severe illness. Referrals to a higher level of care or consultation with experienced clinicians is strongly encouraged.

There are three phases in the treatment of cryptococcal meningitis: the induction phase, consolidation phase, and maintenance phase. The drugs for the different phases and duration of treatment are summarized below.

Remember that lumbar puncture is both diagnostic and therapeutic. For those with increased intracranial pressure, daily lumbar puncture is indicated until symptoms resolve on anti-fungal therapy.

Table 9.12: Treatment Regimens for Cryptococcal Meningitis

Phase	Drug	Comments
Induction Phase (2 weeks)	**Recommended** Liposomal - Amphotericin B (3mg/kg/day) **OR** Amphotericin B deoxycholate (1mg/kg/day) + Flucytosine (100mg/kg/day in four divided doses) for one week Then Fluconazole (1200 mg/day for adults; 12 mg/kg/day for children and adolescents up to a maximum of 800mg daily) for one week	Liposomal is preferred to deoxycholate form of amphotericin B because of its better toxicity profile, especially with regards to renal injury.
	Alternative* Fluconazole (1200 mg daily for adults, 12 mg/kg/day for children and adolescents) + Flucytosine (100 mg/kg/day, divided into four doses per day)	*Fluconazole monotherapy is not recommended.
Consolidation phase (8 weeks)	Fluconazole 800mg/day for adults (or 6-12mg/kg/day in children and adolescents)	Initiate ART **4–6 weeks** after starting CM treatment and patient is responding to CM treatment.
Maintenance Phase	Fluconazole 200mg/day for adults (or 6 mg/kg/day in children and adolescents)	Continue until client meets criteria to stop.
Relapse	Start or re-start induction phase Manage raised ICP with therapeutic lumbar puncture	○ If ART not yet initiated wait for 4-6weeks of antifungal treatment. reinforce adherence
Secondary prophylaxis for cryptococcal disease should be restarted if the CD4 count drops to <100 cells/mm3 for adults or adolescents		

Criteria to stop maintenance phase

- When the client is established on ART, has had antifungal maintenence for at least one year, has a CD4 cell count ≥ 100 cells/mm3, and a fully suppressed viral load
- When the client is established on ART, has had antifungal maintenence for at least one year and has a CD4 cell count ≥ 200 cells/mm3

Clients with cryptococcal meningitis are often extremely ill and need prompt management in hospital. Once diagnosis has been confirmed or decision made for empiric treatment, apply good clinical practice principles outlined below.

Table 9.13: Good clinical practice principle for managing CM

Pre-emptive hydration and electrolyte supplementation	
Adults and Adolescents	One litre of normal saline solution with 20 mEq of potassium chloride (KCl) over a minimum of two hours (preferably first thing in the morning) before each controlled infusion of amphotericin B. Add one to two 8mEq KCl tablets orally twice daily. If available, magnesium supplementation should also be provided 12 mmol/day. Magnesium glycerophosphate or chloride twice daily, or magnesium chloride 4 mEq twice daily.
Amphotericin B Treatment Monitoring	
Serum potassium	Baseline and 2–3 times weekly
Serum creatinine	Baseline and 2–3 times weekly
Haemoglobin	Baseline and weekly
Management	
Hypokalaemia	If hypokalaemia is significant (K <3.3 mol/l), increase potassium supplementation to 40 mEq KCl by intravenous infusion and/or one to two 8mEq KCl tablets orally three times daily. Monitor potassium daily.
Elevated creatinine	If creatinine increases by ≥2 fold from the baseline value, increase pre-hydration to 1L every eight hours and consider temporarily omitting a dose of amphotericin B. Once creatinine improves, restart amphotericin B (AmB-Deoxycholate) at 0.7 mg/kg/day and consider alternate day administration of amphotericin B. If creatinine continues to rise, consider discontinuing amphotericin B and continuing with fluconazole at 1200 mg/day. Consider fluconazole dose adjustment if significant renal impairment. Monitor creatinine daily.
Severe anaemia	Transfusion should be undertaken if possible, for severe amphotericin B–related anaemia

Additional notes:

- Potassium replacement should not be given to people with pre-existing renal impairment or hyperkalaemia.
- Give careful attention to monitoring of intake and output of fluid and daily weight.
- Flucytosine (5-FC) – because of concerns about bone marrow suppression, regular monitoring of full blood counts should be considered to monitor for 5-FC associated anaemia, neutropenia and thrombocytopenia.
- The incidence of renal dysfunction and electrolyte disturbance is much less with liposomal amphotericin preparations, but renal function and electrolytes still need to be monitored.

Health facilities should ensure availability and access to laboratory tests that monitor Amphotericin B toxicities. In the event laboratory tests that monitor amphotericin B toxicities are unavailable a risk benefit assessment should be conducted and the appropriate clinical judgement should be made to preserve and save the life of the patient. WITHOLDING treatment in this event may lead to significant morbidity and mortality.

Summary of the management of PLHIV with cryptococcal infection

- Present with signs and symptoms of meningitis
  - Investigate for meningitis before starting ART
  - Perform serum CrAg
  - Perform lumbar puncture for CSF CrAg and CSF TB-LAM
- No signs or symptoms of meningitis but serum CrAg is positive
  - Perform lumbar puncture and CSF CrAg
  - If LP is negative, begin fluconazole pre-emptive treatment and initiate ART
  - If LP is positive, begin treatment for CM and delay ART for 4-6 weeks
- Cryptococcal meningitis (presumptive or confirmed)
  - Begin treatment for CM and delay ART for 4-6 weeks

SECTION 9.5: TOXOPLASMOSIS

Clinical Presentation, Screening, and Diagnosis

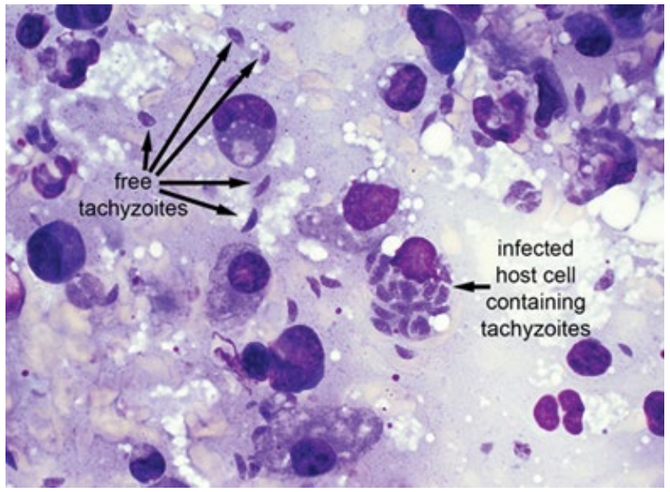
Toxoplasmosis is an important OIs among patients with AHD. It is caused by a parasite Toxoplasma gondii. Primary infection occurs after ingestion of undercooked meat containing tissue cysts. Oocysts shed in cat faeces may sporulate in the environment and if ingested may also result in toxoplasmosis. When present latent tissue cysts may be reactivated into active disease. Patients with CD4 cell counts below 100 cells/mm3 are at highest risk of developing active disease. Patients commonly present with Toxoplasma gondii encephalitis.

Major presenting symptoms of toxoplasmosis include:

- headache
- fever
- seizure
- focal neurologic signs (facial palsy, hemiparesis)
- encephalitis-like symptoms such as reduced level of consciousness and confusion
- new onset seizures

Diagnosis

Diagnosis commonly utilizes computerized tomography (CT) of the head. The classical sign of toxoplasmosis is identifying ring-enhancing lesions with oedema. Where available, serology can be done to identify toxoplasmosis immunoglobulin (Ig). Tissues can be collected, stained with Giemsa stain (or haematoxylin and eosin (H&E)) and viewed under the microscope.



Prophylaxis

Co-trimoxazole is the recommended prophylaxis. Dapsone may be used as alternative prophylaxis.

Treatment and Management

Treatment for toxoplasmosis comprises two parts: induction and secondary prophylaxis. Improvement should be evident within the first two weeks of therapy. If not, evaluate for other potential causes. Some of these may require a brain biopsy.

Induction phase lasts 6 weeks

- Cotrimoxazole 1920mg BD (60mg/kg/day), or
- Pyrimethamine 75 mg daily + sulfadiazine 1500 mg Q6 hours + leucovorin 10-25mg daily
- Can substitute clindamycin 600mg Q6 hours for sulfadiazine (sulfa allergy)

Adjunctive therapy

- Steroids may be used if mass effect
- Other treatments depend on complications present, e.g. anti-seizure meds for seizures

Secondary prophylaxis until CD4 >200 cells/mm3:

- Cotrimoxazole 960mg daily or
- Pyrimethamine 50 mg daily + sulfadiazine 1g Q12 hours

Prevention

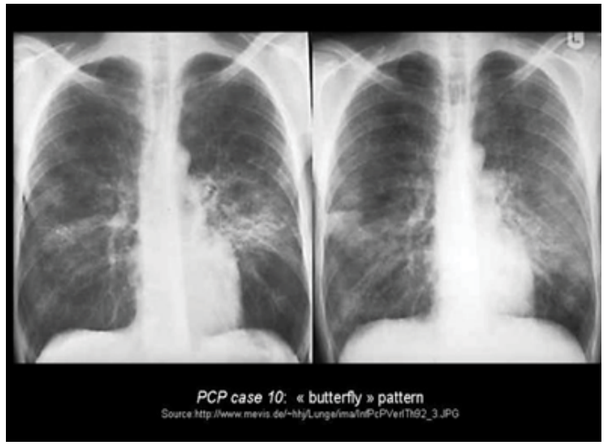
- Avoid raw or undercooked meat, including undercooked lamb, beef, pork, venison
- Wash hands after contact with raw meat and soil
- Wash fruits and vegetables well before eating them raw
- Handling pet cats
  - Change litter daily, preferably by an HIV-negative, non-pregnant person
  - Feed cats canned or dried commercial food or well-cooked table food

SECTION 9.6: PNEUMOCYSTIS JIROVECII PNEUMONIA (PJP)

Clinical Presentation and Diagnosis

Primary infection with Pneumocystis jirovecii, also referred to as PCP for PneumoCystis Pneumonia in medical literature, occurs in childhood with 90% of children being sero-positive for pneumocystis antibodies and sub-clinical disease by 4 years of age. Diagnosis of PJP is mainly clinical, and patients commonly present with sub-acute onset and progression of shortness of breath, non-productive cough, and chest pain. Fever is not always present but can be high. PJP is common in infants with untreated HIV infection and may be the presenting condition. The peak age for PJP infection in children is six months, and any HIV-exposed infant with presumptive PJP disease needs an immediate DNA PCR to confirm HIV infection status. Patients commonly have severe immunosuppression, CD4 <200 cells/mm3, or CD4% <15% in infants and young children. Physical examination shows tachycardia, increased respiratory rate ± rales. Hypoxemia is common (SpO2 <90%) and cyanosis may be present. Auscultation may be normal in many cases and in the presence of hypoxemia should raise the suspicion of PJP.

Chest X-ray findings: often bilateral symmetrical interstitial infiltrates ("ground-glass" appearance) but may be normal in up to 30% of cases.



Chest x-ray of *Pneumocystis jirovecii* pneumonia shows increased opacification (whiteness) in the mid and lower zones on both sides

- CXR is normal in 10-30% of clients
- Nodules or cavities are infrequent
- Pleural effusions are rare

Prevention and Management of PJP

Cotrimoxazole is recommended for both primary and secondary prophylaxis.

Cotrimoxazole is also the preferred therapy for disease.

- Preferred: Cotrimoxazole 120mg/kg/day in 3 divided doses x 21 days
- Alternative: Dapsone 100mg once daily + Trimethoprim 5mg/kg/day TDS x 21 days
- Adjunctive (severe hypoxemia):
  - Prednisone 40mg BD x 5 days, then 40mg daily x 5 days, then 20mg daily x 11 days
  - Children: prednisone 1mg/kg BD x 5 days, then 1mg/kg daily x 5 days, then 0.5mg/kg daily x 11 days
  - Provide supplemental oxygen and ventilation support as needed
  - Provide nutritional support
  - Monitor and maintain hydration

SECTION 9.7: MALIGNANCIES ASSOCIATED WITH HIV

Cervical Cancer

Cervical cancer is a type of cancer that occurs in the cells of the cervix – the lower part of the uterus that connects to the vagina. Various strains of the human papilloma virus (HPV), a sexually transmitted infection, play a role in causing most cervical cancer lesions. Cervical cancer is the most common cancer among Basotho women and causes the most cancer-related deaths. HIV-positive women are at a higher risk of precancerous lesions and invasive cervical cancers.

Women living with HIV have a higher prevalence of HPV infection and a higher prevalence of persistent HPV infection and infection with multiple high-risk HPV types. This increased susceptibility to HPV infection leads to:

- A greater risk of pre-cancer and cancer at younger ages, which increases with the degree of immunosuppression
- Increased risk of developing invasive disease up to 10 years earlier than in women not infected with HIV
- More frequent presentation of cervical cancer with lower five-year survival rates

Invasive cervical cancer is a WHO stage 4 condition, therefore, a sign of advanced HIV disease. Women living with HIV are four to five times more likely to develop invasive cervical cancer than HIV-negative

women, and generally present with more advanced lesions with a poorer prognosis. Compared with the general population, PLHIV are at considerably increased risk for all types of anal and genital HPV-associated cancers and their precursor lesions.

HPV Vaccination

All HPV vaccines provide protection against HPV types 16 and 18, which are highest risk for cancer. Some vaccines also protect against other HPV strains with varying cancer-causing risks. The recommended target population for HPV vaccination are girls aged 9–14 years, prior to initiation of sexual activity. The vaccines should be given before a girl becomes infected with HPV which is before she becomes sexually active.

HPV vaccines should not be given to the following:

- Anyone experiencing a severe allergic reaction after a previous dose of the vaccine or after exposure to one of its components
- Symptoms of an allergic reaction may include itching, rash, urticaria, blisters
  - If any of these symptoms occur post-HPV vaccination, no more doses should be given, and other vaccines that may have the same components included in them should be avoided
- Girls with severe febrile illness
- Girls or women who are pregnant:
  - If a girl becomes pregnant after initiating the vaccination series, the remainder of the regime should be delayed until after the pregnancy.
  - If the HPV vaccine is inadvertently administered to a girl or woman who is pregnant, no intervention is necessary save for counselling the patient. The remaining vaccine dose(s) should be postponed after the pregnancy, at which time the HPV vaccine series can be completed.
  - It is not necessary to restart the vaccine series after the pregnancy.

Screening

All contacts between clients and health workers are opportunities to provide HIV testing services and appropriate HIV education, prevention, treatment and care. The integration of cervical cancer and HIV services can occur in two ways:

- Women attending HIV testing services should be encouraged to seek cervical cancer screening if they are aged 25 years and above.
- Women attending clinics for cervical cancer screening should be offered HTS and linked to appropriate HIV prevention, care, and treatment services.
- Women living with HIV should be offered routine cervical cancer screening as a component of HIV comprehensive care.

Table 9.14: Approach to Prevention, Detection and Management of Cervical Cancer

	Girls and women living with HIV	Girls and Women who are HIV-negative
HPV Vaccination	3 doses: • 2nd dose to be given 1-2 months after 1st dose • 3rd dose to be given 6 months after 1st dose	• 9-14 years: 2 doses, 6 months apart • 15 years or older: 3 doses
Screening	• Ages 25 years and above	• Ages 25 years and above
Frequency of screening	• Every 2 years from when client is sexually active or from 25 years, whichever is earlier	• 25-49 years: every 3 years • 50 years and above: every 5 years
Exit from screening	• **No exit** • **Continue every 2 years**	• **65 years if previous two consecutive screenings were negative**
Management of precancerous lesion	• Available suitable method	
Management of cervical cancer	• Based on staging and classification	
The three-dose schedule is recommended for girls aged 15 years and older and for those known to be living with HIV. It is not necessary to screen for HPV or HIV infection prior to HPV vaccination.		

The national target group for cervical cancer screening is women between the ages of 25 and 49 years. All women living with HIV should be offered cervical cancer screening at HIV diagnosis, if

- Aged 25 years and above
- Have not been screened in the past two years and are due for next test

Women living with HIV are recommended to receive more frequent screening. Screening should also extend throughout their lifetime.

The following screening methods are offered in Lesotho, however newer screening techniques will be adopted as they become available:

- Visual inspection using 5% acetic acid (VIA) and/or Lugol's iodine (VILI)
  - Note there are high false positives results with VIA in teenage girls.
- HPV Nucleic acid test
- Pap smear/cytology

Women who are found to have abnormalities on screening should be offered treatment and follow up in order to prevent the development of cancer or to treat cancer at an early stage using a "see and treat approach".

Treatment

Various treatment options are available for the treatment of pre-cancerous lesions:

- Ablative Methods: Abnormal cervical cells are destroyed by thermo-coagulation, cryotherapy, electrosurgical cauterization, or vaporization with a laser beam.
- Excision methods: These methods involve the removal of the abnormal area of the cervix and the transformation zone. Excision methods have the advantage of providing tissue for histopathological diagnosis. The excision methods offered in Lesotho are LLETZ and cold knife biopsy.

Follow up after treatment will be at one year irrespective of the treatment method. Clients should be counselled on the importance and need of follow-up.

During the healing process after any procedure (e.g. biopsy or treatment), women living with HIV might have increased viral shedding. During counselling, it is especially important for the provider to stress that the woman should discuss this with her partner(s) and abstain from intercourse until healing has occurred (two weeks after ablative treatment and 4-6 weeks after a LEEP). In situations where this may not be possible, condoms should be used consistently and correctly.

Cervical cancer is curable if detected and treated in its early stages.

Service providers should have a basic understanding of the signs and symptoms of cervical cancer so that clients can be appropriately managed in a timely manner. The clinical presentation of invasive cervical cancer depends on the location and spread of the cancer. The clinical presentation is mainly determined by the patterns of growth and spread. All clients with symptoms of invasive cancer should be referred.

Patients identified at the health centre level as having a suspected case of cervical cancer must be referred immediately to a hospital for further management, including biopsy and staging (examination under anaesthesia). In order to fast track management of the client, referring centre can initiate management of the client including the following:

- Consult/refer for review by medical officer
- Stabilize client – resuscitation, control bleeding, iron and folate supplementation, pain control, treat infections and comorbidities
- Investigations:
  - Take biopsy if resources are available at district hospital
  - Perform FBC, Urinalysis, U and E, LFT, Chest X ray, Ultrasound scan of the pelvis and abdomen
  - An experienced clinician should perform examination under anaesthesia for staging
  - Perform other tests based on clinical presentation
  - HIV test, STI screening including syphilis serology

Invasive cervical cancer treatment may require surgery (common in early stage) and/or radiotherapy with or without chemotherapy for advanced stages.

Table 9.15: Symptoms of Invasive Cervical Cancer

Type	Symptoms
Micro-invasive cancer	• May be asymptomatic • May be detected on investigation of an abnormal Pap smear, colposcopy or conization (cone biopsy)
Early Cancer	• Abnormal vaginal discharge, sometimes foul smelling • Irregular vaginal bleeding (of any pattern) in women of reproductive age • Post-coital spotting or bleeding in women of any age, even young women • Post-menopausal spotting or bleeding
Late Cancer	• Urinary frequency and urgency • Backache • Lower abdominal pain
Very Late	• Severe back pain • Weight loss • Blood in the urine • Decreased urine output (from obstruction of the ureters or renal failure) • Leakage of urine or faeces through the vagina • Symptoms of bowel obstruction • Leg swelling (oedema), usually unilateral
Note: In cases of abnormal peri-menopausal bleeding, cervical cancer should always be considered	

Table 9.16: Signs of Cervical Cancer on Clinical Examination

Signs on Clinical Examination	
Early signs	• Contact bleeding • Enlarged cervix (often barrel-shaped) • Dirty water looking offensive vaginal discharge
Late signs	• General: ○ Severe anaemia ○ Weight loss • Pelvic: ○ Growth or ulcerative lesion on the cervix on pelvic examination ○ Cauliflower like growth on the cervix ○ Fungating mass on the cervix ○ Fistulae between the vagina and bladder or rectum if the cancer has spread to these organs (this can result in the incontinence of urine and/or faeces through the vagina)

Kaposi's Sarcoma

Kaposi's sarcoma (KS) is the most common malignancy in PLHIV. It is a vascular tumour which arises in multifocal sites. The etiologic agent for all forms and cases is human herpesvirus 8 (HHV8). The HHV-8 immunostain will distinguish it from other vascular tumours. Endothelial cells infected with HHV-8 undergo altered lymphatic differentiation and manufacture cytokines creating a favourable milieu for angiogenesis. The skin is commonly involved although every organ can be affected. It exists in four forms – classic (Mediterranean) KS, endemic (Africa) KS, epidemic (AIDS-Related) KS, and transplant-related KS.
Epidemic (AIDS-Related) KS does not have a preferential pattern of localization and may affect all skin and mucous membranes. About 50% of those with HIV/HHV-8 co-infection develop KS. Lower CD4 cell count is associated with higher risk for KS. HIV enhances HHV-8 replication and tumorigenesis. Lymph nodes and internal organs such as stomach, gut, lung, or liver may also be involved. The progression of HIV-associated KS is variable: the tumours can remain unchanged for months to years or grow rapidly within a few weeks and disseminate.

Typical findings at manifestation are a few asymptomatic purple macules or nodules. Rapid growth can lead to localized pain and a discoloration of the area around the tumour as a result of haemorrhage. Further progression of the tumour can lead to central necrosis and ulceration. The tumours may bleed easily. Plaque-like and nodular KS lesions often become confluent and can be accompanied by massive lymphoedema. In the oral cavity, the hard palate is frequently affected. Lesions begin with purplish erythema and progress to plaques and nodules that ulcerate easily. KS lesions may also involve the external genitalia including the foreskin and glans penis.

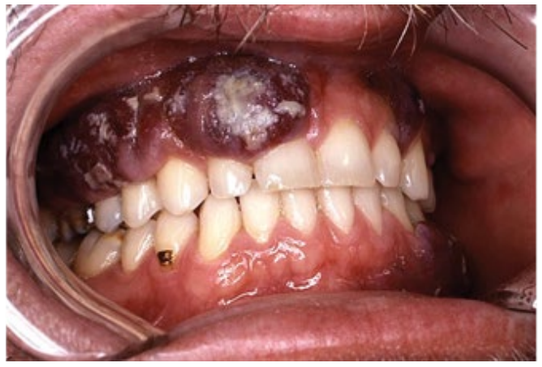
Diagnosis

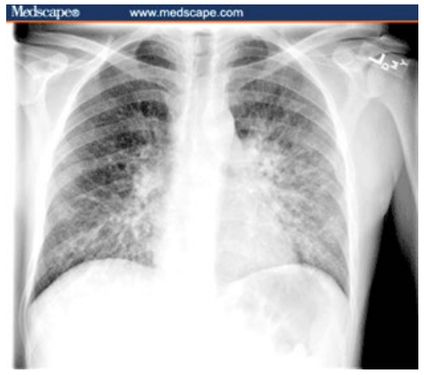
Diagnosis of cutaneous KS is usually made based on clinical findings. Physical appearance can be macular, patch, plaque, nodular or exophytic lesions. The lesions can be solitary, localized or disseminated. However, in all inconclusive or questionable cases a histologic diagnosis is recommended. Sample is collected via local punch biopsy, excision biopsy, lymph node excision or endoscopic biopsy. Differential diagnosis includes other neoplasia such as cutaneous lymphomas or angiosarcoma, but also infectious diseases such as syphilis and bacillary angiomatosis. Histological findings include spindle-shaped cells with vascular channels lined by abnormal endothelial cells.

In all cases of KS, clinical staging procedures are recommended, including:

- Complete inspection (oral and genital mucous membranes)
- Abdominal ultrasound
- Gastroduodenoscopy and colposcopy (both procedures obligatory when mucous membranes are involved)
- Chest radiography (exclusion of a pulmonary KS)

Figure 9.2: KS Lesions on Upper Gingiva and Pulmonary Lesions on Chest x-ray





Treatment

If KS is newly diagnosed in a person living with HIV naïve to antiretroviral therapy, ART should be initiated. In early KS, additional chemotherapy is only required in 20% of adult cases. With viral suppression and immune reconstitution, many KS lesions stabilize or even resolve completely without specific treatment. In contrast, children with KS almost always need chemotherapy in addition to ART. Patients with KS should be referred to an oncologist to determine regimen and timing of chemotherapy. Common drugs include: paclitaxel, vincristine, bleomycin, vinblastine, and doxorubicin.

Malignant Lymphomas

Malignant lymphomas are neoplastic diseases of the lymphatic system that grow rapidly and aggressively, and lead to death within a few weeks or months if left untreated. Hodgkin's lymphoma (HL) is distinguished from the large group of non-Hodgkin's lymphomas (NHL). In comparison to the general population, PLHIV are affected significantly more frequently by all types of lymphoma. Aggressive non-Hodgkin's lymphomas of B-cell origin are particularly frequent. The incidence of lymphomas has been markedly reduced by the introduction of ART.

Malignant lymphomas in PLHIV are also biologically very heterogeneous and differ in several aspects. The extent of immunodeficiency also varies significantly. Burkitt's lymphoma and Hodgkin's lymphoma frequently occur even when immune status is good. In contrast, immunoblastic and primary CNS lymphoma (PCNSL) are almost always associated with severe immunodeficiency. It has also been noted that HIV-associated lymphomas – both NHL and HL – have numerous common clinical features. Characteristics include the usually aggressive growth, diagnosis in advanced stages with frequent extranodal manifestations, poorer response to treatment, high relapse rates and an overall poor prognosis. The treatment of such cases should follow the recommendations for HIV-negative patients in specialized centres.

Systemic non-Hodgkin lymphomas (NHL)

A close association between systemic NHL and AIDS has been described for a long time. More than 90% of HIV-associated NHLs are of B-cell origin. They are almost always of high-grade malignancy. Two main histological types dominate: Burkitt's lymphomas, which comprise 30–40% of cases, and diffuse large-cell B cell lymphomas, comprising 40–60%.

Prevention and early detection

There is no data supporting specific therapies or diagnostic procedures for prevention or early detection of malignant lymphomas. ART seems to be the best protection against lymphoma. ART not only improves the immune status, but it also reduces chronic B-cell stimulation, a risk factor for the development of lymphoma. Viral suppression is important as cumulative HIV viremia is an independent and strong predictor of AIDS-related lymphoma among patients receiving ART.

Signs and symptoms

The main symptom is lymph node enlargement. Lymphomas are firm, immobile, or barely mobile and painless. A large proportion of patients have advanced-stage lymphoma at the time of diagnosis. B symptoms with fever, night sweats and/or weight loss are found in the majority of cases (60–80%). General asthenia, significant malaise and rapid physical deterioration are also frequently seen.

Diagnosis

Rapid histological diagnosis is essential. If bone marrow biopsy cannot secure the diagnosis, then excision lymph node (e.g., cervical, axillary or inguinal) biopsy is recommended. All patients with suspected NHL should be staged. Basic diagnostic tests for staging include chest radiography; abdominal ultrasound; CT scans of the neck, thorax and abdomen; and bone marrow biopsy; aspiration alone is not enough. In addition to an updated immune status and viral load, the following should be determined at the very least: blood count, ESR, CRP, uric acid, LDH, liver and kidney parameters and electrolytes. ECG and echocardiography are also important.

Therapy

Due to extremely rapid generalization, even "early stages" move quickly. Every HIV-associated lymphoma is considered aggressive and requires systemic chemotherapy with a curative intent. Surgery or radiation therapy alone is not sufficient. Treatment should be started rapidly due to the aggressive nature of these lymphomas.

Special entities of lymphoma

Burkitt's lymphomas: the particularly high proliferative capacity and aggressiveness of Burkitt's lymphomas is a problem even in HIV-negative patients. Specific chemotherapy regimens are recommended.

Plasmablastic lymphomas: are relatively "new" entities in PLHIV. Plasmablastic lymphomas probably belong to the diffuse large cell NHLs but display a completely characteristic immune phenotype. The oral cavity is the site of involvement, although extra-oral manifestations do occur. Like Burkitt's lymphoma, plasmablastic lymphomas have a very high rate of proliferation and are extremely aggressive. Prognosis remains poor.

Primary effusion lymphoma (PEL): a relatively rare entity, also called body cavity lymphoma. These lymphomas are often very difficult to diagnose histologically. A visible tumour mass is usually absent, and malignant cells can only be found in body cavities (e.g., pleural, pericardial, peritoneal). Every pleural or pericardial effusion occurring in PLHIV and containing malignant cells is suspicious of PEL. The involved pathologist should always be informed about this suspicion. Recent reports indicated encouraging results with combined chemotherapy and high-dose methotrexate.

Primary CNS Lymphoma

Primary CNS lymphomas (PCNSL) are a late complication of HIV-infection and were previously seen in up to 10% of AIDS patients. CD4 is almost always below 50cells/mm3 at the time of diagnosis. In the pre-HAART era, PCNSL had the poorest prognosis of all the AIDS-defining illnesses, with a median survival of less than three months. In more recent years, this bleak picture has changed significantly. In the ART era, survival may be several years, and complete remission has become possible.

Signs and symptoms

Different neurological deficits occur depending on the location. Epileptic seizures may be the first manifestation of disease. Personality changes, changes in awareness, headaches and focal deficits such as paresis are also frequent. Fever is usually absent. As patients are almost always severely immunocompromised, constitutional symptoms may mask the real problem.

Diagnosis

Cranial CT or (better) MRI should be performed rapidly. The most important differential diagnosis is cerebral toxoplasmosis. A solitary mass is usually more indicative of PCNSL. However, 2–4 lesions may be present, which are usually fairly large at more than 2 cm in diameter. More than four lesions of a PCNSL are rarely found. Histologically, findings are consistent with diffuse large cell non-Hodgkin's lymphomas. In addition to the physical examination, a minimal diagnostic program (chest radiography, abdominal ultrasound) should clarify whether the CNS involvement is secondary to systemic lymphoma. This should always include fundoscopy to exclude ocular involvement (up to 20%).

Treatment

Cranial radiation therapy is the only option for patients with PCNSL, independent of HIV status. All PLHIV with PCNSL should be treated with ART, to achieve the best possible immune reconstitution.

Hodgkin's Lymphoma (HL)

HL is a cancer of the lymphatic system. It may affect people of any age but is commonly found in those aged 20 – 40 years of age. Lymphocytes grow abnormally and spread. The incidence of HL is elevated in PLHIV by a factor of 5–15 compared to the HIV-negative population. Worrisome data indicate that the incidence of HIV-related HL is increasing in the setting of improved immunity.

An advanced stage of disease at diagnosis is typical, as is frequent extranodal involvement and a trend towards prognostically poorer subtypes. Mediastinal disease is significantly less frequent than in HIV-negative patients.

Signs and symptoms

Symptoms include: painless swelling of lymph nodes (in neck, axilla or groin), fever, night sweats, persistent fatigue, severe itching, unexplained weight loss, loss of appetite, trouble breathing, and increased sensitivity to the effects of alcohol or pain in the lymph nodes after drinking alcohol. B symptoms occur in the majority of cases. Extranodal and advanced stages are common. Lymphomas are firm, immobile, or hardly mobile and painless, and the distinction from HIV-related lymphadenopathy or tuberculous lymphadenitis is not always possible.

Diagnosis

Staging is necessary as for non-Hodgkin lymphomas. Diagnostic lymph node excisional biopsy is even more important here than with NHL. As with NHL, specimens should be sent to reference laboratories if possible. Histologically, the malignant Hodgkin Reed-Sternberg (HRS) cells comprise less than 1% of the tumour cellularity, with the majority made up of surrounding polyclonal lymphocytes, eosinophils, neutrophils, macrophages, plasma cells, fibroblasts, and collagen.

Treatment

Risk-adapted treatment strategy in patients with HIV-related HL in accordance with standard treatment procedures established for HIV-negative patients is recommended. Main treatments are chemotherapy followed by radiotherapy or chemotherapy alone. Five-year survival stands at 85% with treatment, however, there is a risk of developing other cancers and secondary subfertility. Drugs in use include doxorubicin, vinblastine, and dacarbazine.

SECTION 9.8 OTHER CONSIDERATIONS IN MANAGING AHD

Beyond the major conditions as summarized by the package of care above, there are a number of additional clinical considerations that are pertinent to the management of AHD. These include but are not limited to immune reconstitution inflammatory syndrome (IRIS), HIV drug resistance, cytomegalovirus infection, severe malnutrition, and depression. As guidance for managing these conditions is contained in a number of national guideline documents, this guideline only covers high-level considerations for the management of each condition. For further information, refer to the robust clinical guidance documents.

AHD in Children

Although children younger than five years are defined as having advanced disease at presentation if not on effective ART, **those who have been receiving ART for more than one year and who are clinically stable should not be considered to have advanced HIV disease** and are eligible for differentiated models of service delivery such as MMD. The main interventions known to reduce morbidity and mortality among children living with HIV can be summarized as **S**creen, **T**reat, **O**ptimize and **P**revent AIDS **(STOP AIDS).**

Table 9.17: STOP AIDS

Intervention	Component	<5 years	5–9 years	10–19 years
Screen[a]	Screen for TB using clinical algorithm and Xpert® MTB/RIF or Xpert® Ultra assay (Induced or expectorated) sputum, gastric aspirate, stool or nasopharyngeal aspirate or other extrapulmonary specimens	Yes	Yes	Yes
	LF-LAM assay	Yes	Yes	Yes
	Cryptococcal antigen screening on: serum, plasma, or whole blood If serum cryptococcal antigen positive or symptomatic, lumbar puncture	**No**	**No**	Yes
Screen	Nutritional assessment: • Weight-for-height • Height-for-age • Mid-upper arm circumference	Yes	Yes	Yes
Treat	TB, severe pneumonia, severe bacterial infections, cryptococcal meningitis and severe acute malnutrition according to guidelines.	All ages		
Optimize	• Rapid antiretroviral therapy with optimal regimens • Adherence counselling and support	All ages		
Prevention, prophylaxis and pre-emptive treatment	Vaccinations	Follow immunisation schedule		
	Co-trimoxazole	Yes	Yes	Yes
	TB preventive treatment	Yes	Yes	Yes
	Fluconazole pre-emptive therapy for cryptococcal antigen–positive without evidence of meningitis[c]	N/A	N/A	Yes

[a]Screening refers to screening and diagnosis
[b,d]See TB guidelines for management of tuberculosis in children.
[c]A negative test result does not exclude TB in children living with HIV in whom there is a strong clinical suspicion of TB.
[d] Same day ART initiation is preferred unless TB or cryptococcal meningitis is diagnosed

HIV Encephalopathy

HIV is known to invade the central nervous system at the time of infection and cause widespread damage. In children, especially in younger perinatally-infected children, this leads to a condition known as HIV encephalopathy, which affects all areas of neurodevelopment. HIV encephalopathy risk factors include viral load (high plasma/CSF viral load) in a child, route of HIV transmission (vertical), and timing of ART (i.e. late initiation).

Clinical presentation

- Gross discrepancy between the actual and developmental age; failure to attain or loss of developmental milestones; loss of intellectual ability
- Progressive impaired brain growth demonstrated by stagnation of head circumference
- Acquired symmetric motor deficit accompanied by two or more of the following: paresis, pathological reflexes, ataxia, gait disturbances

Diagnosis

A complete history and physical examination should be done as HIV Encephalopathy is mainly a clinical diagnosis and is made after exclusion of several other conditions that might have similar clinical picture such as:

- CNS infections e.g. toxoplasmosis, herpes simplex, varicella zoster, etc.
- Acute intoxication
- Drug effects
- Malignancies

Treatment

The mainstay of prevention and treatment of HIV Encephalopathy is ART. Supportive treatment should also be offered for complications caused by the infection, such as physiotherapy and speech therapy where indicated.

Oesophageal Candidiasis

The most common fungal infections in children living with HIV infection are caused by Candida spp. Oesophageal candidiasis continues to be one of the most frequent opportunistic infections in children with HIV infection. Risk factors for oesophageal candidiasis include low CD4 cell count, high viral load, and neutropenia.

Clinical presentation

Oesophageal candidiasis often presents with odynophagia, dysphagia, or retrosternal pain, and children, unlike adults, often experience nausea and vomiting. Therefore, children with oesophageal candidiasis may present with dehydration and weight loss.

Diagnosis

One should have a high index of suspicion of oesophageal candidiasis for a child who presents with the above-mentioned signs and symptoms and who also has oral candidiasis. Treatment with systemic antifungals should be started as soon as possible.

Oesophageal candidiasis has a classic cobblestone appearance on barium swallow. Findings on endoscopy may range from a few, small, raised, white plaques to elevated confluent plaques with hyperaemia and extensive ulceration.

Treatment

Oral fluconazole for 14 to 21 days.

Cytomegalovirus (CMV) Infection

Cytomegalovirus infection is a systemic viral infection that usually manifests as cytomegalovirus retinitis among severely immunocompromised people. Cytomegalovirus (CMV) is a common virus among people of all ages; however, a healthy person's immune system usually keeps the virus from causing illness. The reported prevalence of cytomegalovirus retinitis is highest in Asia and appears to be low in Africa. Among children, cytomegalovirus is responsible for cytomegalovirus pneumonitis, and HIV-exposed infants have a higher incidence of congenital cytomegalovirus. Since cytomegalovirus is a systemic infection, improving access to early diagnosis and affordable, oral systemic treatment with valganciclovir is a priority.

Clinical Presentation and Diagnosis

Major presenting symptoms of Cytomegalovirus infection are:

- Variable malaise
- Visual loss
- Bloody diarrhoea
- Vision loss

Blood tests can be used to diagnose CMV infection in adults who have symptoms. However, blood is not the best fluid to test newborns with suspected CMV infection. Tests of saliva or urine are preferred for newborns. There is currently no lab test used to make a definitive diagnosis of CMV in Lesotho.

Treatment and Management

Oral valganciclovir is used for the management of cytomegalovirus retinitis which is the commonest manifestation in PLHIV with advanced HIV disease.

Immune Reconstitution Inflammatory Syndrome (IRIS)

Background

Following ART initiation, the immune system begins reconstituting and starts responding to antigens more vigorously, which may result in a paradoxical reaction with worsening symptoms. In the process, signs of an opportunistic infection appear despite ART and virologic improvement. This situation is referred to as immune reconstitution inflammatory syndrome (IRIS). IRIS most commonly occurs in TB/HIV co-infected patients after the initiation of TB and HIV treatment.

Screening and Identification

IRIS can present in two ways:

- Paradoxical IRIS – a patient is diagnosed with an opportunistic infection, most commonly TB, starts the appropriate OI treatment followed by ART, and then develops worsening or new signs and symptoms of their opportunistic infection.
- Unmasking IRIS – a patient is screened for opportunistic infections before initiation of ART and no signs or symptoms of OI are found. After starting ART, new symptoms and signs of an opportunistic infection appear (most commonly TB).

Occurrence: IRIS usually occurs within the first 2-12 weeks of initiating ART but can be as long as six months after ART initiation.

The key risk factors for IRIS include the following:

- Severe immune suppression (CD4 count <50 cells/mm3)
- High viral load (>100,000 copies/mL)
- Early initiation of ART
- Marked rise of CD4 count and fall of viral load following ART initiation
- Presence of subclinical opportunistic infections

IRIS is a diagnosis of exclusion and particular attention should be paid to assess/exclude the following:

- TB treatment failure or drug resistant TB
- Poor adherence to ART
- Other opportunistic infections
- Side effects of TB treatment and/or ART
- Drug fever
- Other HIV-related diseases (lymphoma, Kaposi's sarcoma)

Management

The management of IRIS is to continue treatment for the opportunistic infection as well as ART and provide supportive management with non-steroidal anti-inflammatory drugs (NSAIDs). Corticosteroids may be used in cases with severe signs.

All patients with danger signs should be admitted into a hospital. Neither the OI treatment nor ART should be stopped unless a patient has severe, life-threatening symptoms despite proper IRIS management. Clinicians should explain the possibility of IRIS to PLHIV when initiating them on ART, even if they do not have any signs or symptoms of opportunistic infection (i.e., if symptomatic already, developing brief worsening of symptoms before becoming better, or if asymptomatic, developing new symptoms). The presence of IRIS does not mean a patient is failing ART.

Danger signs include, but are not limited to:

- Respiratory distress (RR > 30)
- Fever (T >39°C)
- Tachycardia (HR > 120)
- New or worsening adenitis, with obstructive symptoms

Depression

PLHIV are at high risk of mental, neurological, and substance-use disorders. Systematic reviews from both low- and high-income countries showed that depression is one of the most prevalent mental health comorbidities in people living with HIV. A systematic review conducted in 2015 reported depression prevalence rates as high as 80% among PLHIV, but with wide variation across studies, which is attributed to the varying screening and diagnostic criteria used. A study has shown that Lesotho has the highest depression incidence rate in the world at 6.59 per 1000[34], with One in three (28.8%) of Basotho initiating ART suffer from depression[35]. Depression negatively impacts ART adherence resulting in poor clinical outcomes among people living with HIV. Depressive symptoms have been reported as common in many studies in sub-Saharan Africa, where the HIV burden is also high.

PLHIV who have depression are less likely to achieve optimal treatment adherence. Although chronic HIV care settings provide an opportunity to detect and manage depression among PLHIV, it is often overlooked and unrecognized by health-care providers. Treatment, or lack of it, for mental health disorders can affect general health, adherence to ARV drugs and retention in care, and may lead to potential side-effects and drug interactions being overlooked.

Description of depression

The term "depression" is often explained as feelings of being sad, discouraged, hopeless, irritable, unmotivated, as well as a general lack of interest or pleasure in life. When these feelings last for a short period of time, it may be referred to as an episode of stress. But it is likely to be a depressive disorder when these feelings last for more than two weeks and interfere with regular daily activities. Depressive disorders, also known as mood disorders, include three main types: major depressive disorder (MDD), persistent depressive disorder, and bipolar disorder. Depressive disorders can affect people of any age, including children, teenagers, adults, and older adults.

Clinical Presentation of Major Depressive Disorder (MDD)

The diagnostic criteria for MDD are:

A. Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either 1) depressed mood or 2) loss of interest or pleasure. [Note: Do not include symptoms that are clearly attributable to another medical condition]
   - Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad, empty, and hopeless) or observation made by others (e.g., appears tearful) (Note: In children and adolescents, can be irritable mood)
   - Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation)
   - Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month) or decrease or increase in appetite nearly every day (Note: In children, consider failure to make expected weight gain)
   - Insomnia or hypersomnia nearly every day
   - Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)
   - Fatigue or loss of energy nearly every day
   - Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick)
   - Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)
   - Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

B. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning

C. The episode is not attributable to the physiological effects of a substance or to another medical condition

D. The occurrence of the major depressive episode is not better explained by schizoaffective disorder, schizophrenia, schizophreniform disorder, delusional disorder, or other specified and unspecified schizophrenia spectrum and other psychotic disorders

E. There has never been a manic episode or a hypomanic episode [Note: This exclusion does not apply if all manic-like or hypomanic-like episodes are substance induced or are attributable to the physiological effects of another medical condition]

Note 1: Criteria A–C represent a major depressive episode

Note 2: Responses to a significant loss (e.g., bereavement, financial ruin, losses from a natural disaster, a serious medical illness or disability) may include the feelings of intense sadness, rumination about the loss, insomnia, poor appetite, and weight loss noted in Criterion A, which may resemble a depressive episode. Although such symptoms may be understandable or considered appropriate to the loss, the presence of a major depressive episode in addition to the normal response to a significant loss should also be carefully considered. This decision inevitably requires the exercise of clinical judgment based on the individual's history and the cultural norms for the expression of distress in the context of loss.

34. Qingqing Liua, Q. L. (2020). Changes in the global burden of depression from 1990 to 2017: Findings from the Global Burden of Disease study. Journal of Psychiatric Research, 126, 134–140. https://doi.org/10.1016/j.jpsychires.2019.08.002.

35. Bernard Cerutti, B. C. (2016). Alcohol use and depression: link with adherence and viral suppression in adult patients on antiretroviral therapy in rural Lesotho, Southern Africa: a cross-sectional study. BMC Public Health, 16(947), 1–7. https://doi.org/10.1186/s12889-016-3209-4.

Screening

The PHQ (Patient Health Questionnaire), with both the two item (PHQ-2) and nine item (PHQ-9) questionnaires, meets the criteria for a good screening tool in its validity, reliability, and brevity.

Additionally, the PHQ is free and accessible in the public domain. Since the establishment of its validity, about two decades ago, the diagnostic validity of the PHQ-9 remains reputable. Both questionnaires and their scoring and interpretation are included in Annex 17.

Treatment and Management

People with a depressive illness seldom seek treatment. Evidence has shown that even the most severe depression can get better with some form of treatment. The types of treatment shown to be effective include pharmacological treatment (antidepressants) and forms of psychotherapy. Early diagnosis and intervention with appropriate treatment are the best ways to deal with depression. All PLHIV suspected or diagnosed with depression or any other mental health illness should be referred for appropriate management .

Treatment involves a combination of cognitive/behavioural therapy and medication. Exclude any other causes of depression: hypothyroidism, Parkinson syndrome, Efavirenz intolerance (associated with insomnia, nightmares, loss of memory), recent family death, etc. before providing pharmacological treatment.

Pharmacological treatment is often needed and speeds recovery. Many patients benefit from a 3-6-month course of therapy, but some will need longer-term treatment. Medication is encouraged for those with suicidal ideation, repeat episodes of depression and insufficient response to psychological support alone. All patients on anti-depressant medication also benefit from psychological support, and combination therapy is highly recommended.

Selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine (dose 10-20mg daily titrated up to 60mg daily) are the drugs of choice. Older anti-depressants such as amitriptyline may also be considered with doses titrated from 25mg to 100mg daily. Lower doses should be used in older patients. In patients with combination depression and anxiety, diazepam 5 to 10 mg/day in 2 divided doses can be added during the first two weeks of anti-depressive treatment.

Weekly consultations the first month are necessary, to follow the symptoms, the side-effects and to refill medications. It is recommended to not prescribe too many tablets initially due to risk of suicide. **Amitriptyline is NOT recommended in those with suicidal ideation. The treatment should always be stopped gradually, over a 2-week period for fluoxetine and a 4-week period for amitriptyline.**

Vaccinations

Providing vaccinations to PLHIV does not appear to accelerate HIV disease progression and is recommended as an important part of the HIV care package. However, people with severe immunosuppression may be at higher risk of complications from some live attenuated vaccines, and the response to other inactivated vaccines may be less effective because of their degree of immunosuppression. Additional doses or revaccination after immune reconstitution on ART may therefore be required.

Bacille Calmette-Guérin (BCG) vaccine

Children who are HIV positive or of unknown HIV status with symptoms consistent with HIV should not receive BCG vaccine. This policy is currently being reviewed by WHO and may potentially change. However, most neonates are asymptomatic at birth and routine BCG vaccination is encouraged for HIV-exposed infants.

Measles

Children and adults living with HIV are at increased risk of measles. Live vaccine should not be used for children and adults with severe immunosuppression as recommended by WHO. WHO defines severe immunosuppression with respect to measles vaccine eligibility as CD4 cell count <50 cells/mm3.

Chronological vaccination should be routinely administered to potentially susceptible, asymptomatic children and adults living with HIV and should be considered for those with symptomatic HIV infection if they are not severely immunosuppressed according to WHO recommendation above.

Meningococcal vaccination

Meningococcal vaccination should be offered to everyone with immunodeficiency, including those patients with AHD.

Polio vaccine

Polio vaccine is a live attenuated vaccine and its use in patients with AHD should be in line with WHO recommendations below:

- Inactivated polio vaccine (IPV) or bivalent oral polio vaccine (OPV) may be administered safely to asymptomatic infants living with HIV. HIV testing is not a prerequisite for vaccination.
- Bivalent oral polio vaccine is contraindicated among severely immunocompromised people with known underlying conditions such as primary immunodeficiencies, disorders of the thymus, symptomatic HIV infection or low CD4 cell count; these populations can safely receive inactivated polio vaccine.

Yellow Fever

Yellow fever vaccine may be offered to asymptomatic PLHIV with CD4 cell counts ≥200 cells/mm3; it is therefore contra-indicated in people with AHD until they achieve a CD4 cell count ≥200 cells/mm3. Although the data on the safety and immunogenicity of yellow fever vaccine when used among children living with HIV are limited, yellow fever vaccine may be administered to all clinically well children. HIV testing is not a prerequisite for vaccination.

CHAPTER 10: NUTRITION AND HIV

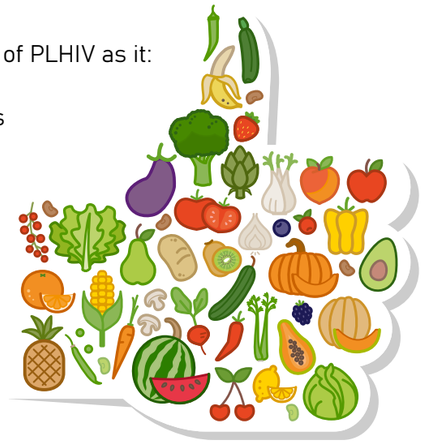
INTRODUCTION

Good nutrition is an important component in the comprehensive care of people living with HIV. Additional intake of micro and macro-nutrients enhances immune rehabilitation and adherence to ART. The link between HIV and nutrition is often described as a vicious cycle: both malnutrition and HIV weaken the immune system. HIV infection increases nutrient requirements and at the same time impairs nutrient intake and absorption, especially when untreated. On the other hand, poor nutrition increases the risk of opportunistic infections and accelerates the progression of HIV disease .

Opportunistic infections may affect nutritional status by reducing nutrient intake and absorption while increasing the utilisation and excretion of other nutrients, leading to protein-energy malnutrition and certain micronutrient deficiencies. This cycle usually contributes to weight loss and wasting seen in those with uncontrolled HIV infection and AIDS. Decreased food intake is the most important cause of malnutrition and wasting. Other causes are malabsorption of nutrients and alterations in metabolism. It is important to identify and treat malnutrition promptly as it negatively affects immune function and is associated with HIV disease progression.

Good nutrition plays an important role in the comprehensive care of PLHIV as it:

- Helps prevent malnutrition and wasting
- Enhances the body's ability to fight opportunistic infections
- Helps achieve and maintain optimal body weight
- Improves the effectiveness of medications
- Helps prolong good health
- Improves the quality of life



In general, the basics of a healthy diet are the same for everyone, including people with HIV .

- Eat a variety of foods.
- Eat the right amount of food to maintain a healthy weight.
- Choose foods low in saturated fat, salt, and added sugars.

Nutrition is the sum of all the processes involved in the body's taking in, assimilating and using nutrients. Food contains the nutrients that the body needs for the following:

- Development, growth, maintenance, replacement and repair of cells and tissues
- Resistance to and fighting of infection
- Production of energy, warmth, movement and work

When the body does not get enough quality food, it becomes weak and cannot function properly. The nutrients the body needs to function are water, carbohydrates, proteins, fats, vitamins and minerals. The body needs both macronutrients and micronutrients in the right amounts and combinations to function properly.

36. Food and Agriculture Organization of the United Nations (FAO). 2002. Living Well with HIV/AIDS: A Manual on Nutritional Care and Support for People Living with HIV/AIDS. Rome.

37. National Institutes of Health, USA. HIV and Nutrition and Food Safety. https://hivinfo.nih.gov/understanding-hiv/fact-sheets/hiv-and-nutrition-and-food-safety

Macronutrients

Carbohydrates, proteins and fats are needed in large amounts and are referred to as macronutrients. The major cause of HIV-related weight loss and wasting is a combination of low energy intake and increased energy demands as a result of HIV and related infections. Energy requirements increase by 10% to maintain body weight and physical activity in asymptomatic HIV-infected adults and growth in asymptomatic children. Symptomatic HIV-infected adults have to increase their energy intake by 20 to 30% whereas children experiencing weight loss need an additional 50% to 100% energy intake on top of their normal requirements. Effective ART greatly reduces the energy demands.

Table 10.1: List of Macronutrients

Nutrient	Sources	Functions
Protein	• Meat-chicken, pork, beef, fish • Dairy-milk, yoghurt, cheese • Eggs • Nuts/grains-peanuts, bread • Legumes-beans	• Provide necessary materials for building and repairing worn-out tissues • Develops the immune systems and resistance to infections
Carbohydrates	• Vegetables • Papa, samp, potatoes • Fruits - peaches, bananas, apples • Grains - bread, rice, cereal	• Provide energy for the body • Fibre (a non-digested type of carbohydrate found in grains, fruits and green vegetables) prevents constipation, coronary heart disease and diabetes • Soluble fibre is used in diarrhoea treatment
Fats	• Cooking oil, butter and animal fats	• Provide energy and heat; important for weight gain • Aid in the absorption of and transportation of fat-soluble vitamins

Micronutrients

Vitamins and minerals are needed in smaller amounts and are referred to as micronutrients. PLHIV should consume diets that ensure micronutrient intake meets the recommended daily allowance (RDA) levels. Multivitamin and mineral supplementation should be considered for those at risk of vitamin or mineral deficiencies.

Table 10.2: List of micronutrients

Nutrient	Source	Function
Vitamin A	Carrots, spinach, pumpkin, peaches, tenane, sepaile, milk eggs, liver, fish, oils	• Good for white blood cells, vision and bone development • Anti-oxidants needed for immune function and resistance to infections
VitaminB1 (thiamine)	Milk, eggs, beans, liver, fish, Likhobe tsa poone, tsa mabele, tsa koro, pork	• Used in energy production • Supports heart, muscles, and central nervous system
Vitamin B2 (riboflavin)	Milk, eggs, beans, nuts, dairy, nama ea khoho, fish, likhobe	• Energy production, good vision, making blood cells

Vitamin B3 (niacin)	Milk, eggs, red meat, poultry, peanuts, likhobe	• Energy production, healthy skin, supports the nervous system
Vitamin B6	Likhobe, potatoes, bananas, beans, poultry, green vegetables, tomatoes, liver, fish, watermelon	• Breakdown protein and fat, production of antibodies • Assists in production of red blood cells and supports function
Vitamin B12	Fish, liver, poultry, kidneys, sardines, milk, cheese, yoghurt, eggs	• Formation of red blood cells • Maintains nerve and digestive tissues
Vitamin C (ascorbic acid)	Oranges, tenane, lshoabe, theepe, spinach, tomatoes, bell peppers, apples	• For healthy teeth, gums and bones • Fights infection • Helps iron absorption • An anti-oxidant
Vitamin E	Sunflower oil, likhobe, beans, peas, lentils, cabbage, tenane, leshoabe, eggs	• An anti-oxidant that helps prevent cells from damage, increase disease resistance, and aids healing of scar tissue
Folate (folic acid)	Poultry, liver fish, beans, peas, green leafy vegetables, oranges	• Builds new cells, especially red blood cells
Calcium	Milk, mafi, yoghurt, spinach, cabbage, sepaile, beans, peas, lentils	• Builds strong bones and teeth • Necessary for normal muscle function and blood clotting
Iodine	Fish, iodized salt, meroho ea Sesotho (e.g. theepe, tenane, leshoabe, seruoe)	• Development and proper thyroid function • Important for normal growth and development, and prevent goiter
Zinc	Theepe, sepaile, pumpkin, likhobe, nuts, beans, corn, milk, cheese, liver, eggs, garlic, poultry, fish, red meat	• Important for growth and development • Supports the immune system and improves wound healing
Selenium	Fish, red meat, likhobe, eggs, rice, sepaile	• An anti-oxidant • Helps prevent breakdown of cells
Magnesium	Beans, peas, lentils, likhobe, spinach, sepaile	• Supports muscle and nerve function • Releases energy from fats, proteins and carbohydrates • Build strong bones and teeth
Iron	Red meat, pork, liver, eggs, green leafy vegetables, beans, peas, lentils, mangangajane	• Needed for the production of red blood cells and the delivery of oxygen to body tissues

SECTION 10.1: CHILDREN LIVING WITH HIV

HIV-infected children should be routinely assessed for nutritional status, including weight and height at scheduled visits. Nutritional assessment and support should be an integral part of the care plan for any child living with HIV. Several anthropometric indices are used to assess nutritional status in children: weight for age (underweight), weight for height (wasting), and height for age (stunting). All indices are compared against a reference population of healthy children.

Poor growth is reported in as many as 50% of HIV-infected children. HIV infection adversely affects pregnancy outcome; infants born to HIV-infected women have significantly lower mean birth weight and length, regardless of the infants' HIV status, compared with infants born to uninfected women.

Progressive stunting, that is, proportionately decreased linear and ponderal growth, appears to be the most common abnormality in perinatally infected children and is accompanied by preferential decreases of fat-free or lean body mass. Although data are inconsistent, deficiencies of several micronutrients with the potential to affect growth adversely have been identified, including that of vitamin A. (WHO, 2005).

To define malnutrition in a clinical setting, wasting is a commonly-used indicator. It is defined by weight (kg) for height (cm) in standard deviations from the median (Z-score) or percentage of the median, as indicated below. In addition, mid-upper arm circumference (MUAC) may be used for assessment of nutritional status of infants and children 6-59 months of age.

A child with moderate acute malnutrition should be enrolled on supplementary feeding, while one with severe acute malnutrition should be enrolled on therapeutic feeding. If there are no complications, children with severe acute malnutrition may be treated as outpatients using ready-to-use therapeutic food (RUTF) such as PlumpyNut. If there are complications, admit and give F75 or F100 . See Annex 10 for reference values for weight for length/height Z-scores (to assess the degree of malnutrition) and Annex 11 for BMI tables.

Table 10.3: Z-Score and MUAC Interpretations

Definition	Z Score Range	MUAC (cm)	Comment
Normal	Median to -1 SD		Reinforce good nutrition
Mild wasting	Between -1SD and -2SD		Counsel on nutrition
Moderate wasting	Between -2SD and -3SD	11.5 – 12.5	Supplementary feeding
Severe wasting	Below -3 SD	< 11.5	Inpatient management if complications. If no complications, outpatient management with RUTF

SECTION 10.2: INFANT FEEDING IN THE CONTEXT OF HIV

The nutrition of children is critically important. Safe infant feeding practices can reduce the likelihood of MTCT and the risk of infant death from malnutrition and other childhood infections. Furthermore, women have the right to full information to help them decide how to feed their children and to appropriate support.

Infant feeding counselling should begin during pregnancy to enable pregnant women living with HIV to make informed infant feeding decisions. Every mother living with HIV should receive counselling which includes general information about the risks and benefits of the various infant feeding options and specific guidance on selecting the option most suitable for her particular situation including her health status and home environment.

Infant feeding from zero to six months of age

Exclusive breastfeeding is recommended for the first six months of life. Antiretroviral prophylaxis should be provided to HIV-exposed infants from birth (See Chapter 5) to further reduce the risk of HIV transmission.

All mothers should be counselled on management of breast conditions (e.g. nipple cracks, fissures, etc.) and breastfeeding difficulties. HIV can be transmitted from the mother to the infant during breastfeeding. However, this risk can be reduced to a minimum by providing ART to the mother and by feeding the baby exclusively with breast milk for the first six months. This means that nothing else (i.e. water, porridge, etc.) should be given to the infant. Prescribed medications may still be given.

If Replacement feeding (with commercial infant formula) is given to HIV-exposed infants, all of the following conditions should be met.

38. National Guidelines for the Integrated Management of Acute Malnutrition (IMAM)

- Safe water and sanitation can be assured at the household level and in the community
- The mother or other caregiver can reliably provide sufficient infant formula milk to support normal growth and development of the infant
- The mother or caregiver can prepare the milk cleanly and frequently enough so that it is safe and carries a low risk of diarrhoea and malnutrition
- The mother or caregiver can exclusively give infant formula milk for the first six months

  The family is supportive of the practice
- The mother or caregiver can access health care that offers comprehensive child health services

Benefits of Exclusive Breastfeeding

- Breast milk provides complete nutrition for the infant for the first six months of life
  - Colostrum, the milk produced during the first few days of the infant's life, is rich in vitamins and antibodies. It has other anti-infective properties as well.
  - Breast milk contains antibodies from the mother which are beneficial to the infant as the infant's own immune system is immature.
  - Breast milk provides vital protection against deadly childhood illnesses such as diarrhoea and respiratory infections.
  - Breast milk is easily digested and its composition changes to meet the developmental needs of the growing infant.
- Breast milk contains enzymes that help in the digestion of fat.
- Breast milk is natural and does not add extra costs.
- Breastfeeding promotes bonding between mothers and their babies.
- Breastfeeding helps the uterus to contract after delivery and reduce the risk of post-partum haemorrhage.
- Breast milk is always available and no special preparation is needed.

Challenges of Exclusive Breastfeeding

- Exclusive breastfeeding can be difficult, particularly for mothers working away from home.
- It may be difficult to withstand family or community pressure to give other liquids or foods.
- The mother requires additional calories to support breastfeeding.

Benefits of Replacement Feeding with Commercial Infant Formula

- There is no risk of HIV transmission to the infant.
- Commercial infant formula contains most of the nutrients that an infant needs.
- Other people (besides the mother) can feed the infant.

Challenges of Replacement Feeding with Commercial Infant Formula

- The infant does not benefit from the protective effects of colostrum
- Infant formula does not contain the antibodies found in breast milk
  - There is an increased risk of diarrhoeal illnesses and respiratory infections with an increased risk of infant mortality, particularly in the first six months of life.
  - There is an increased risk of malnutrition due to inadequate supply of infant formula or inappropriate feeding.
- Commercial infant formula is expensive (and a regular supply must be assured).
- It requires a regular supply of fuel and clean water for preparation.
- Infant formula cannot be stored; it must be freshly prepared each time it is needed.

Although exclusive breastfeeding is recommended for all HIV infected mothers for the first six months of life, each mother should be informed of all options available to her and taken through an assessment of her individual circumstances to identify the best infant feeding option. Whatever choice a mother makes, she should be supported with emphasis on the importance of exclusive practice of the option taken.

Infant Feeding from Six to twenty-four Months of Age

- Mothers living with HIV and on ART should continue breastfeeding for 24 months and beyond, as desired.
- Mothers should continue ART with viral load monitoring every three months. This will support maternal health and reduce the risk of HIV transmission to the infant.
- After six months of age, all infants should begin receiving complementary foods in addition to breast milk (or replacement milk, if the
  mother has chosen this feeding option). This is a high-risk time for all infants, as it is often associated with growth faltering, illness, and
  increased risk of malnutrition. Mothers living with HIV should receive regular support and counselling for appropriate complementary feeding.
- Health workers should promote and encourage responsive (active) feeding applying the principles of psychosocial care, as well as support the maintenance of food safety and hygiene to avoid food borne diseases.
- Where possible, food demonstrations should be used to introduce mothers to safe and nutritious meals for their infants. Guidance should focus on the quantity, quality, and frequency of feeding. Refer to Lijo tsa Tlatsetso tsa masea le bana booklet for complementary feeding recipes.
- All infants and children 6- 23 months of age should receive micronutrient powders (MNPs) regardless of their HIV status.

When Mothers Decide to Stop Breastfeeding

When mothers stop breastfeeding, they should do so gradually, within one month. Stopping breastfeeding abruptly is not advisable.

If the infant is younger than six months of age when breastfeeding ceases, commercial infant formula milk should be provided exclusively. Modified animal milk is not recommended for children under six months of age.

If the infant is older than six months of age when breastfeeding ceases, feeding options are:

- Commercial infant formula milk or
- Animal milk (boiled for infants under 12 months of age), as part of a diet providing adequate micronutrient intake.

Guidance on expressed breastmilk

All breastfeeding mothers should consider expressing breast milk as an interim feeding strategy under the following special circumstances:

- In the neonatal period, if the infant is born with low birth weight or is otherwise ill and unable to breastfeed;
- The mother is unwell and temporarily unable to breastfeed, or has a temporary breast health problem such as mastitis.

Mothers choosing to utilize these interim feeding strategies should receive appropriate support to express breastmilk in order to ensure that the mother expresses enough milk to fulfil the nutritional requirements of the infant.

SECTION 10.3: MATERNAL NUTRITIONAL SUPPORT

Good nutrition for pregnant and breastfeeding mothers is important for the survival and well-being of the developing baby. In addition, the nutrition before, during and after pregnancy of a mother living with HIV can influence her own health and the risk of transmitting HIV to her child. Mothers living with HIV are at a higher risk of malnutrition and illness while pregnant and breastfeeding.

During pregnancy or lactation, the mothers' need for energy and other nutrients increases to meet the demands of:

- Adequate weight gain due to pregnancy
- Development of the baby
- Milk production

Therefore, in order to maintain good health, mothers living with HIV need additional food to meet the extra energy and nutrient needs associated with HIV, pregnancy and lactation. Food intake for pregnant women should include a variety of foods to meet macro and micronutrient requirements. The woman should be advised to eat more than her normal diet throughout her pregnancy as she needs about 300 extra kcal per day. She will need about 600 extra kcal per day during lactation.

A pregnant woman's weight should be taken at each visit. The weight taken during the first visit should be treated as the baseline weight. Normally, a woman should gain 9 - 11 kg during her pregnancy. After the first trimester, a pregnant woman gains around 2 kg every month or 0.5 kg per week. To calculate the expected weight gain since her previous visit, multiply the number of weeks elapsed since the previous visit by 0.5 kg. This should be compared with the actual weight gained.

If the diet is not enough, with less than the required number of calories, the woman might gain less than expected weight. An inadequate dietary intake can therefore be suspected if the woman has gained less than 2 kg per month and should be put on food supplementation. A low weight gain may lead to intrauterine growth retardation (IUGR) which may result in a low birth-weight baby.

Excessive weight gain (more than 3 kg in a month) should arouse the suspicion of pre-eclampsia/twins (multiple pregnancy). Check the woman's blood pressure and test her urine for proteinuria. Refer to higher levels of care for suspected and confirmed pre-eclampsia.

SECTION 10.4: ADULTS LIVING WITH HIV

Nutritional assessment and management are central components to the comprehensive care of PLHIV. Numerous studies have shown the association between indices of nutritional states such as body mass index (BMI) and mortality. Body mass index is the main indicator for malnutrition in adults along with MUAC. The latter could be considered for adults whose height cannot be taken due to illness or disability. MUAC is also recommended for nutritional assessment in pregnant women. Defined as body weight in kilograms divided by the height in meters squared [Weight (kg)/ Height (m2)], BMI interpretations listed in table 10.4.

Table 10.4 BMI Interpretation

BMI Range	Interpretation
≥30.0	Obese
25.0 – 29.9	Overweight
18.5 – 24.9	Normal
16.0 – 18.4	Moderately undernutrition (MAM)
< 16.0	Severely undernutrition (SAM)

When BMI below 18.5 is diagnosed, therapeutic food supplementation is recommended. A BMI of 30 or greater is considered obese; obese clients should be referred to a nutritionist for education on an appropriate diet, exercise, and weight loss strategies.

Table 10.5: Categories of Malnutrition

Moderate Acute Malnutrition	Severe Acute Malnutrition
BMI: 16 – 18.5 or MUAC: Men: 22.5 to 23cm Women: 21.5 to 22cm AND No recent weight loss	BMI: < 16.0 or MUAC: Men: < 22.5cm Women: < 21.5cm AND 5 – 10% recent weight loss

CHAPTER 11: WELLNESS INFORMATION

INTRODUCTION

People living with HIV need education, counselling and support to care for themselves and lead healthy, positive lives. A healthy lifestyle can help to slow disease progression and promote safer sexual practices, which in turn will reduce the risk of transmitting HIV to others.

SECTION 11.1: WELLNESS PROGRAM

Some aspects of a 'Wellness' Program include:

- **Healthy diet**
  - PLHIV should eat healthy foods
  - Eat a balanced diet, which includes many fresh fruits and vegetables
  - The use of nutritional supplements can be of value if the client is unable to eat a balanced diet.
- **Avoid smoking**
  - Tobacco smoke (first or second-hand) harms lung immunity and overall health
  - Since respiratory infections account for a large proportion of opportunistic infections, a healthy respiratory system is important.
  - Clients should be encouraged and assisted to stop smoking.
- **Avoid alcohol intoxication**
  - Too much alcohol is harmful to one's health
  - Since many drugs used in HIV disease are potentially toxic to the liver, a healthy liver is important.
  - Advise clients to minimize alcohol intake, which among other things, will have a negative effect on adherence to ARVs and other important medications.
- **Keep fit and exercise regularly**
  - Exercise helps to keep the body in good physical shape and can help clients to be well and strong
  - Advise clients not to over-stress the body, especially when symptoms of illness are present (diarrhoea, cough, fever, etc.)
  - Exercise also contributes to mental health and well-being
- **Avoid taking unnecessary drugs**
  - Any drug has potential side effects.
  - The potential risk of medication must always be weighed against the potential benefit.
  - Clients should only take medication which has been prescribed by a trained health care provider.
- **Get a lot of rest and sleep**
  - Rest regularly and get enough sleep.
  - If at all possible, clients should avoid too much stress.
- **Have a positive mental attitude**
  - A positive mental attitude promotes well-being, and helps to keep clients well for longer.
- **Alternative therapies**
  - The value of alternative therapies such as herbal and traditional medication has not been proven. In addition, the effects of these medications on ARVs has not been evaluated. Therefore, it is **recommended that PLHIV do not take herbal and traditional medications in conjunction with ARVs** to prevent possible development of resistance and severe adverse effects, such as liver failure.
- **Seek treatment early for medical problems**
  - It is important to seek treatment for medical problems as soon as symptoms appear.
  - Many HIV-related conditions can be effectively treated if they are diagnosed early.
  - Encourage clients to come for assessment as soon as they notice any problems.
- **Safer sexual practices**
  - It is important to prevent HIV transmission.
  - Effective ART leading to an undetectable viral load is the best protection.
  - Condoms are recommended for all sexual encounters.
  - PrEP is recommended for partners of PLHIV known to have detectable viral loads.
- **Illegal drugs (including marijuana)**
  - These should be discouraged as they can have a negative impact on adherence and influence people to make unwise and unsafe decisions for their health
- **Advice on vaccines**
  - All PLHIV are advised to have an annual Influenza vaccine.
  - Hepatitis B vaccination should be given to all people living with HIV who are hepatitis B surface antigen negative
  - Live vaccines should be avoided in those with weakened immune systems (particularly if CD4 < 200 cells/mm3). The effectiveness of vaccines in PLHIV is greater when CD4 cell count is > 200 cells/mm3.
  - COVID-19 vaccination is recommended for PLHIV.

[38] Lesotho Integrated Management of Acute Malnutrition Protocol, 2015.

CHAPTER 12: INFECTION CONTROL

INTRODUCTION

An effective infection control program includes several components that work to prevent healthcare providers and clients from being exposed to infectious particles or fluids, including avoidance of needle stick and other sharps-related injuries. Avoidance of occupational exposure should be given top priority. Each health facility in Lesotho should have an Infection Control focal person and Infection Control plan.

SECTION 12.1: UNIVERSAL PRECAUTIONS

Measures to be undertaken include universal precautions, such as the use of gloves when exposed to potentially infectious fluids, waste management in all settings and proper disposal of sharps and other contaminated materials in approved containers.

A model of quality assurance should foster a culture of safety, reporting injuries and accessing care and treatment. Surveys of health care providers indicate that 50% or more do not report their occupational percutaneous injuries.

Universal precautions are designed to prevent transmission of human immunodeficiency virus (HIV), hepatitis B virus (HBV) and other blood borne pathogens when providing health care. Under universal precautions, blood and certain body fluids of all clients are considered potentially infectious for HIV, HBV and other blood-borne pathogens.

Universal precautions involve the use of protective barriers such as gloves; gowns; aprons; masks or protective eyewear; which reduce the risk of exposure to potentially infective fluids and materials. Universal precautions are applied in a two-way fashion: healthcare provider to client and client to healthcare provider. They include:

- Hand-washing before and after patient contact
- Decontamination of equipment and devices
- Use and disposal of needles and sharps safely (avoid recapping of needles)
- Wearing personal protective equipment (PPE)
- Promptly cleaning up blood and body fluid spills
- Use of safe disposal systems for waste collection and disposal

All health care providers should routinely take appropriate barrier precautions to prevent skin and mucous membrane exposure during contact with any client's blood or body fluids.

Examples of PPE include:

- Gloves of correct size
- Gowns
- Aprons as waterproof barriers
- Eye wear to avoid accidental splashes (face shields or goggles)
- Surgical masks
- N95 or KN95 respirators
- Foot wear such as rubber boots or clean leather shoes

Hand Hygiene

Hand-washing **is the single most important measure** to reduce the risks of transmitting microorganisms from one person to another. Washing hands as promptly and thoroughly as possible between patient contacts and after contact with potentially infectious material is an important component of infection control.

- Use soap and water for hand washing under running water for 30-40 seconds.
- Use alcohol-based hand rubs when hands are not visibly soiled.

In addition to hand-washing, gloves play an important role in reducing transmission of microorganisms. Gloves should be worn:

- When touching blood and body fluids, mucous membranes or non-intact skin of all patients.
- When handling items or surfaces soiled with blood or other body fluids.

Change gloves after contact with each patient. Wash hands and other skin surfaces immediately if contaminated with blood or other body fluids. Immediate hand washing is also recommended on removal of gloves. Routine use of gloves should reduce the incidence of blood contamination of hands during phlebotomy but cannot protect against penetrating injuries caused by needles or other sharp instruments. Gloves should never be washed for reuse. Use of gloves is obligatory when the health care provider has cuts, scratches, or other breaks in his/her skin. Performing finger and/or heel sticks on children requires gloves.

Airborne Precautions

Airborne precautions are designed to reduce the risk of airborne transmission of infectious agents. Airborne transmission occurs by dissemination of nuclei of evaporated droplets that may remain suspended in the air for long periods of time. N95 masks should be used by health care providers in situations where exposure to aerosols or airborne infections is possible. Tuberculosis is the classic example of an infection with airborne transmission.

Administrative controls

- Prompt identification of infectious cases
- Physical isolation of patients known or suspected to have infection (e.g. TB)
- Coughing patients should be separated from other outpatients in waiting areas
- Physical separation of presumptive TB cases from PLHIV is especially important

Note: These controls are most effective and least expensive.

Environmental (or engineering) controls

These are important in waiting rooms, consultation rooms, counselling rooms, and other places within health facilities where infectious clients (suspected or confirmed) receive services, including inpatient and outpatient settings

- Natural ventilation, which can be as simple as opening windows.
- Mechanical ventilation such as using extraction fans.
- Ultraviolet irradiation
- Air filtration

Personal respiratory protection

- Use of N95 or any other respirators
- The respirator must be properly fitted in order to protect

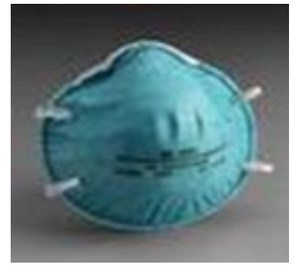


Figure 12.1: N 95 Respirator Mask

Note that surgical masks do not protect against TB or other airborne infections. Health care workers should wear N95 masks when serving clients with airborne infections; clients (presumptive or confirmed) should be given surgical masks to wear and educated on proper cough hygiene.

Handling and Disposal of Sharps

Figure 12.2: Sharps Container

- Use syringe and needle once only.
- Do not recap the needle after use.
- Do not bend or break needles.
- Use puncture-proof containers for disposal.
- Clearly label container: "SHARPS".
- Never overfill or reuse sharps containers.
- Dispose of sharps according to hospital guidelines.
- Do not recap a needle before disposal nor use the one-hand technique; it is high risk behaviour. If necessary, use needle removers which remove the needle from the syringe by cutting the hub of the syringe and/or the needle.
- Use auto-disable syringes or automatically retractable syringes. The advantage is that they cannot be re-used.

Management of Occupational Exposure

- Provide immediate care to the exposed site
- Evaluate the exposure
- Give post exposure prophylaxis (PEP) for eligible exposures
- Perform follow up testing and counselling as necessary

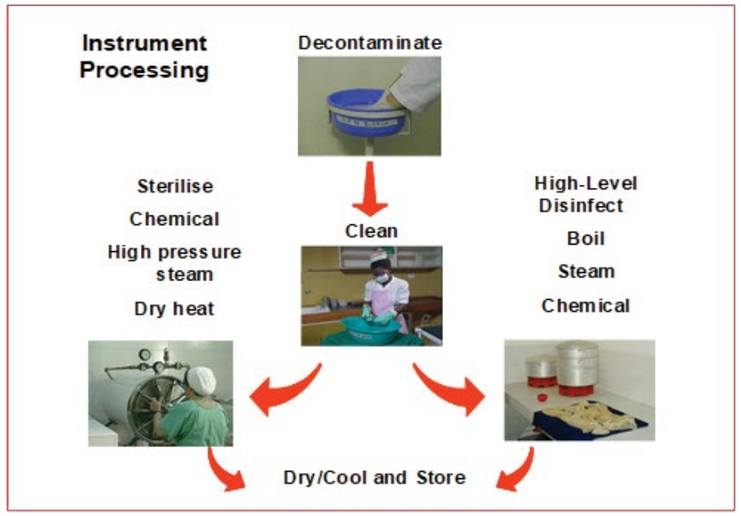
Sterilization and disinfection of medical devices

In general, medical devices or equipment for patient use that enters sterile tissue or the vascular system or through which blood flows should be sterilized before each use. Sterilization involves the use of a physical or chemical procedure to destroy all microbial life, including highly resistant bacterial endospores.

Disinfection involves the use of a chemical procedure that eliminates virtually all recognized pathogenic microorganisms but not necessarily all microbial forms (i.e. bacterial endospores) on inanimate objects.

There are three levels of disinfection: high, intermediate and low. High-level disinfection kills all organisms, except high levels of bacterial spores. It is accomplished with a chemical germicide marketed as a sterilant. Intermediate disinfection kills mycobacterium, most viruses, and bacteria with a chemical germicide (e.g. Sidex). Low-level disinfection kills some viruses and bacteria with a chemical germicide registered as a hospital disinfectant. Gloves should always be worn during the sterilization process.

Figure 12.3: Instrument Processing



Apply risk reduction strategies:

- Assess condition of protective equipment
- Safely dispose waste materials
- Avail appropriate cleaning and disinfecting agents
- Decontaminate instruments and equipment
- Monitor skin integrity

Ongoing education for health care providers in infection prevention is essential to make all staff aware of established infection control policies.

SECTION 12.2: GLOSSARY

Blood-borne pathogens: Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include but are not limited to hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV).

Occupational exposure: Means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of a health care provider's duties.

Percutaneous: Effected or performed through the skin.

Phlebotomy: The sampling of blood for transfusion, pheresis, diagnostic testing or experimental procedures.

Recapping: The act of replacing a protective cap on a needle

Seroconversion: The development of antibodies in the blood of an individual following exposure to an infectious agent.

Sharps Injury: An exposure that occurs when any sharp medical instrument penetrates the skin

Favero MS, Bond WW. Sterilization, disinfection, and antisepsis in the hospital. In: Manual of Clinical Microbiology, 1991; chapter 24:183-200. American Society for Microbiology. Washington, DC; Rutala WA.

Standard precautions: Standard Precautions are used for all patient care. They're based on a risk assessment and make use of common-sense practices and personal protective equipment that protect healthcare providers from infection and prevent the spread of infection from patient to patient .

Universal Precautions: Designed to prevent transmission of human immunodeficiency virus (HIV), hepatitis B virus (HBV), and other blood borne pathogens when providing health care. Under universal precautions, blood and certain body fluids of all patients are considered potentially infectious for HIV, HBV and other blood borne pathogens.

CHAPTER 13: OPERATIONAL DELIVERY

INTRODUCTION

Provision of services that best meet the need of the clients and that promote continuity of care and treatment are key to achieving desired health outcomes. This chapter provides guidance on operational delivery issues to ensure effective delivery of HIV prevention, care and treatment services.

SECTION 13.1: HUMAN RESOURCES FOR HEALTH

Human Resources for Health (HRH) are a critical and integral component in the delivery of HIV services in Lesotho. Different cadres, professional and lay, work together to improve the uptake of services, improving health and saving Basotho lives. HRH also contribute to advocacy, delivery, and monitoring of quality health services, not only in facilities, but also in communities. Personnel support community mobilization, demand creation and community involvement.

Capacity building

In order to have capacity in all levels, MOH will lead training processes and exercises of all necessary cadres involved in care and treatment. Accredited trainers will train those involved in services delivery, monitoring and evaluation, and communications. Clinicians, pharmacists, laboratory teams and authorized lay cadres will be capacitated to deliver recommended services. MOH also will build capacity to those collecting and managing data within services delivery points, at facility and community levels. The capacity building process will be layered from hospital, health centre, health post to community levels with a network of trainers and mentors. Capacity building will use mixed approaches including face-to-face, virtually, self-paced online courses and practical hands-on sessions to achieve desired knowledge and skills.

Both pre- and in-services training for health workers play a key role in building competences and skills to support expansion of ART services. In addition, mentorship and supervision of health workers and community-based care providers is necessary to ensure high-quality HIV care services. Newer approaches to learning, including distance learning and online courses, will be used to support learning. Suggested approaches include:

- Decentralizing training/capacity building exercises to district level and increase localized trainings (e.g. cluster model approaches)
- Develop training database that can be used at district level to track different cadres who have been trained.
- Develop certified online modules with respect to ART initiation and continued care
- Provide facility/individual certification for relevant trainings to motivate skills development

Services delivery

Services are meant to be readily available, accessible and highly utilized by targeted clients who will be given a chance to evaluate the quality and suggest further improvements.

- Integrated approaches at all facilities to reach all clients
- Coordination and integration of services and stakeholders for sample collection, transportation, laboratory services, and results return
- Efficient and effective management of personnel to cater for clients at all levels

- Continuous inclusion of other cadres of staff at health facilities and in communities i.e. pharmacy technicians, laboratory personnel, data management personnel, lay counsellors, psychosocial supporters, retention supporters, village health workers and mentor mothers.
- Greater inclusion and involvement of private practitioners, to reduce the burden on public sector, and increase availability, accessibility and greater utilization of health services
- Increased services for men at all service points, at facilities and in communities with innovative novel approaches like Men's Clinics, workplace programs, mobile services for men and hotline numbers to set appointments

Task shifting and sharing

Task shifting and sharing are necessary to address the HRH challenges in Lesotho and to improve services delivery and documentation. Task-shifting and sharing involves the rational redistribution of tasks and sharing responsibilities among health workers such that specific tasks are reassigned as appropriate from highly qualified and shared with lesser qualified health workers to improve efficiencies and effectiveness in the available workforce. These approaches help improve access to services at health facilities and in the communities where there are less qualified cadres. For example, physicians will be able to devote more time managing clinically complicated cases while other trained cadres will support management of established clients and offer health education and counselling. It is important to establish and maintain mentoring and supportive supervision to ensure quality is not compromised by task-shifting and sharing through timely and regular supportive supervisions and mentorships.

The following recommendations apply to serve all adults, adolescents and children living with HIV.

- Trained non-physician clinicians, midwives and nurses will initiate first-line ART
- Trained non-physician clinicians, midwives and nurses will maintain ART
- Trained and supervised community health workers will dispense pre-packed ART between regular clinical visits
- Trained and supervised lay healthcare providers will distribute pre-packed ART

Communications

Advocacy, community mobilization, community involvement, demand creation and success stories are encouraged and recommended for HIV prevention, care and treatment services. Introductions of new approaches, technologies and services will be performed at all levels for understanding and buy-in of stakeholders. Communities will be mobilized timely for current services and possible new services that will contribute to the improvement of their health. Community and religious leaders will be involved.

Demand will be created so that available services are accessible and utilized by the intended clients. Health personnel will proactively promote services and not simply wait for clients to seek services. For learning purposes, MOH will promote and lead publication of success stories and best practices on approaches, innovations, strategies and progresses in each service offered.

SECTION 13.2: LABORATORY AND DIAGNOSTIC SERVICES

Laboratory and diagnostic services are essential components of comprehensive ART service packages. Since HIV-related diagnostic services occur at health facility and community level by different health workers, the need for strengthening relevant quality assurance systems remain paramount. As viral load is the preferred monitoring tool for HIV treatment response, laboratory services must support the expansion of viral load testing capacity to meet the country requirements.

To strengthen the network of laboratory and diagnostic services, it is important to consider the following:

- Strengthen transport logistics for sample transportation and delivery of results at all levels
- Strengthen laboratory networks to support and monitor decentralization and integration of testing services or to provide effective referral system for laboratory services
- Improve laboratory infrastructure and human resource capacities for increased and sustained access to quality diagnostic and monitoring testing services.
- Maintain standardized testing methods to streamline procurement, quality assurance, maintenance and training
- Use of high quality and evaluated diagnostics methods before introduction into the system
- Strengthen supply chain management system for laboratory commodities and equipment maintenance
- Integrate electronic tracking of samples to reduce loss of samples and reduce turn-around-times
- Mobilize sufficient resources to support laboratory services (e.g. genotypic resistance testing, improved viral load transport networks)
- Develop and implement biosafety and waste management systems to protect human life and the environment

In addition to the above considerations, laboratory services should build an efficient system for sample and results transportation. There will be expedited result reporting and data management to reduce turnaround time for early infant diagnosis and viral load tests. Laboratory services will further support scaling up POC VL to cover sub-population of PLHIV (PBFW, infants, children and virally unsuppressed PLHIV); mapping POC platform (GeneXpert and Abbott PIMA) and ensuring the contractual agreements with the vendors are in place.

Quality management systems for laboratory services need to be strengthened including external quality assessments and internal quality controls. Testing sites should be supported to enrol into external quality control programmes for proficiency testing. Adherence to and use of standard operating procedures will be enforced at all levels. Service agreements for equipment will be maintained and expanded to cover all the relevant testing equipment.

Task sharing of specimen collection and point-of-care testing with non-laboratory personnel is recommended as the laboratory professional staffing capacity is limited.

SECTION 13.3: PROCUREMENT AND SUPPLY MANAGEMENT (PSM) SYSTEM

The need to ensure continuous access and availability of good quality, efficacious, safe and cost-effective medicines cannot be over emphasized. The PSM system should be strengthened to cope with an increasing volume of patients that require medicines as the ART program matures. With decentralization and integration of ART services with other services such TB and RMNCH, more should be done to ensure uninterrupted supply of ARVs and OI medicines in multiple care settings. The entire PSM cycle including selection, procurement, storage and distribution, use and monitoring, should be well managed.

Table 13.1: Checklist of Pharmaceutical and Laboratory Supply Chain Management Issues

Phase	Activities	Responsibility
Planning and Product selection	• Application for approval of use of new products (WHO pre-qualified) in the country, e.g. New ARVs, Diagnostics, etc	Relevant Programs
	• Update the National Essential Medicines List to include approved medicines for use in HIV management	Pharmaceutical Department
	• Develop clear implementation strategy and scale-up plans for roll-out of programs • Provide good quality data for quantification purposes	Relevant programs Pharmaceutical Department, Supply Chain Department
Procurement	• Procure medicines from pre-qualified suppliers • Procure generic medicines to reduce medicines costs • Maintain a system that fosters openness and transparency in engaging potential suppliers • Ensure sufficient buffer stock of medicines and laboratory commodities at central and service delivery levels	NDSO and Supply Chain Department
	• Implement a robust system for testing quality of medicines before use	Pharmaceutical Department
Storage and distribution	• Secure appropriate medicines storage capacity with optimal storage conditions at central and facility levels (docking system and increased delivery frequency) • Establish and strengthen effective distribution mechanism for medicines and related commodities (informed push system) • Implement effective monitoring and management systems for PSM including logistics management information system (LMIS) and electronic medicine dispensing system	NDSO and Supply Chain Department
Rational use and monitoring	• Strengthen effective use of National Guidelines, job aids, etc by service providers • Implement dispensing mechanism to strengthen patient counselling, compliance and storage instruction • Implement mechanisms and systems to promote and strengthen antimicrobial stewardship and reduce antimicrobial resistance • Institute a pharmaco-vigilance system to monitor drug toxicity, adverse drug events, product quality problems and medication errors	Pharmaceutical Department

SECTION 13.4: SUSTAINABILITY

Future considerations for improving accessibility of quality HIV services and sustainability of these services:

- Implement evidence-based interventions that demonstrate improvement
- Benchmark against similar systems that are delivering best performance
- Ensure that all people with chronic disease are enabled to minimize disease impact on the quality of their lives
- Promote a culture of systems and practices that will reduce harm to patients
- Build resilience to enable prevention, detection and response to health security threats through focused attention on quality
- Put in place the infrastructure for learning
- Provide technical assistance and knowledge management for improvement

Clients will

- Be empowered to actively engage in care to optimize their health status
- Play a leading role in the design of new models of care to meet the needs of the local community

CHAPTER 14: PROGRAMME MONITORING AND EVALUATION

SECTION 14.1: DEFINITIONS

What is Patient Monitoring?

Patient monitoring is the routine collection; compilation; analysis and use of individual patient data or a group (cohort) of patients for decision making. Data is collected over time and across service delivery points. The information can be paper based or electronic, depending on the system in use. The information is important for patient management and monitoring.

What is Patient Management?

Patient management is the relationship and interaction between a health provider or a clinical team and the individual client and is from the point of intake to discharge. It includes communication, examination, evaluation, diagnosis, prognosis and intervention. The approach focuses on fostering strong relationships with clients instead of just treating illness; it is also known as "clinical management" or "clinical monitoring." Routine documentation of services provided in relevant medical records also plays a critical role in patient management.

What is Programme Monitoring?

This is the collection of priority information about a programme to determine if it is operating according to plan. It provides ongoing information on programme implementation and functioning. It is done at facility, district and national levels.

Purpose of patient monitoring

Patient monitoring is an important part of high-quality patient care. Monitoring involves documenting all patient encounters by keeping regular and accurate records of key aspects of the care and treatment that is offered. This makes it possible to capture the history of a patient or group of patients over time and across different clinical sites and to collect data for reporting on and evaluating patient care at regular intervals.

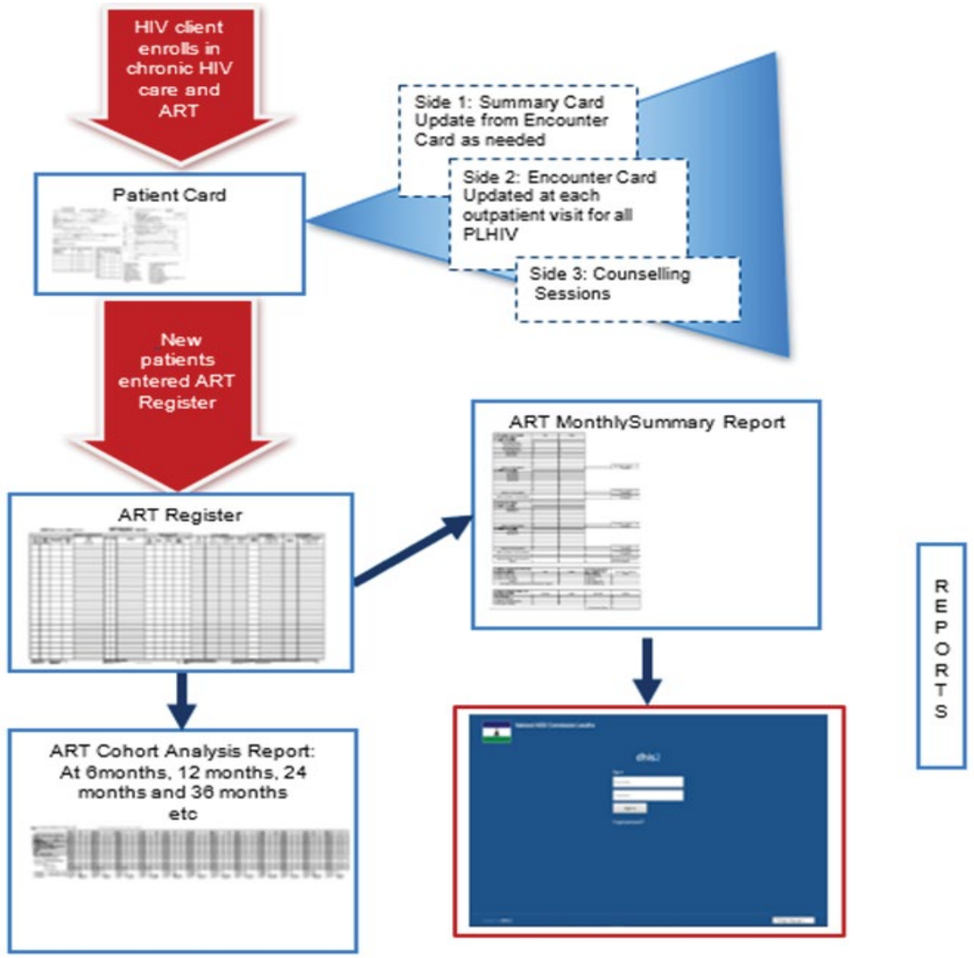
In the context of facility-based HIV care, monitoring offers three major benefits:

1. It helps by providing essential information for individual patient management.

2. It helps identify clients with adherence problems timely, which in turn helps to avoid adherence-based treatment failure
3. It also provides key information for managing the health facility (e.g. for ordering drugs and supplies or for making quality improvements).

SECTION 14.2: OVERVIEW OF THE PATIENT MONITORING SYSTEM

Figure 14.1: Overview of Data Flow



The paper-based patient monitoring system includes the following tools:

Prevention

1. A short patient-held card (bukana)
2. HIV Care / ART card (which is kept at the facility)
3. HTS Risk Assessment tool
4. HIV Testing Services (HTS) register
5. HIV Re-testing Register
6. HIVST distribution register
7. HTS Monthly Summary Form
8. Index and Partner Notification register
9. Index BIO form
10. Index Monthly Summary Report
11. PrEP Card
12. PrEP Register
13. PrEP Screening Tool
14. PrEP Monthly Summary Form
15. PEP Register

Care and Treatment Tools

16. Pre-ART register
17. ART register
18. Viral load monitoring register
19. ART monthly report book
20. Advanced HIV Disease Card
21. AHD Report Form (DHIS2 only)
22. Cohort analysis report
23. Appointment book
24. ART Referral form

SECTION 14.3: MONITORING IMPLICATIONS OF KEY RECOMMENDATIONS

Table 14.2: Implications for Monitoring of the Key Recommendations

Area	Implications for monitoring
HIV testing services	• Monitor the uptake of community-based and facility-based HIV testing strategies and testing services for all populations, including systems for linkages to care
ART	• Monitor the number and percentage of different populations (such as adults, adolescents, children and pregnant and breastfeeding women) who have initiated • Review the monitoring system to assess what disaggregation is needed for what purpose (such as CD4 counts ≤200 cells/mm^3 to routinely monitor AHD) and how to best collect the relevant data, and age disaggregation for children and adolescents
ART Regimens	• Monitor the 1st, 2nd, 3rd-line ART regimens received by clients • Monitor the phasing out and introduction of specific drugs • Monitoring tools will be adjusted to reflect new regimen options
Response to ART and diagnosing treatment failure	• Monitor the percentage of people receiving ART who had a viral load test and received the results • Monitor the reasons for switching ART regimens
Service Delivery	• Monitor retention and adherence among various populations • Monitor the integration of ART into facilities providing maternal and child health services, TB services, and drug dependence services, by documenting the facilities providing ART • Monitor whether the initiation and maintenance of ART has been decentralized as planned at various facilities by documenting the expansion of ART facilities and service points • Monitor the functionality of linkages from maternal and child health services, TB services, and drug dependence services to HIV care and ART and linkages between communities, peripheral facilities and hospitals by documenting transfers
Task shifting	• Monitor the number of non-physician clinicians, midwives, nurses, and trained nursing assistants who are trained on ART • Monitor the number of non-physician clinicians, midwives, nurses, and nursing assistants who are initiating 1st-line ART and retaining clients on ART and the number of people they have initiated and retained on ART • Monitor the number of pharmacists, pharmacy technicians, and expert patients who are trained and are dispensing ART to stable ART clients, and capture the number of people to whom they dispense ART

SECTION 14.4: MONITORING DRUG RESISTANCE

HIV drug resistance poses a significant threat to the success of HIV programs. Drug resistance leads to more rapid virologic failure among people receiving ART and increases the need for 2nd and 3rd-line regimens, which may be associated with greater toxicity, adverse events, poorer adherence and higher costs. Drug resistance may also negatively affect the ability to prevent HIV transmission using ARV-based pre- or post-exposure prophylaxis or topical microbicides. Surveillance of drug resistance is an integral component of national HIV programme.

Monitoring early warning indicators for HIV drug resistance

Early warning indicators use existing clinic and pharmacy records to assess factors associated with the emergence of HIV drug resistance at the level of ART programmes and clinics. These factors include ART prescribing practices; drug supply continuity; adherence to ART measured by on-time pick-up of ARV drugs; retention in care; and viral load suppression

.

The monitoring of early warning indicators is integrated into a national monitoring and evaluation system and provides the information needed to address practices that may lead to poor outcomes and HIV drug resistance.

Surveys to monitor acquired HIV drug resistance and associated factors in populations receiving ART

The WHO generic protocol for monitoring acquired HIV drug resistance uses a standardized survey methodology to assess population-level virologic suppression at the national level and the emergence of HIV drug resistance among populations receiving treatment. Performed regularly at representative sites, these surveys provide evidence for action at the programme and clinic level to minimize HIV drug resistance. They also provide evidence to optimize the selection of 1st and 2nd-line ART regimens.

Surveys to monitor pre-treatment HIV drug resistance

The WHO generic protocol for surveillance of pre-treatment HIV drug resistance provides a nationally representative estimate of HIV drug resistance in populations initiating ART. Performed regularly at representative ART clinics, these surveys support national, regional and global decision-making regarding the choice of 1st-line regimens.

Surveillance of transmitted HIV drug resistance among individuals recently infected with HIV

The WHO generic protocol for surveillance of transmitted HIV drug resistance provides estimates of transmitted HIV drug resistance in recently infected populations, and the results should contribute to ART policy decisions, including guidelines on ART regimens and HIV prophylaxis.

Surveys to monitor HIV incidence and prevalence of suppressed viral load

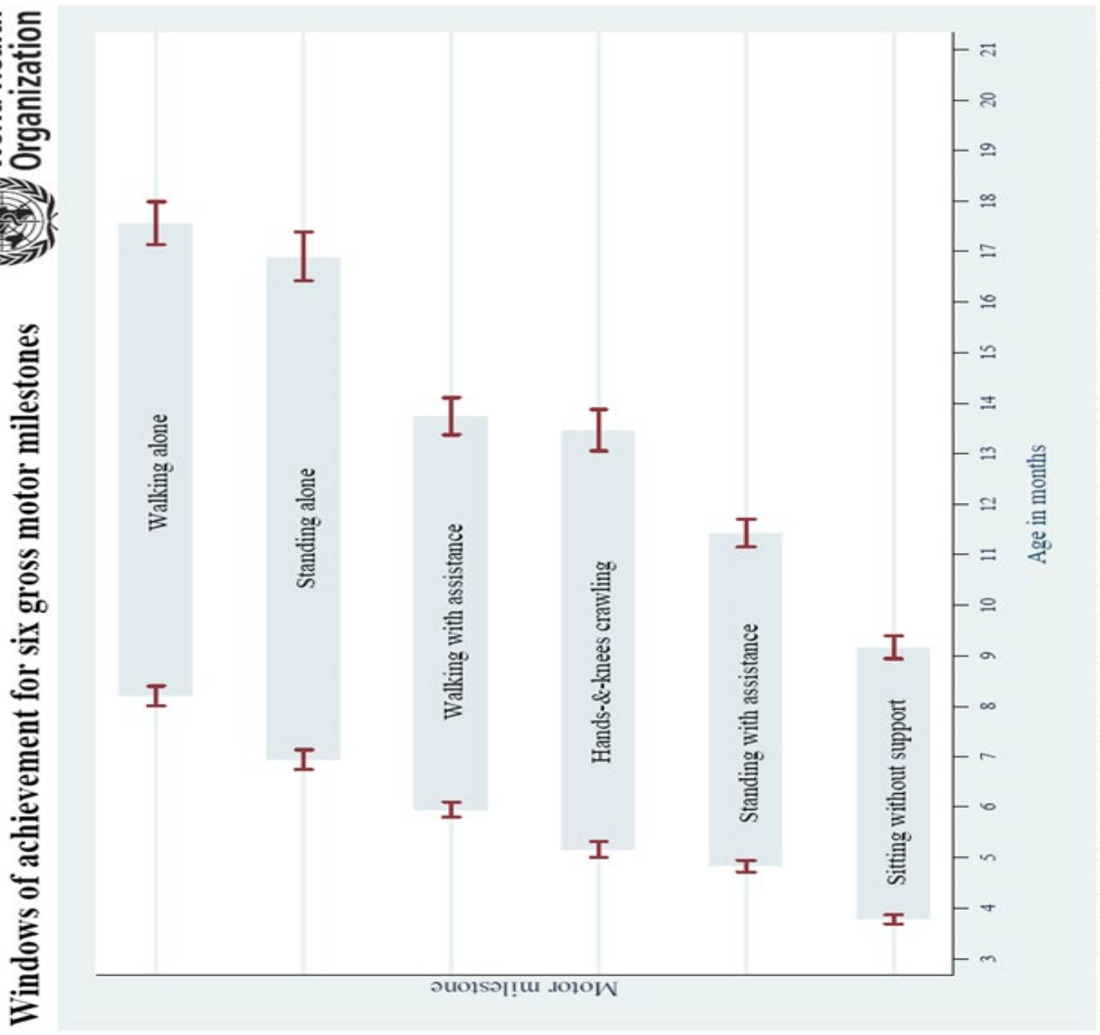
Lesotho has conducted two population-based HIV impact assessments; the goal of these surveys is to examine the distribution of HIV disease, to assess the coverage and impact of HIV services at the population level, and to measure HIV-related risk behaviours using a nationally-representative sample of adults and children

ANNEXES

ANNEX 1: DEVELOPMENTAL MILESTONES IN INFANTS AND YOUNG CHILDREN

Age	Psychosocial	Gross Motor	Fine Motor/Visual	Communication / Hearing
1 month	• follows faces to the midline	• moves all extremities equally • lifts head when lying on stomach	• opens hands spontaneously	• startled by loud sounds • cries • quiets when fed and comforted
2 months	• follows faces past midline • smiles responsively	• lifts head up 45 degrees when on stomach	• looks at own hand	• makes baby sounds (cooing, squealing, gurgling)
3 months	• recognizes mother • smiles responsively	• supports head for a few seconds when held upright	• opens hands frequently	• responds to voices • laughs
4 months	• follows an object with eyes for 180 degrees • regards own hand • anticipates food on sight	• bears weight on legs • good neck control when pulled to sitting • lifts chest and supports self on elbows when pulled to sit	• brings hands together in midline (clasps hands) • grabs an object (such as a rattle) • reaches for objects	• turns head to sound
6 months	• reaches for familiar people	• rolls from stomach to back or back to stomach • sits with anterior support	• plays with hands by touching them together • sees small objects such as crumbs	• responds to name • babbles
9 months	• indicates wants/desires • waves bye-bye • stranger anxiety	• can sit without support • creeps or crawls on hands and knees	• looks for a toy when it falls from his/her hand • takes a toy in each hand • transfers a toy from one hand to the other	• responds to soft sounds such as whispers
12 months	• has separation anxiety • social interactions • intentional and goal-directed	• pulls self up to standing position • walks with support	• points at objects with index finger	• says at least one word • makes “ma-ma” or “da-da” sounds • locates sounds by turning head
15 months	• imitates activities • finds a nearby hidden object	• can take steps by himself • can get to a sitting position from a lying position	• can stack one cube on top of another	• able to say mama and dada to respective parents
18 months	• initiates interactions by calling to adult	• walks without help	• takes off own shoes • feeds self	• says at least 3 words
2 years	• does things to please others • parallel (imitative) play	• runs without falling	• looks at pictures in a book • imitates drawing a vertical line	• combines two different words

Age	• Concern
Birth to 3 months	• Failure to respond to environmental stimuli • Rolling over before 2 months (hypertonia) • Persistent fisting at 3 months
4-6 months	• Poor head control • Failure to smile • Failure to reach for objects by 5 months
6-12 months	• No baby sounds or babbling • Inability to localize sounds by 10 months
12-24 months	• Lack of consonant production • Hand dominance prior to 18 months (contralateral weakness) • No imitation of speech and activities by 16 months
Any age	• Loss of previously attained milestones



Reference: WHO Multicentre Growth Reference Study Group. WHO Motor Development Study: Windows of achievement for six gross motor development milestones. Acta Paediatrica Supplement 2006;450:86-95.

ANNEX 4: WEIGHT-BASED DOSING OF ANTIRETROVIRAL DRUGS

Ministry of Health - Lesotho
Weight-Based Dosing Charts for Antiretroviral Drugs (except neonates)

Once daily														
Medication	Strength	Medication dosages by weight band												
		3-5.9 kg		6-9.9 kg		10-13.9 kg		14-19.9 kg		20-24.9 kg		25-34.9 kg		>35 kg
ABC/3TC	120/60 mg	1		1.5		2		2.5		3		1		1
DTG[a]	10 mg	0.5		1.5		2		2.5		3		1		1
TDF/3TC		-		-		-		-		-		-		-
TDF/3TC/DTG		-		-		-		-		-		-		-
ATV or ATV/r[b]	200 mg	-		-		1		1		1		1		1
DRV[b]	150 mg	-		-		-		4		4		1		1
DRV[b]	600 mg	-		-		-		1		1		1		1
Ritonavir[c]	100 mg	-		-		1		1		1		1		1

Twice daily														
Medication	Strength	Medication dosages by weight band												
		3-5.9 kg		6-9.9 kg		10-13.9 kg		14-19.9 kg		20-24.9 kg		25-34.9 kg		>35 kg
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
LPV/r[d]	40/10 mg	2	2	3	3	4	4	5	5	6	6	3	3	2	2
LPV/r	100/25 mg	-	-	-	-	2	1	2	2	2	2				
LPV/r	200/50 mg	-	-	-	-	-	-	1	1	1	1	2	1	2	2
AZT/3TC	60/30 mg	1	1	1.5	1.5	2	2	2.5	2.5	3	3	1	1	1	1
DRV[b]	75 mg	-	-	-	-	-	-	5	5	5	5	1	1	1	1
Ritonavir[c]	50 mg							1	1	1	1	1	1	1	1
ETR	25 mg 100 mg	-	-	-	-	-	-	100 mg	100 mg	125 mg	125 mg	150 mg	150 mg	200 mg	200 mg

[a] DTG dispersible tablets and DTG film-coated tablets are not bioequivalent; 30 mg of DTG dispersible tablet corresponds to 50 mg of DTG film-coated tablets. DTG 50 mg film-coated tablets are preferred for children who have reached 20 kg (unless they cannot swallow tablets).

[b] Atazanavir and Darunavir should be taken with food. Darunavir once or twice daily dependent on PI mutations.

[c] Ritonavir at this dose is used to boost Atazanavir and Darunavir which are currently not co-formulated. Refer to TB section for use of ritonavir to boost LPV/r for TB treatment.

[d] LPV/r cannot be used for infants below 42wks corrected gestational age. LPV/r granules may be used then. LPV/r pellets should not be used until 3 months of age. Transition to LPV/r 100/25mg tablets is recommended as soon as the child can reliably swallow the tablets whole

ANNEX 5: TALKING ABOUT HIV TO CHILDREN LIVING WITH HIV

Below 6 Years: Most children will not understand HIV or be able to keep it private.

Suggestions for explaining HIV:

- You have a germ in your blood.
- The germ hurts the parts of your blood that keep you healthy.
- When the healthy parts are hurt, you get sick.
- The medicine will kill the germs so that your blood can become healthy again.
- If you take your medicine every day, you can stay healthy and stop the germ from making you sick.
- You can always talk to your family (indicate which members) and to your doctors and nurses about being sick and taking medicine.

Some questions that may come up with answers:

Q: How did I get this germ?
A: You were born with it. You have had it since you were a baby.
Q: Can you get rid of this germ?
A: The medicine can get rid of most of it so you can stay healthy, but we cannot get rid of all of it.
Q: When can I stop taking my medicine?
A: You have to take your medicine everyday so that you can stay healthy. Maybe one day doctors will be able to get rid of all the germs, but for now you have to take your medicine every day.

6-10 Years: Not all children seek the same amount of information.

Take your lead from the child as to how much information to provide. You can and should explain infection, immune depletion and the reason for taking drugs - without mentioning HIV in children where the child or the family is not ready for full disclosure. Keep information simple.

Suggestions for explaining HIV:

- You have come to the doctor because you have an illness. You may get sick some times.
- You have a germ (virus) that lives in your blood. Ask what the child knows about viruses and illness and correct misinformation.
- Viruses make you sick and the doctors' visits and medicines are needed to help you stay healthy.
- The virus (HIV) kills the cells in your blood that helps you stay healthy.
- The names of these cells are CD4 cells – the virus (HIV) kills CD4 cells.
- Without healthy CD4 cells, your body struggles to stay well and you get sick.
- The medicines kill the virus (HIV) so that your CD4 cells can be healthy, and they can help you stay healthy.
- If you stop taking your medicine, the virus (HIV) will get stronger again and kill your CD4 cells, then you will get sick again.
- We take blood so that we can measure if the virus is in your blood. Sometimes we check the number of CD4 cells, especially if you are sick.
- When the medicines are working well, there is no virus in the blood and lots of CD4 cells.

Explaining transmission:

- You got this virus when you were born. Your mother has the same virus. You got this virus from your mother.
- You cannot get this virus by being friends or hugging or touching. It is ok to play and go to school. If you hurt yourself, you must not let other people touch your blood.

Regarding privacy:

- We are explaining all this to you so that you can take better care of yourself.
- This is private information. Indicate the person the child can discuss this with.

Some questions that may come up with answers:

Q: Can you get rid of this virus?
A: The medicine can get rid of most of it, so you can stay healthy, but cannot get rid of all of it. Currently there is no cure.
Q: When can I stop taking medicine?
A: You have to take your medicine everyday so that you can stay healthy. Maybe one day doctors will be able to cure HIV, but for now you have to take your medicine everyday
Q: Am I going to die?
A: If you take medicines every day, you can stay healthy for a long time.
Q: How did my mom get HIV? – ALWAYS DEFER TO THE MOTHER

ANNEX 6: GRADING OF ARV TOXICITIES

Symptom (and diagnoses to consider, plus likely ARV responsible)	Grade 1	Grade 2	Grade 3	Grade 4
Abdominal pain +/- nausea	Mild and transient (<24 hr)	Food intake decreased (24 - 48 hrs)	Minimal food intake (> 48 hrs)	Patient too sick for outpatient treatment
•NRTI-associated pancreatitis or lactic acidosis • •NVP-related hepatitis	• No treatment needed, but have patient return early if pain worsens	• Encourage frequent small meals • Give Metoclopramide 10 mg every 12 hours prn • Check ALT and lipase and reassess in 2-3 days	• Consider stopping all ARVs* if lipase or amylase > 4 times normal, or ALT > 400 • Check lactate level	• Stop all ARVs and refer to hospital*
Vomiting	Once per day and/or lasting < 3 days	< 4 episodes per day and not dehydrated	Vomits > 3 times per day, and dehydrated	Dehydrated and too sick for outpatient treatment
•NRTI-associated pancreatitis or lactic acidosis • •NVP-related hepatitis	• Reassure patient, but have patient return early if worsens • Consider giving Metoclopramide 10 mg every 12 hours prn	• Give ORS • Encourage frequent small meals • Give Metoclopramide 10 mg every 12 hours prn • Check ALT and lipase and reassess in 2-3 days	• Give ORS • Give Metoclopramide 10 mg every 12 hours prn • Consider stopping all ARVs* until blood results are available • Check lactate level	• Stop all ARVs and refer to hospital* • Rehydrate with intravenous (IV) normal saline • Check lactate level
Psychiatric	Dizziness	Vivid dreams	Mood changes or persistent disturbing dreams	Acute psychosis, hallucinations, confused behaviour
•EFV •DTG	• Reassure patient	• Reassure patient • Reassess in a few weeks	• Give Chlorpromazine 50 mg at night as needed	• Stop all ARVs and refer to hospital* • Perform lumbar puncture to rule out meningitis • Modify ART as needed
Skin rash	Red, itchy	Maculo-papular rash or dry scales	Blisters or moist loss of skin	Rash involves mucous membranes or eyes +/- sloughing of skin

• Reassure, but have patient return early if worsens • Consider giving Chlorpheniramine 4 mg every 8 hours prn, if itch is significant	100 - 200	• Continue ARVs if no other problem • Recheck ALT again after 2 weeks • Check for drug-drug interactions	• Give Aqueous cream +/- 0.1% Betamethasone • Consider giving Chlorpheniramine 4 mg every 8 hours prn • Check ALT, and reassess in 2-3 days • Patient to return early if rash worse, or abdominal pain	200 - 400	• Close monitoring of ALT • Check for drug-drug interactions • Screen for OIs • Modify therapy as needed.	• Stop all ARVs*, check ALT, and refer to doctor • Give Chlorpheniramine 4 mg every 8 hours as needed • When symptoms have resolved, restart ARVs	> 400	• Close monitoring of ALT • Check for drug-drug interactions • Treat OIs • Modify therapy as needed.	• Stop all ARVs and refer to hospital • Restart ART after symptom resolution. Modify regimen as needed. • If related to CTX, use dapsone instead
	50 - 100	• Continue ARVs, but recheck ALT in 1 month		200 - 400	• Close monitoring of ALT • Check for drug-drug interactions • Screen for OIs • Modify therapy as needed.		> 400	• Close monitoring of ALT • Check for drug-drug interactions • Treat OIs • Modify therapy as needed.	
	Elevated ALT (in U/L)			***Anaemia (g/dL)***			***Neutropenia (low absolute neutrophil count)***		
	8 – 9.4	• Examine patient for cause (including active TB) • Continue ARVs • Recheck Hb in 2 weeks		6.5 – 6.9	• Examine patient, and refer to doctor for assessment • Recheck Hb weekly • Consider substitution for AZT		< 6.5	• Examine patient, and refer to doctor • Consider blood transfusion • Recommend substitution for AZT	
	AZT			AZT			AZT		
	1 – 1.5 x 10^9/L	• Continue ARVs • Recheck FBC plus differential in 2 weeks		7 – 7.9	• Examine patient for cause (including active TB) • Continue ARVs • Recheck Hb in 7 days		<0.5 x 10^9/L	• Examine patient for any signs of infection • Aggressively treat infections • Recommend substitution for AZT. Consider substitution for CTX.	
	Hyperlactatemia = *High Lactate (which may progress to lactic acidosis)*			0.75 - 1 x 10^9/L	• Examine patient for any signs of infection • Continue ARVs • Recheck FBC plus differential in 2 weeks		0.5 – 0.75 x 10^9/L	• Examine patient for any signs of infection • Recommend substitution for AZT • Recheck FBC plus differential weekly	
	Asymptomatic and/or lactate level < 2.5	• Continue ARVs • Recheck FBC plus differential in 2 weeks		Symptomatic hyperlactatemia (weight loss, fatigue, peripheral neuropathy, nausea, etc) Lactate between 2.5 – 3.5	• Examine patient to rule out new infection • Check urine for ketones (using dipstick) to rule out acidosis • Monitor lactate level weekly until lactate normalizes		Symptomatic hyperlactatemia with risk of progression to lactic acidosis (Think of lactic acidosis if symptoms of hyperlactatemia, plus abdominal pain, vomiting, shortness of breath, and ketones on urine dipstick.) Lactate between 3.6 – 4.9	• Examine patient to rule out new infection and/or acidosis • Check urine for ketones (using dipstick) to rule out acidosis • Monitor lactate level weekly until lactate normalizes • If lactate does not improve, stop all ARVs	
	NRTIs	• Continue ARVs					Lactic acidosis Lactate 5.0 or greater, or RR > 20 (even if lactate level is < 5.0)	• Admit to hospital • Rehydrate with intravenous fluid (normal saline) • Investigate for new infection (pneumonia, sepsis, TB, etc) • Consider giving i.v. Ceftriaxone for 3 days • Monitor lactate level frequently until normal	

ANNEX 7: HIV CHRONIC CARE/ART REFERRAL FORM

Referral From: .....

Referral to: .....

Name:.....Age:.....Sex.....

Physical Address:.....

.....

Date confirmed HIV positive: dd [ ] mm[ ] yy [ ]

Pre-ART information

HIV Chronic Care no: .....

Date Enrolled in Chronic Care: .....

CD4:..... *Date:* ..... *Clinical stage:* ..... *Indication:* .....

Date of last assessment: .....

Date Eligible and ready for ART:.....

ART information

ART Unique number:.....*Date started ART: dd[ ] mm [ ] yy [ ]*

COHORT: mm [ ] yy [ ]

At Start of ART: Weight: :.....*Functional status:* .....

Clinical Stage: [1] [2] [3] [4] (please tick) Indication: .....

ART Eligibility Reason: Clinical Only, CD4, TLC, Option B+, Test & Start, TB Coinfection (please tick)

CD4 Count: .....*Date done:* .....

Initial regimen: .....

Current regimen (During transfer): .....

TPT Start Date:..... *TPT Stop Date:*.....

Current MMD Qualification: 3 month or 6 month (please tick)

Laboratory Investigations:

Date	VL	Hb/FBC	ALT/LFT	CD4	Creatinine	HBsAg	TB-LAM	CrAG	Lipids

Comments:.....

.....

.....

Name of referring Doctor: .....Date.....

Signature:.....Phone no:.....email.....

ANNEX 8: ADHERENCE CONTRACT

ADHERENCE PLAN:

Please tick after each statement once it has been reviewed with the applicable individual(s):

1. I understand that antiretroviral drugs (ARVs) against HIV stop the virus from multiplying, leading to a better quality of life, although they are not a cure for HIV. HIV is a lifelong infection and ARVs are a lifelong treatment. Therefore, even if I/my child feels better after starting the ARVs, I understand that if the ARVs are stopped, sickness will resume.

[ ] Primary Caretaker [ ] Patient (if disclosed to) [ ] Caretaker #2, if applicable [ ] Caretaker #3, if applicable

2. I understand that taking all of the ARV medications together as prescribed is critical to treatment success, and that even missing 1 dose may result in permanent drug failure and sickness. I will not miss any doses. If I do miss doses, I will ask the clinic for help since it is so important.

[ ] Primary Caretaker [ ] Patient (if disclosed to) [ ] Caretaker #2, if applicable [ ] Caretaker #3, if applicable

3. I understand that I/my child cannot miss any doses. Therefore, I will return on time for each clinic appointment for ARV refills. If I run out of ARVs in advance of my/my child's appointment due to an accident/spill, then I will return to the clinic immediately for a refill on a clinic day.

[ ] Primary Caretaker [ ] Patient (if disclosed to) [ ] Caretaker #2, if applicable [ ] Caretaker #3, if applicable

4. I understand that since all the ARVs must be taken together to work, I will not stop any one of the medications without consultation with a doctor. I will not give away or sell the ARVs to anyone since this will be hurtful to me/my child and to the other person. I understand that if I stop one or more ARVs without the advice of a doctor, I may seriously hurt my/my child's future treatment options because of HIV resistance. The first ARV regimen is the most important/effective. If it fails, the options are limited.

[ ] Primary Caretaker [ ] Patient (if disclosed to) [ ] Caretaker #2, if applicable [ ] Caretaker #3, if applicable

5. I understand that the ARVs must be taken at the same time of day every day. However, should I forget to administer/take a dose, I should administer/take it as soon as I remember. However, if it is 6 hours past the time that the dose was due (for twice daily ARVs) or 12 hours past the time the dose was due (for once daily ARVs), then skip the missed dose and continue your regular dosing schedule. Do not take a double dose to make up for a missed one.

[ ] Primary Caretaker [ ] Patient (if disclosed to) [ ] Caretaker #2, if applicable [ ] Caretaker #3, if applicable

6. I understand that all medications may have associated side effects. These may include temporary weakness, rash, tiredness or lack of blood, loose stools, tingling sensation in the feet, vivid dreams, or others. I will come to the clinic if any side effects occur and will not stop any medications unless directed to do so by a doctor.

[ ] Primary Caretaker [ ] Patient (if disclosed to) [ ] Caretaker #2, if applicable [ ] Caretaker #3, if applicable

7. If I/my child vomits within 30 minutes of taking the medication, or if I can see the ARVs in the vomit itself, then I will repeat the dose.
[ ] Primary Caretaker [ ] Patient (if disclosed to) [ ] Caretaker #2, if applicable [ ] Caretaker #3, if applicable

8. I will bring my/my child's ARVs and/or pill box to every visit.

[ ] Primary Caretaker [ ] Patient (if disclosed to) [ ] Caretaker #2, if applicable [ ] Caretaker #3, if applicable

9. For caretaker(s): I am fully committed to making certain that the child I am caring for receives his/her ARVs. If I can no longer care for the child, I will let the clinic counsellor know in as far advance as possible, so that another adult may be counselled to do so.
[ ] Primary Caretaker [ ] Caretaker #2, if applicable [ ] Caretaker #3, if applicable

10. For caretaker(s) of children only: I understand that I should encourage my child to be responsible for taking their ARVs; however, I understand that children must be directly monitored while swallowing the ARVs and I will closely supervise them successfully taking them.

[ ] Primary Caretaker [ ] Caretaker #2, if applicable [ ] Caretaker #3, if applicable

For all patients if disclosed to: I understand that since ARVs are not a cure, it is still possible for me to pass on the virus to someone else through my blood or through sexual intercourse. I understand how to avoid passing the virus to others, and I understand that it is possible for me to contract another strain of HIV, such that it is also in my best interest to protect myself from further infection.

[ ] Patient (if disclosed to)

12. For all female patients if disclosed to: I understand that it is still possible for me to transmit HIV mother-to-child during pregnancy, delivery, or breastfeeding even while on ARVs, although this risk is lower than among HIV-positive women not on ARVs. Since some ARVs may harm the developing fetes, I will inform my doctor if I am or plan to become sexually active or pregnant.
[ ] Patient (if disclosed to)

ADHERENCE COMMITTMENT:

By signing below, I commit to adhering to each and every dose of ARV medication for the rest of my/the child I care for's life:

¬¬¬¬¬¬¬¬¬¬¬¬

_____ _____ _____

Primary Caretaker Name Primary Caretaker Signature Date

¬¬¬¬¬¬¬¬¬¬¬¬

_____ _____ _____

Patient's Name (if disclosed to) Patient's Signature Date

¬¬¬¬¬¬¬¬¬¬¬¬

_____ _____ _____

Caretaker #2 Name Caretaker #2 Signature Date
(if applicable; required, if High Risk)

¬¬¬¬¬¬¬¬¬¬¬¬_____ _____ _____

Caretaker #3 Name Caretaker #3 Signature Date
(if applicable)

_____ _____ _____

Counsellor Name Counsellor Signature Date

TUMELLANO KAPA BOITLAMO BA HO NOA LITLHARE KA NEPO

Letsatsi:_____ Nomoro ea Faele:_____

U koptjoa ho ts'oaea ka mor'a hoba polelo ka 'ngoe e hlahlojoe le motho /batho ba lokelang.

1. Kea utloisisa hore litlhare tsa li ARV khahlanong le HIV, li thibela kokoana-hloko ho ikatisa, e leng ho lebisang bophelong ba boleng bo betere, leha e se pheko ea HIV. HIV ke ts'oaetso ea bophelo bohle 'me li ARV ke kalafo ea bophelo bohle. Kahoo, leha eba 'na kapa ngoan'aka a ikutloa a le betere kamor'a ho qala li ARV, kea utloisisa hore ha li ARV li khaotsoa, bokuli botla tsoela-pele hape.
[ ] Mohlokomeli oa mathomo [ ] Mokuli (haeba a se a boleletsoe boemo)
[ ] Mohlokomeli oa bobeli, haeba a le teng [ ] Mohlokomeli oa boraro haeba a le teng.

2. Kea utloisisa hore ho noa li ARV hammoho, joalo ka ha ho boletsoe, ho bohlokoa bakeng sa kalafo e atlehileng, 'me le hore leha ele ho fosa ho noa le se le seng sa litlhare ho ka baka ho hlolehela ruri hoa litlhare le bokuli. Nkeke ka fosa ho noa litlhare leha e le ha 'ngoe. Ha nka fosa, ke tla kopa cliniki hore e nthuse ka ha hoo ho le bohlokoa.
[ ] Mohlokomeli oa mathomo [ ] Mokuli (haeba a se a boleletsoe boemo)
[ ] Mohlokomeli oa bobeli, haeba a le teng [ ] Mohlokomeli oa boraro haeba a le teng.

3. Kea utloisisa hore 'na kapa ngoana'ka a keke a fosa ho noa litlhare, kahoo ke tla khutlela cliniking ka nako bakeng sa matsatsi ao ke a behetsoeng ho lata litlhare. Haeba litlhare li mphella pele ho nako e behiloeng ka baka la tsietsi kapa ho qhalana, ke tla khutlela cliniking hang-hang, ka letsatsi la cliniki la ts'ebetso.
[ ] Mohlokomeli oa mathomo [ ] Mokuli (haeba a se a boleletsoe boemo)
[ ] Mohlokomeli oa bobeli,haeba a le teng [ ] Mohlokomeli oa boraro haeba a le teng.

4. Kea utloisisa hore ka ha li ARV li lokela ho nooa kaofela, hammoho hore li tle li sebetse, nke ke ka khaotsa ho noa kapa ho noesa ngoana setlhare sefe kapa sefe ntle le ho botsa ngaka. Nke ke ka fana kapa ka rekisa li ARV ho mang kapa mang, ka ha hoo ho ba kotsi ho 'na kapa ngoana'ka le ho motho eo e mong. Kea utloisisa hore ha ke khaotsa ho noa kapa ho noesa ngoana'ka setlhare se le seng, kapa ho feta, ntle le boeletsi ba ngaka, nka baka kotsi kalafong ea kamoso ea ka kapa ea ngoana'ka, ka lebaka la manganga a HIV. Mokhahlelo oa pele oa kalafo ke 'ona o bohlokoahali. Ha o hloleha, menyetla ea kalafo e se e fokola.
[ ] Mohlokomeli oa mathomo [ ] Mokuli (haeba a se a boleletsoe boemo)
[ ] Mohlokomeli oa bobeli, haeba a le teng [ ] Mohlokomeli oa boraro haeba a le teng.

5. Kea utloisisa hore li ARV li lokela ho nooa ka nako e le 'ngoe letsatsi le letsatsi. Leha ho le joalo, ha nka lebala ho noa kapa ho noesa ngoana litlhare, ke lokela ho noa kapa ho mo noesa lithlare tseo hang ha ke hopola. Empa haeba ke hopola kamor`a lihora tse ts'eletseng (bakeng sa litlhare tse nooang habeli ka letsatsi), ke tla tlola litlhare tseo tse fetiloeng ke nako, ke tsoele-pele ka nako ea mehla. Nke ke ka noa kapa ka noesa ngoana litlhare habeli ele ho lefa tse fetiloeng ke nako kapa tseo nako ea tsona e fositsoeng.
[ ] Mohlokomeli oa mathomo [ ] Mokuli (haeba a se a boleletsoe boemo)
[ ] Mohlokomeli oa bobeli, haeba a le teng [ ] Mohlokomeli oa boraro haeba a le teng.

6. Kea utloisisa hore litlhare tsohle li ka ba le litla-morao. Litla-morao tsena li ka kenyeletsa ho fokolloa ke matla ha nakoana, lekhopho, mokhathala kapa khaello ea mali, ho choachoasela ha maoto, litoro tse matla, le tse ling. Ke tla tla cliniking haeba se seng sa litla-morao se iponahatsa, 'me nke ke ka khaotsa ho noa kapa ho noesa ngoana litlhare, ntle le ha ngaka e bolela joalo.
[ ] Mohlokomeli oa mathomo [ ] Mokuli (haeba a se a boleletsoe boemo)

[ ] Mohlokomeli oa bobeli, haeba a le teng [ ] Mohlokomeli oa boraro haeba a le teng.

7. Haeba 'na kapa ngoana'ka a hlatsa nakong ea metsotso e mashome a mararo a ho noa litlhare, kapa haeba nka ka bona li ARV ka bo tsona mahlatseng, ke tla pheta ho noa kapa ho noesa ngoana litlhare.
[ ] Mohlokomeli oa mathomo [ ] Mokuli (haeba a se a boleletsoe boemo)
[ ] Mohlokomeli oa bobeli, haeba a le teng [ ] Mohlokomeli oa boraro haeba a le teng.

8. Ke tla tla le lebokose la ka kapa la ngoana'ka la litlhare nako eohle ha ke khutlela cliniking.
[ ] Mohlokomeli oa mathomo [ ] Mokuli (haeba a se a boleletsoe boemo)
[ ] Mohlokomeli oa bobeli, haeba a le teng [ ] Mohlokomeli oa boraro haeba a le teng.

9. Bakeng sa bahlokomeli: ke itlama ka botlalo ho netefatseng hore ngoana eo ke mo hlokomelang o fumana li ARV. Haeba ke se ke sitoa ho tsoela-pele ho mo hlokomela, ke tla bolella mohlabolli oa cliniki kapele kamoo ho ka khonahalang, ele hore motho e mong e moholo a tle a hlabolloe ho etsa joalo (ho hlokomela ngoana).
[ ] Mohlokomeli oa mathomo [ ] Mokuli (haeba a se a boleletsoe boemo)
[ ] Mohlokomeli oa bobeli, haeba a le teng [ ] Mohlokomeli oa boraro haeba a le teng.

10. Bakeng sa bahlokomeli ba bana feela: kea utloisisa hore ke lokela ho khothaletsa ngoana'ka ho ba le boikarabello ba ho noa li ARV; leha ho le joalo, kea utloisisa hore bana ba lokela ho supisoa ka kotlolloho ha ba e-noa kapa ba koenya li ARV, 'me ke tla ba tataisa ka hloko ho li noeng.
[ ] Mohlokomeli oa mathomo [ ] Mokuli (haeba a se a boleletsoe boemo)
[ ] Mohlokomeli oa bobeli,haeba a le teng [ ] Mohlokomeli oa boraro haeba a le teng.

11. Bakeng sa bakuli bohle, haeba ba boleletsoe boemo ba bona: kea utloisisa hore kaha li ARV hase pheko, ho ntse ho khonahala hore nka fetisetsa kokoana-hloko ho ba bang, 'me kea utloisisa hore hoa khonahala hore nka fumana mofuta o mong oa HIV, hoo ho molemong oa ka ho its'ireletsa khahlanong le ts'oaetso e `ngoe. [ ] Mokuli (haeba a boleletsoe boemo ba hae).

E tekennoe ke: Mohlokomeli oa mathomo: _____
Mohlokomeli oa bobeli kapa mots'ehetsi: _____
Mokuli (haeba a le kaholimo ho lilemo tse 12): _____

ANNEX 9: HOW TO ANALYSE INDICATORS AND IDENTIFY PROBLEMS

Calculating and analysing the indicators listed in the chart below will help to monitor chronic HIV care and ART in your district.

Indicators related to ART at the district level

Indicator	*Time frame for cohort*	*Which number or formula for calculating (numerator / denominator)*[a]	*Sources of data*
1. Indicators related to patients accessing HIV care and ART			
***1a**. Number enrolled in HIV care*	*Last quarter*	*- New in last month* *- Cumulative number of persons enrolled in HIV care*	*Quarterly report form—Table 1*
***1b**. Number started on ART*	*Last quarter*	*- New in last month* *- Cumulative number of persons ever started on ART at this facility*	*Quarterly report form—Table 2*
***1b**. Number currently on ART*	*Cross-sectional—at end of last quarter*	*Total and disaggregated by sex, adult /child*	*Quarterly report form—Table 4*
***1c**. Number of persons who are enrolled and eligible for ART but have not been started on ART*	*Cross-sectional—at end of last quarter*	*Total number enrolled and eligible but not on ART (S1 + S2)*	*Quarterly report form—Table 1*
***1d**. Proportion of those eligible for ART in clinic who have been started on ART*	*Cross-sectional—at end of last quarter*	*Cumulative number of persons ever started on ART at this facility* *----------* *Total number enrolled and eligible but not on ART (S1 + S2) plus cumulative number of persons ever started on ART at this facility*	*Quarterly report form*
***1e**. Proportion of people with advanced HIV infection receiving ARV combination therapy (UNGASS core indicator)*	*Cross-sectional*	*Number currently on ART* *----------* *Denominator is an estimate based on HIV prevalence and expected proportion with AIDS (not from register data)*	*Quarterly report form* *----------* *Estimate, HIV prevalence data*
2. Indicators related to success of ART			
***2a.** Core indicator 9* *Survival at 6, 12, 24, 36 months etc after initiation of ART*	*6 months on ART, 12 months on ART, 24 months, 36 months etc on ART*	*H + I + J* *----------* *N*	*Cohort analysis form* *----------* *Cohort analysis form*
***2b.** Core indicator 8* *Continuation of first-line ARV regimen at 6, 12 and 24 months after initiating treatment*	*6 months on ART, 12 months on ART, 24 months on ART*	*6 months on ART, 12 months on ART, 24 months, 36 months etc on ART* *----------* *Persons who started 1st-line ART for the first time during the time period under consideration.*	*Cohort analysis form* *----------* *Cohort analysis form*
***2c.** Proportion of people on ART at 6, 12 and 24 months whose functional status is working*	*6 months on ART, 12 months on ART, 24 months, 36 months etc on ART*	*Working* *----------* *Working + Ambulatory + Bedridden*	*Cohort analysis form*

Indicate	*Time frame for cohort*	*Which number or formula for calculating (numerator / denominator) a*	*Sources of data*
2c. *Proportion of people on ART at 6, 12 and 24 months whose functional status is working*	*6 months on ART, 12 months on ART, 24 months, 36 months etc on ART*	*Working* *----------* *Working + Ambulatory + Bedridden*	*Cohort analysis form*
2d. *Median CD4 and increase at 6 and at 12 months on ART compared to baseline.*			*Cohort analysis form*
3. HIV drug resistance early warning indicators			
3a. Proportion of patients who started ART 6 or 12 months ago who picked up ARV medications 6/6 or 12/12 months.	*Cross-sectional—at end of last quarter*	*Persons who started ART 6 or 12 months ago who picked up ARV medications 6/6 or 12/12 months.* *----------* *Persons who started ART 6 or 12 months ago and are still prescribed ART at the end of the time period.*	*Cohort analysis form*
3b. Proportion of patients with (good) adherence to ART			*Patient encounter form*

Other indicators for facility-level programme monitoring

Indicator	Rationale
a. Number on cotrimoxazole, fluconazole, INH prophylaxis at end of month	Drug supply orders
b. Distribution of entry points of patients enrolled in HIV care	Identifies linkages between programmes and activities
c. Distribution of reasons for regimen substitution, switching, termination, interruption, and poor adherence	Helps clinical team to identify and respond to poor adherence; assists with quality assurance related to regimen substitutions, switches and interruptions.
d. Distribution of patients not yet on ART by clinical stage	May help estimate resources to care for patients, drug supply for OI prophylaxis and treatment.
e. Percentage of patients referred	Monitoring referral rates may enable facilities to manage referral systems more efficiently
f. Side effects, OIs, other problems	Facilitates individual patient management and allows review of side effects and new OIs

Calculating indicators or other aggregated data

Agreed minimum essential data elements	***What happens to the data***	***Indicators or other aggregated data***
At baseline, 6, 12 months then yearly; disaggregated by sex and child/adult: ***On ART and:*** ***ALIVE*** ***DEAD*** ***LOST/DROP/Transfer out*** ***Current regimen*** ***Original 1st-line*** ***Substituted to alternative 1st-line*** ***2nd-line or higher*** ***CD4 test results*** ***Functional status*** ***Regimen collected in last quarter***	*Transfer to ART register then to Cohort Analysis Report*	***Based on cohort analysis form, at 6, 12 months then yearly and compared to baseline:*** ***Indicators related to success of ART*** ***Proportion alive and on ART/Mortality on ART*** ***Proportion still on a first-line regimen*** ***Proportion working, ambulatory, bedridden*** ***Median or mean CD4 counts (optional)*** ***HIV drug resistance early warning indicators:*** ***Proportion switched to a second-line (or higher) regimen*** ***Proportion collected ARV drugs 6/6 or 12/12 months***
B. ***When registered for HIV care*** ***When medically eligible for ART*** ***When medically eligible and ready for ART*** ***When ART started*** ***Dead before ART*** ***Lost or Transfer out before ART***	*Transfer to pre-ART or ART register then to Quarterly Report*	***Indicators related to patients accessing HIV care and ART:*** ***Disaggregated by adult, child, sex, pregnancy status:*** ***Number enrolled in HIV care: new and cumulative ever at the facility*** ***Number started on ART: new and cumulative ever started at the facility*** ***Number currently on ART at the facility*** ***Not disaggregated:*** ***Number eligible for ART but not yet started***
C. ***Entry point*** ***Why eligible for ART*** ***Reasons for:*** ***Substitution within first-line*** ***Switch/Substitution to or within second-line*** ***Stop ART*** ***Number and weeks of each ART treatment interruption*** ***Pregnancy status*** ***Start/stop dates of prophylaxis:*** ***Co-trimoxazole*** ***Fluconazole*** ***INH*** ***TB treatment*** ***Adherence on ART***	***Transferred to Pre-ART or ART Register but used only by clinical team /district ART coordinator not transferred to quarterly report or cohort analysis***	***Indicators for patient and programme management at the facility/district level:*** ***Distribution of entry points in patients enrolled in HIV care*** ***Why eligible for ART: clinical only, CD4 or TLC*** ***Distribution of patients not yet on ART by clinical stage*** ***Distribution of reasons for substitute, switch, stop to investigate problems; whether substitutions and switches are appropriate (use in context reviewing medical officer log)*** ***ART treatment interruptions:*** ***Number/Proportion of patients*** ***Number weeks*** ***Proportion of pregnant patients linked with PMTCT interventions (or simply use to generate lists to assure linkage)*** ***Number on co-trimoxazole, fluconazole, INH prophylaxis at end of quarter (for ordering prophylaxis drugs)*** ***Number/Proportion of patients on both TB treatment and ART*** ***% patients with good adherence to ART***

Agreed minimum essential data elements	*What happens to the data*	*Indicators or other aggregated data*
D. *Date of each encounter* *Weight (each visit; % wt gain or loss)* *Adherence on CTX* *Adherence on INH* *Potential side effects* *New OI, other problems* *TB status (other than treatment or prophylaxis)* *Referred or consulted with MD* *Number inpatient days* *If poor adherence on ART, reasons (coded)*	*Patient Card only. Not transferred to register*	*Indicators for patient management at the facility level or special studies:* *% patients referred to MD* *Common side effects, OI, other problems:* *Patients with special problems* *Identify patients for review at clinical team meetings* *# or proportion patients hospitalized; number days* *Reasons for poor adherence*

National core indicators

These are used both for individual patient management and for medical officer or clinical mentor review on site visits. For potentially serious side effects which result in a consultation or referral, medical officer needs to put in log and do further adverse even reporting.

Tabulations for special studies

ANNEX 10: REFERENCE VALUES FOR WEIGHT-FOR-HEIGHT AND WEIGHT-FOR-LENGTH

Weight-for-Height Reference Table (WHO)

Boys weight (kg)						Girls weight (kg)				
-4SD	-3SD	-2SD	-1SD	Median	Length (cm)*	Median	-1SD	-2SD	-3SD	-4SD
1,7	1,9	2,0	2,2	2,4	**45,0**	2,5	2,3	2,1	1,9	1,7
1,8	1,9	2,1	2,3	2,5	**45,5**	2,5	2,3	2,1	2,0	1,8
1,8	2,0	2,2	2,4	2,6	**46,0**	2,6	2,4	2,2	2,0	1,9
1,9	2,1	2,3	2,5	2,7	**46,5**	2,7	2,5	2,3	2,1	1,9
2,0	2,1	2,3	2,5	2,8	**47,0**	2,8	2,6	2,4	2,2	2,0
2,0	2,2	2,4	2,6	2,9	**47,5**	2,9	2,6	2,4	2,2	2,0
2,1	2,3	2,5	2,7	2,9	**48,0**	3,0	2,7	2,5	2,3	2,1
2,1	2,3	2,6	2,8	3,0	**48,5**	3,1	2,8	2,6	2,4	2,2
2,2	2,4	2,6	2,9	3,1	**49,0**	3,2	2,9	2,6	2,4	2,2
2,3	2,5	2,7	3,0	3,2	**49,5**	3,3	3,0	2,7	2,5	2,3
2,4	2,6	2,8	3,0	3,3	**50,0**	3,4	3,1	2,8	2,6	2,4
2,4	2,7	2,9	3,1	3,4	**50,5**	3,5	3,2	2,9	2,7	2,4
2,5	2,7	3,0	3,2	3,5	**51,0**	3,6	3,3	3,0	2,8	2,5
2,6	2,8	3,1	3,3	3,6	**51,5**	3,7	3,4	3,1	2,8	2,6
2,7	2,9	3,2	3,5	3,8	**52,0**	3,8	3,5	3,2	2,9	2,7
2,8	3,0	3,3	3,6	3,9	**52,5**	3,9	3,6	3,3	3,0	2,8
2,9	3,1	3,4	3,7	4,0	**53,0**	4,0	3,7	3,4	3,1	2,8
3,0	3,2	3,5	3,8	4,1	**53,5**	4,2	3,8	3,5	3,2	2,9
3,1	3,3	3,6	3,9	4,3	**54,0**	4,3	3,9	3,6	3,3	3,0
3,2	3,4	3,7	4,0	4,4	**54,5**	4,4	4,0	3,7	3,4	3,1
3,3	3,6	3,8	4,2	4,5	**55,0**	4,6	4,2	3,8	3,5	3,2
3,4	3,7	4,0	4,3	4,7	**55,5**	4,7	4,3	3,9	3,6	3,3
3,5	3,8	4,1	4,4	4,8	**56,0**	4,8	4,4	4,0	3,7	3,4
3,6	3,9	4,2	4,6	5,0	**56,5**	5,0	4,5	4,2	3,8	3,5
3,7	4,0	4,3	4,7	5,1	**57,0**	5,1	4,6	4,3	3,9	3,6
3,8	4,1	4,5	4,9	5,3	**57,5**	5,2	4,8	4,4	4,0	3,7
3,9	4,3	4,6	5,0	5,4	**58,0**	5,4	4,9	4,5	4,1	3,8
4,0	4,4	4,7	5,1	5,6	**58,5**	5,5	5,0	4,6	4,2	3,9
4,1	4,5	4,8	5,3	5,7	**59,0**	5,6	5,1	4,7	4,3	3,9
4,2	4,6	5,0	5,4	5,9	**59,5**	5,7	5,3	4,8	4,4	4,0
4,3	4,7	5,1	5,5	6,0	**60,0**	5,9	5,4	4,9	4,5	4,1
4,4	4,8	5,2	5,6	6,1	**60,5**	6,0	5,5	5,0	4,6	4,2
4,5	4,9	5,3	5,8	6,3	**61,0**	6,1	5,6	5,1	4,7	4,3
4,6	5,0	5,4	5,9	6,4	**61,5**	6,3	5,7	5,2	4,8	4,4
4,7	5,1	5,6	6,0	6,5	**62,0**	6,4	5,8	5,3	4,9	4,5
4,8	5,2	5,7	6,1	6,7	**62,5**	6,5	5,9	5,4	5,0	4,6
4,9	5,3	5,8	6,2	6,8	**63,0**	6,6	6,0	5,5	5,1	4,7
5,0	5,4	5,9	6,4	6,9	**63,5**	6,7	6,2	5,6	5,2	4,7
5,1	5,5	6,0	6,5	7,0	**64,0**	6,9	6,3	5,7	5,3	4,8
5,2	5,6	6,1	6,6	7,1	**64,5**	7,0	6,4	5,8	5,4	4,9
5,3	5,7	6,2	6,7	7,3	**65,0**	7,1	6,5	5,9	5,5	5,0
5,4	5,8	6,3	6,8	7,4	**65,5**	7,2	6,6	6,0	5,5	5,1
5,5	5,9	6,4	6,9	7,5	**66,0**	7,3	6,7	6,1	5,6	5,1
5,5	6,0	6,5	7,0	7,6	**66,5**	7,4	6,8	6,2	5,7	5,2
5,6	6,1	6,6	7,1	7,7	**67,0**	7,5	6,9	6,3	5,8	5,3
5,7	6,2	6,7	7,2	7,9	**67,5**	7,6	7,0	6,4	5,9	5,4
5,8	6,3	6,8	7,3	8,0	**68,0**	7,7	7,1	6,5	6,0	5,5
5,9	6,4	6,9	7,5	8,1	**68,5**	7,9	7,2	6,6	6,1	5,5
6,0	6,5	7,0	7,6	8,2	**69,0**	8,0	7,3	6,7	6,1	5,6
6,0	6,6	7,1	7,7	8,3	**69,5**	8,1	7,4	6,8	6,2	5,7
6,1	6,6	7,2	7,8	8,4	**70,0**	8,2	7,5	6,9	6,3	5,8
6,2	6,7	7,3	7,9	8,5	**70,5**	8,3	7,6	6,9	6,4	5,8
6,3	6,8	7,4	8,0	8,6	**71,0**	8,4	7,7	7,0	6,5	5,9
6,4	6,9	7,5	8,1	8,8	**71,5**	8,5	7,7	7,1	6,5	6,0
6,4	7,0	7,6	8,2	8,9	**72,0**	8,6	7,8	7,2	6,6	6,0
6,5	7,1	7,6	8,3	9,0	**72,5**	8,7	7,9	7,3	6,7	6,1
6,6	7,2	7,7	8,4	9,1	**73,0**	8,8	8,0	7,4	6,8	6,2
6,7	7,2	7,8	8,5	9,2	**73,5**	8,9	8,1	7,4	6,9	6,3
6,7	7,3	7,9	8,6	9,3	**74,0**	9,0	8,2	7,5	6,9	6,3
6,8	7,4	8,0	8,7	9,4	**74,5**	9,1	8,3	7,6	7,0	6,4
6,9	7,5	8,1	8,8	9,5	**75,0**	9,1	8,4	7,7	7,1	6,5
7,0	7,6	8,2	8,9	9,6	**75,5**	9,2	8,5	7,8	7,1	6,5
7,0	7,6	8,3	8,9	9,7	**76,0**	9,3	8,5	7,8	7,2	6,6
7,1	7,7	8,3	9,0	9,8	**76,5**	9,4	8,6	7,9	7,3	6,7
7,2	7,8	8,4	9,1	9,9	**77,0**	9,5	8,7	8,0	7,4	6,7
7,2	7,9	8,5	9,2	10,0	**77,5**	9,6	8,8	8,1	7,4	6,8
7,3	7,9	8,6	9,3	10,1	**78,0**	9,7	8,9	8,2	7,5	6,9
7,4	8,0	8,7	9,4	10,2	**78,5**	9,8	9,0	8,2	7,6	6,9
7,4	8,1	8,7	9,5	10,3	**79,0**	9,9	9,1	8,3	7,7	7,0
7,5	8,2	8,8	9,5	10,4	**79,5**	10,0	9,1	8,4	7,7	7,1
7,6	8,2	8,9	9,6	10,4	**80,0**	10,1	9,2	8,5	7,8	7,1
7,6	8,3	9,0	9,7	10,5	**80,5**	10,2	9,3	8,6	7,9	7,2
7,7	8,4	9,1	9,8	10,6	**81,0**	10,3	9,4	8,7	8,0	7,3
7,8	8,5	9,1	9,9	10,7	**81,5**	10,4	9,5	8,8	8,1	7,4
7,9	8,5	9,2	10,0	10,8	**82,0**	10,5	9,6	8,8	8,2	7,5
7,9	8,6	9,3	10,1	10,9	**82,5**	10,6	9,7	8,9	8,2	7,5
8,0	8,7	9,4	10,2	11,0	**83,0**	10,7	9,8	9,0	8,3	7,6
8,1	8,8	9,5	10,3	11,2	**83,5**	10,9	9,9	9,1	8,4	7,7
8,2	8,9	9,6	10,4	11,3	**84,0**	11,0	10,1	9,2	8,5	7,8
8,3	9,0	9,7	10,5	11,4	**84,5**	11,1	10,2	9,3	8,6	7,9

Weight-for-Height Reference Table (WHO)

Boys weight (kg)						Girls weight (kg)				
-4SD	-3SD	-2SD	-1SD	Median	Height (cm)*	Median	-1SD	-2SD	-3SD	-4SD
8,4	9,1	9,8	10,6	11,5	**85,0**	11,2	10,3	9,4	8,7	8,0
8,5	9,2	9,9	10,7	11,6	**85,5**	11,3	10,4	9,6	8,8	8,0
8,6	9,3	10,0	10,8	11,7	**86,0**	11,5	10,5	9,7	8,9	8,1
8,7	9,4	10,1	11,0	11,9	**86,5**	11,6	10,6	9,8	9,0	8,2
8,9	9,6	10,4	11,2	12,2	**87,0**	11,9	10,9	10,0	9,2	8,4
9,0	9,7	10,5	11,3	12,3	**87,5**	12,0	11,0	10,1	9,3	8,5
9,1	9,8	10,6	11,5	12,4	**88,0**	12,1	11,1	10,2	9,4	8,6
9,2	9,9	10,7	11,6	12,5	**88,5**	12,3	11,2	10,3	9,5	8,7
9,3	10,0	10,8	11,7	12,7	**89,0**	12,4	11,4	10,4	9,6	8,8
9,3	10,1	10,9	11,8	12,8	**89,5**	12,5	11,5	10,5	9,7	8,9
9,4	10,2	11,0	11,9	12,9	**90,0**	12,6	11,6	10,6	9,8	9,0
9,5	10,3	11,1	12,0	13,0	**90,5**	12,8	11,7	10,7	9,9	9,1
9,6	10,4	11,2	12,1	13,1	**91,0**	12,9	11,8	10,9	10,0	9,1
9,7	10,5	11,3	12,2	13,2	**91,5**	13,0	11,9	11,0	10,1	9,2
9,8	10,6	11,4	12,3	13,4	**92,0**	13,1	12,0	11,1	10,2	9,3
9,9	10,7	11,5	12,4	13,5	**92,5**	13,3	12,1	11,2	10,3	9,4
9,9	10,8	11,6	12,6	13,6	**93,0**	13,4	12,3	11,3	10,4	9,5
10,0	10,9	11,7	12,7	13,7	**93,5**	13,5	12,4	11,4	10,5	9,6
10,1	11,0	11,8	12,8	13,8	**94,0**	13,6	12,5	11,5	10,6	9,7
10,2	11,1	11,9	12,9	13,9	**94,5**	13,8	12,6	11,6	10,7	9,7
10,3	11,1	12,0	13,0	14,1	**95,0**	13,9	12,7	11,7	10,8	9,8
10,4	11,2	12,1	13,1	14,2	**95,5**	14,0	12,8	11,8	10,8	9,9
10,4	11,3	12,2	13,2	14,3	**96,0**	14,1	12,9	11,9	10,9	10,0
10,5	11,4	12,3	13,3	14,4	**96,5**	14,3	13,1	12,0	11,0	10,1
10,6	11,5	12,4	13,4	14,6	**97,0**	14,4	13,2	12,1	11,1	10,2
10,7	11,6	12,5	13,6	14,7	**97,5**	14,5	13,3	12,2	11,2	10,3
10,8	11,7	12,6	13,7	14,8	**98,0**	14,7	13,4	12,3	11,3	10,4
10,9	11,8	12,8	13,8	14,9	**98,5**	14,8	13,5	12,4	11,4	10,4
11,0	11,9	12,9	13,9	15,1	**99,0**	14,9	13,7	12,5	11,5	10,5
11,1	12,0	13,0	14,0	15,2	**99,5**	15,1	13,8	12,7	11,6	10,6
11,2	12,1	13,1	14,2	15,4	**100,0**	15,2	13,9	12,8	11,7	10,7
11,2	12,2	13,2	14,3	15,5	**100,5**	15,4	14,1	12,9	11,9	10,8
11,3	12,3	13,3	14,4	15,6	**101,0**	15,5	14,2	13,0	12,0	10,9
11,4	12,4	13,4	14,5	15,8	**101,5**	15,7	14,3	13,1	12,1	11,0
11,5	12,5	13,6	14,7	15,9	**102,0**	15,8	14,5	13,3	12,2	11,1
11,6	12,6	13,7	14,8	16,1	**102,5**	16,0	14,6	13,4	12,3	11,2
11,7	12,8	13,8	14,9	16,2	**103,0**	16,1	14,7	13,5	12,4	11,3
11,8	12,9	13,9	15,1	16,4	**103,5**	16,3	14,9	13,6	12,5	11,4
11,9	13,0	14,0	15,2	16,5	**104,0**	16,4	15,0	13,8	12,7	11,5
12,0	13,1	14,2	15,4	16,7	**104,5**	16,6	15,2	13,9	12,8	11,6
12,1	13,2	14,3	15,5	16,8	**105,0**	16,8	15,3	14,0	12,9	11,8
12,2	13,3	14,4	15,6	17,0	**105,5**	17,0	15,5	14,2	13,0	11,9
12,3	13,4	14,5	15,8	17,2	**106,0**	17,1	15,6	14,3	13,1	12,0
12,4	13,5	14,7	15,9	17,3	**106,5**	17,3	15,8	14,5	13,3	12,1
12,5	13,7	14,8	16,1	17,5	**107,0**	17,5	15,9	14,6	13,4	12,2
12,6	13,8	14,9	16,2	17,7	**107,5**	17,7	16,1	14,7	13,5	12,3
12,7	13,9	15,1	16,4	17,8	**108,0**	17,8	16,3	14,9	13,7	12,4
12,8	14,0	15,2	16,5	18,0	**108,5**	18,0	16,4	15,0	13,8	12,6
12,9	14,1	15,3	16,7	18,2	**109,0**	18,2	16,6	15,2	13,9	12,7
13,1	14,3	15,5	16,8	18,3	**109,5**	18,4	16,8	15,4	14,1	12,8
13,2	14,4	15,6	17,0	18,5	**110,0**	18,6	17,0	15,5	14,2	12,9
13,3	14,5	15,8	17,1	18,7	**110,5**	18,8	17,1	15,7	14,4	13,1
13,4	14,6	15,9	17,3	18,9	**111,0**	19,0	17,3	15,8	14,5	13,2
13,5	14,8	16,0	17,5	19,1	**111,5**	19,2	17,5	16,0	14,7	13,3
13,6	14,9	16,2	17,6	19,2	**112,0**	19,4	17,7	16,2	14,8	13,5
13,7	15,0	16,3	17,8	19,4	**112,5**	19,6	17,9	16,3	15,0	13,6
13,8	15,2	16,5	18,0	19,6	**113,0**	19,8	18,0	16,5	15,1	13,7
14,0	15,3	16,6	18,1	19,8	**113,5**	20,0	18,2	16,7	15,3	13,9
14,1	15,4	16,8	18,3	20,0	**114,0**	20,2	18,4	16,8	15,4	14,0
14,2	15,6	16,9	18,5	20,2	**114,5**	20,5	18,6	17,0	15,6	14,1
14,3	15,7	17,1	18,6	20,4	**115,0**	20,7	18,8	17,2	15,7	14,3
14,4	15,8	17,2	18,8	20,6	**115,5**	20,9	19,0	17,3	15,9	14,4
14,6	16,0	17,4	19,0	20,8	**116,0**	21,1	19,2	17,5	16,0	14,5
14,7	16,1	17,5	19,2	21,0	**116,5**	21,3	19,4	17,7	16,2	14,7
14,8	16,2	17,7	19,3	21,2	**117,0**	21,5	19,6	17,8	16,3	14,8
14,9	16,4	17,9	19,5	21,4	**117,5**	21,7	19,8	18,0	16,5	15,0
15,0	16,5	18,0	19,7	21,6	**118,0**	22,0	20,0	18,2	16,6	15,1
15,2	16,7	18,2	19,9	21,8	**118,5**	22,2	20,1	18,4	16,8	15,2
15,3	16,8	18,3	20,0	22,0	**119,0**	22,4	20,3	18,5	16,9	15,4
15,4	16,9	18,5	20,2	22,2	**119,5**	22,6	20,5	18,7	17,1	15,5
15,5	17,1	18,6	20,4	22,4	**120,0**	22,8	20,7	18,9	17,3	15,6

* Using this table, length should be measured from 45 to 86,9 cm and height should be measured from 87 to 120 cm.

ANNEX 11: WHO BMI TABLES BY AGE (5-18 YEARS)

Males

Age (years:months)	Severe malnutrition < -3 SD	Moderate malnutrition ≥ -3 to < -2 SD	Normal ≥ -2 to ≤ +1 SD	Overweight > +1 to ≤ +2 SD	Obese > +2 SD
5:1	less than 12.1	12.1-12.9	13.0-16.6	16.7-18.3	18.4 or higher
5:6	less than 12.1	12.1-12.9	13.0-16.7	16.8-18.4	18.5 or higher
6:0	less than 12.1	12.1-12.9	13.0-16.8	16.9-18.5	18.6 or higher
6:6	less than 12.2	12.2-13.0	13.1-16.9	17.0-18.7	18.8 or higher
7:0	less than 12.3	12.3-13.0	13.1-17.0	17.1-19.0	19.1 or higher
7:6	less than 12.3	12.3-13.1	13.2-17.2	17.3-19.3	19.4 or higher
8:0	less than 12.4	12.4-13.2	13.3-17.4	17.5-19.7	19.8 or higher
8:6	less than 12.5	12.5-13.3	13.4-17.7	17.8-20.1	20.2 or higher
9:0	less than 12.6	12.6-13.4	13.5-17.9	18.0-20.5	20.6 or higher
9:6	less than 12.7	12.7-13.5	13.6-18.2	18.3-20.9	21.0 or higher
10:0	less than 12.8	12.8-13.6	13.7-18.5	18.6-21.4	21.5 or higher
10:6	less than 12.9	12.9-13.8	13.9-18.8	18.9-21.9	22.0 or higher
11:0	less than 13.1	13.1-14.0	14.1-19.2	19.3-22.5	22.6 or higher
11:6	less than 13.2	13.2-14.1	14.2-19.5	19.6-23.0	23.1 or higher
12:0	less than 13.4	13.4-14.4	14.5-19.9	20.0-23.6	23.7 or higher
12:6	less than 13.6	13.6-14.6	14.7-20.4	20.5-24.2	24.3 or higher
13:0	less than 13.8	13.8-14.8	14.9-20.8	20.9-24.8	24.9 or higher
13:6	less than 14.0	14.0-15.1	15.2-21.3	21.4-25.3	25.4 or higher
14:0	less than 14.3	14.3-15.4	15.5-21.8	21.9-25.9	26.0 or higher
14:6	less than 14.5	14.5-15.6	15.7-22.2	22.3-26.5	26.6 or higher
15:0	less than 14.7	14.7-15.9	16.0-22.7	22.8-27.0	27.1 or higher
15:6	less than 14.9	14.9-16.2	16.3-23.1	23.2-27.4	27.5 or higher
16:0	less than 15.1	15.1-16.4	16.5-23.5	23.6-27.9	28.0 or higher
16:6	less than 15.3	15.3-16.6	16.7-23.9	24.0-28.3	28.4 or higher
17:0	less than 15.4	15.4-16.8	16.9-24.3	24.4-28.6	28.7 or higher
17:6	less than 15.6	15.6-17.0	17.1-24.6	24.7-29.0	29.1 or higher
18:0	less than 15.7	15.7-17.2	17.3-24.9	25.0-29.2	29.3 or higher
≥19	< 16.0	16.0-16.9	18.5-24.9	25.0-29.9	30.0 or higher

ANNEX 11: WHO BMI TABLES BY AGE (5-18 YEARS)

Females

Age (years:months)	Severe malnutrition < -3 SD	Moderate malnutrition ≥ -3 to < -2 SD	Normal ≥ -2 to ≤ +1 SD	Overweight > +1 to ≤ +2 SD	Obese > +2 SD
5:1	less than 11.8	11.8-12.6	12.7-16.9	17.0-18.9	19.0 or higher
5:6	less than 11.7	11.7-12.6	12.7-16.9	17.0-19.0	19.1 or higher
6:0	less than 11.7	11.7-12.6	12.7-17.0	17.1-19.2	19.3 or higher
6:6	less than 11.7	11.7-12.6	12.7-17.1	17.2-19.5	19.6 or higher
7:0	less than 11.8	11.8-12.6	12.7-17.3	17.4-19.8	19.9 or higher
7:6	less than 11.8	11.8-12.7	12.8-17.5	17.6-20.1	20.2 or higher
8:0	less than 11.9	11.9-12.8	12.9-17.7	17.8-20.6	20.7 or higher
8:6	less than 12.0	12.0-12.9	13.0-18.0	18.1-21.0	21.1 or higher
9:0	less than 12.1	12.1-13.0	13.1-18.3	18.4-21.5	21.6 or higher
9:6	less than 12.2	12.2-13.2	13.3-18.7	18.8-22.0	22.1 or higher
10:0	less than 12.4	12.4-13.4	13.5-19.0	19.1-22.6	22.7 or higher
10:6	less than 12.5	12.5-13.6	13.7-19.4	19.5-23.1	23.2 or higher
11:0	less than 12.7	12.7-13.8	13.9-19.9	20.0-23.7	23.8 or higher
11:6	less than 12.9	12.9-14.0	14.1-20.3	20.4-24.3	24.4 or higher
12:0	less than 13.2	13.2-14.3	14.4-20.8	20.9-25.0	25.1 or higher
12:6	less than 13.4	13.4-14.6	14.7-21.3	21.4-25.6	25.7 or higher
13:0	less than 13.6	13.6-14.8	14.9-21.8	21.9-26.2	26.3 or higher
13:6	less than 13.8	13.8-15.1	15.2-22.3	22.4-26.8	26.9 or higher
14:0	less than 14.0	14.0-15.3	15.4-22.7	22.8-27.3	27.4 or higher
14:6	less than 14.2	14.2-15.6	15.7-23.1	23.2-27.8	27.9 or higher
15:0	less than 14.4	14.4-15.8	15.9-23.5	23.6-28.2	28.3 or higher
15:6	less than 14.5	14.5-15.9	16.0-23.8	23.9-28.6	28.7 or higher
16:0	less than 14.6	14.6-16.1	16.2-24.1	24.2-28.9	29.0 or higher
16:6	less than 14.7	14.7-16.2	16.3-24.3	24.4-29.1	29.2 or higher
17:0	less than 14.7	14.7-16.3	16.4-24.5	24.6-29.3	29.4 or higher
17:6	less than 14.7	14.7-16.3	16.4-24.6	24.7-29.4	29.5 or higher
18:0	less than 14.7	14.7-16.3	16.4-24.8	24.9-29.5	29.6 or higher
≥19 (non-pregnant, non-lactating)	< 16.0	16.0-16.9	18.5-24.9	25.0-29.9	30.0 or higher

ANNEX 12: COMPONENTS OF A COMPREHENSIVE HISTORY AND PHYSICAL EXAMINATION

1. The history should consist of the following components:

a. Current symptoms

b. Past medical history:

- Birth history in children
- Growth and developmental history in children (Annexes 1,2,3)
- Obstetrics/gynaecology history in adolescent girls and women
- History of STIs, diabetes, hepatitis, renal insufficiency, peripheral neuropathy, hyperlipidaemia, lipodystrophy, hypertension
- Mental health and substance abuse history
- Past hospital admissions

c. Assessment of TB symptoms, prior TB treatment history, and TB exposure history

d. Nutritional assessment, including a feeding history and date of last breastfeeding (in children)

e. Immunization assessment

f. Medications, including:

- Current medications
- Prior exposure to ARVs, including those for PrEP, PEP, or PMTCT(obtaining details of all ARVs previously taken is crucial in order to select the correct ART regimen for a patient)
- Any traditional or herbal medicines
- Known food or medication allergies

g. Family history

- HIV status of current household members and sexual partners
- Possible TB contacts
- Other medical conditions

h. Social history, including:

- Initial assessment for potential barriers to adherence (familial, financial, medical and mental status)
- Work history
- School attendance
- Functional ability
- Family planning
- Substance use, including alcohol, tobacco, marijuana, and other drug use

i. Review of symptoms

2. Physical examination should proceed from head to toe, and include the following:

a. Anthropometric measurements:

- Weight (to be repeated at every visit)
- Baseline length or height for all (repeated every 3 months in children)
- Head circumference for children < 3 years of age (repeated every 3 months until 3 years of age)
- Assess weight-for-height Z score for children <5 years
- Body mass index (BMI) for children ≥5 years, adolescents, and adults (determine BMI for age for children 5-18 years old)
- Mid upper arm circumference (MUAC)

b. Vitals signs (temperature, heart rate, blood pressure, respiratory rate, oxygen saturation measured by pulse oximeter if available)
c. General appearance (wasting, respiratory distress, pallor, jaundice, cyanosis, parotid enlargement, generalized oedema, signs of dehydration)
d. Scalp (tinea, sores, signs of malnutrition)

f. Ears (discharge)
g. Mouth, oropharynx (thrush, ulcers, dental caries, gingivitis, Kaposi's sarcoma lesions)
h.Lymphadenopathy (submandibular, cervical, axillary, inguinal)
i. Lung sounds (wheeze, crackles, rhonchi); respiratory distress (tachypnea, nasal flaring, chest in-drawing)
j. Heart sounds (murmur, gallop, tachycardia, irregular rhythm, extra heart sounds) and peripheral pulses
k. Abdomen (hepatomegaly, splenomegaly, distension, tenderness)
l. Genital area:
- Tanner staging in older children
- Evidence of STIs (ulcers, warts, discharge)

m. Extremities:
- Fingers (paronychia, clubbing, paleness)
- Peripheral oedema
- Musculoskeletal (joint swelling, joint pain, back pain, muscle tenderness)

n. Skin lesions
o. Neurological (sensory abnormalities, hypotonia, hypertonia, decreased strength, developmental milestones)
p. Mental status

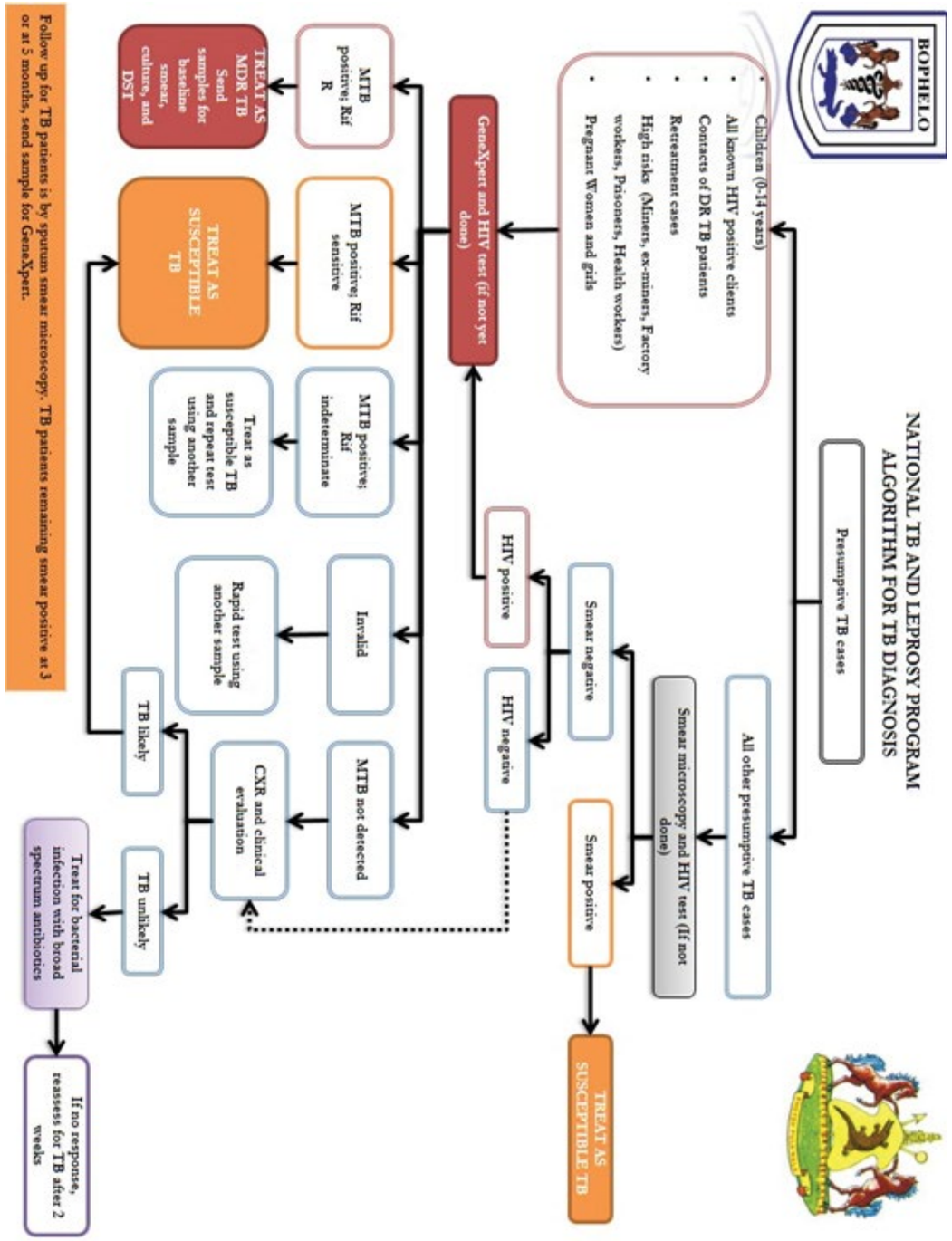
ANNEX 13: WHO CLINICAL STAGING

WHO Clinical Stages of HIV disease in adults, adolescents and children

Adults and adolescents (15+ years)	Children (0-14 years)
Clinical Stage 1 (Asymptomatic)	
• Asymptomatic • Persistent generalized lymphadenopathy	• Asymptomatic • Persistent generalized lymphadenopathy
Clinical Stage 2	
• Moderate unexplained weight loss (<10% of presumed or measured body weight) • Recurrent respiratory tract infections (sinusitis, tonsillitis, otitis media, pharyngitis) • Herpes zoster • Angular cheilitis • Recurrent oral ulceration (≥2 episodes in 6 months) • Papular pruritic eruption (PPE) • Fungal nail infections • Seborrhoeic dermatitis	• Unexplained persistent hepatosplenomegaly • Recurrent or chronic upper respiratory tract infections (otitis media, otorrhoea, sinusitis, tonsillitis) • Herpes zoster • Lineal gingival erythema • Recurrent oral ulceration (≥2 episodes in 6 months) • Papular pruritic eruption (PPE) • Fungal nail infections • Extensive wart virus infection (facial or ≥5% body surface) • Extensive molluscum contagiosum (facial or ≥5% body surface) • Unexplained persistent parotid enlargement
Clinical Stage 3	
• Unexplained severe weight loss (>10% of presumed or measured body weight) • Unexplained chronic diarrhoea for longer than 1 month • Unexplained persistent fever (intermittent or constant for longer than 1 month) • Persistent oral candidiasis • Oral hairy leucoplakia • Pulmonary tuberculosis • Severe bacterial infections (such as pneumonia, empyema, pyomyositis, bone or joint infection, meningitis, bacteraemia) • Acute necrotizing ulcerative stomatitis, gingivitis or periodontitis • Unexplained anaemia (<8 g/dL), neutropenia (<0.5 x 10^9/L) and/or chronic thrombocytopaenia (<50 x 10^9/L)	• Unexplained moderate malnutrition not adequately responding to standard therapy • Unexplained persistent diarrhoea (14 days or more) • Unexplained persistent fever (above 37.5°C, intermittent or constant, for longer than one 1 month) • Persistent oral candidiasis (after first 6 weeks of life) • Oral hairy leucoplakia • Lymph node tuberculosis • Pulmonary tuberculosis • Severe recurrent bacterial pneumonia • Acute necrotizing ulcerative gingivitis or periodontitis • Unexplained anaemia (<8 g/dL), neutropenia (<0.5 x 10^9/L) or chronic thrombocytopaenia (<50 x 10^9/L) • Symptomatic lymphoid interstitial pneumonitis • Chronic HIV-associated lung disease, including bronchiectasis

Clinical Stage 4	
• HIV wasting syndrome • Pneumocystis (jirovecii) pneumonia • Recurrent severe bacterial pneumonia • Chronic herpes simplex infection (orolabial, genital or anorectal of more than 1 month's duration or visceral at any site) • Oesophageal candidiasis (or candidiasis of trachea, bronchi or lungs) • Extrapulmonary tuberculosis • Kaposi sarcoma • Cytomegalovirus infection (retinitis or infection of other organs) • Central nervous system toxoplasmosis • HIV encephalopathy • Extrapulmonary cryptococcosis, including meningitis • Disseminated nontuberculous mycobacterial infection • Progressive multifocal leukoencephalopathy • Chronic cryptosporidiosis • Chronic isosporiasis • Disseminated mycosis (extrapulmonary histoplasmosis, coccidioidomycosis) • Lymphoma (cerebral or B-cell non-Hodgkin) • Symptomatic HIV-associated nephropathy or cardiomyopathy • Recurrent septicaemia (including nontyphoidal Salmonella) • Invasive cervical carcinoma • Atypical disseminated leishmaniasis	• Unexplained severe wasting, stunting or severe malnutrition not responding to standard therapy • Pneumocystis (jirovecii) pneumonia • Recurrent severe bacterial infections (such as empyema, pyomyositis, bone or joint infection, meningitis, but excluding pneumonia) • Chronic herpes simplex infection (orolabial or cutaneous of more than 1 month's duration or visceral at any site) • Oesophageal candidiasis (or candidiasis of trachea, bronchi or lungs) • Extrapulmonary tuberculosis • Kaposi sarcoma • Cytomegalovirus infection (retinitis or infection of other organs with onset at age more than 1 month) • Central nervous system toxoplasmosis (after the neonatal period) • HIV encephalopathy • Extrapulmonary cryptococcosis, including meningitis • Disseminated nontuberculous mycobacterial infection • Progressive multifocal leukoencephalopathy • Chronic cryptosporidiosis (with diarrhoea) • Chronic isosporiasis • Disseminated endemic mycosis (extrapulmonary histoplasmosis, coccidioidomycosis, penicilliosis) • Lymphoma (cerebral or B-cell non-Hodgkin) • HIV-associated nephropathy or cardiomyopathy

ANNEX 14: NATIONAL TB DIAGNOSTIC ALGORITHM



ANNEX 15: TB SCREENING TOOL

Screening date (day / month / year) _____ / _____ / _____

District _____ Health Facility _____

Client Name _____ Sex (circle) Male Female

Age _____ DOB _____ / _____ / _____

Pregnant (circle) No Yes If yes, gestational age _____ weeks

HIV status (circle) Positive Negative Indeterminate Unknown

Adults / Adolescents YES NO
1. Are you coughing?
2. Have you lost weight (without trying)?
3. Do you have drenching/soaking sweats at night?
4. Do you have fevers?

Infants / Children YES NO
5. Has the child been coughing?
6. Has the child had a fever?
7. Failure to thrive / faltering growth1 or signs of severe malnutrition2?
8. Has the child been in contact with someone with TB disease?

[__] If "Yes" to any question above, then the patient is a TB suspect.

Record patient details in the TB suspect register, record TB suspect ID number below, and collect 3 sputum specimen for smear examination ± TB culture or GeneXpert testing.

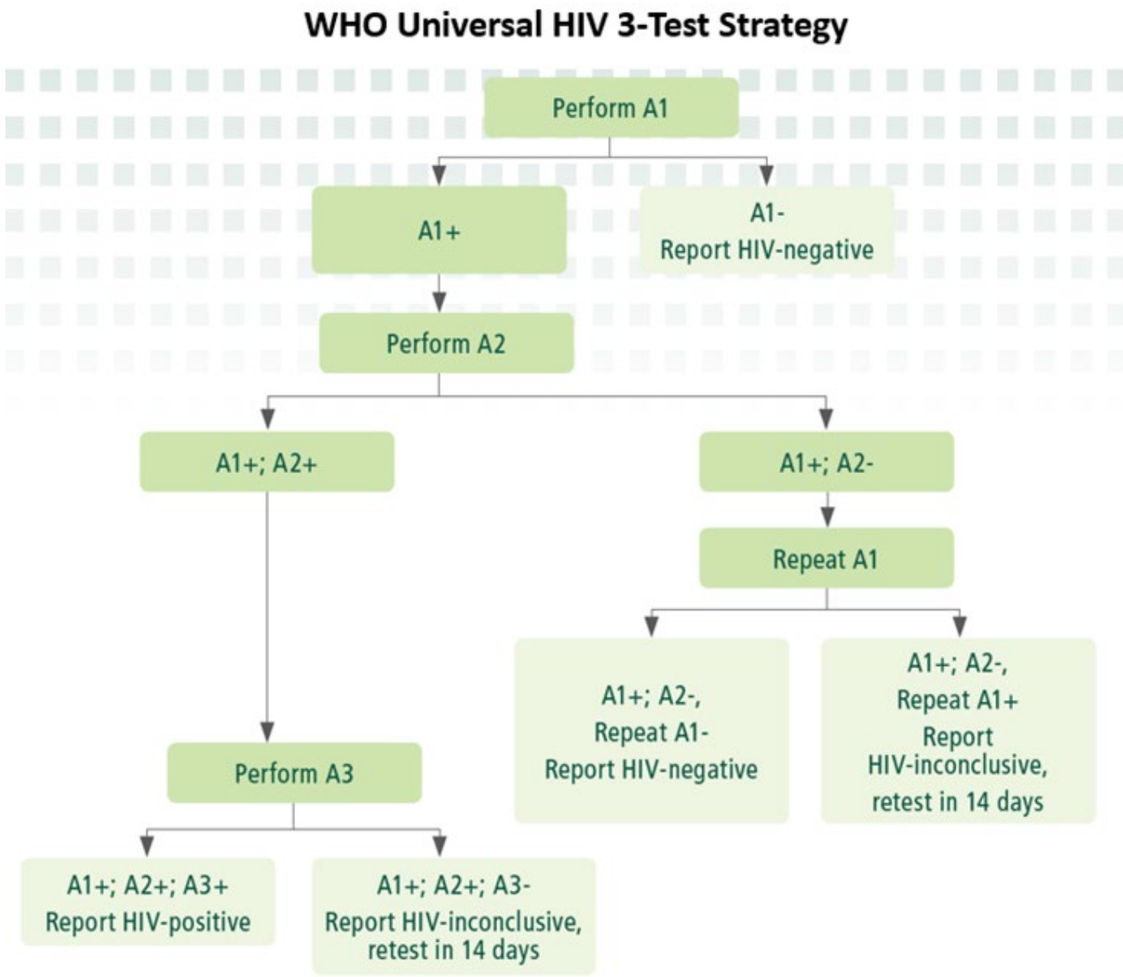
TB suspect ID number: _____
Sputum collected for smear microscopy x 3 [__] Yes [__] No
Sputum sent for TB culture [__] Yes [__] No
Sputum sent for GeneXpert testing [__] Yes [__] No

[__] If "No" to all questions above, then the patient is not a TB suspect.

Educate HIV-infected patients and child contacts under the age of 5 years about the benefits of IPT.

IPT ID number: _____

ANNEX 16: HIV RAPID DIAGNOSTIC TESTING ALGORITHM (>18 MONTHS)



PATIENT HEALTH QUESTIONNAIRE (PHQ- 2)

Lebitso la Mokuli (Patient name) _____ Date_____

Libekeng tse peli tse fetileng, ke ha kae u kileng ua ba le e 'ngoe ea tse latelang?
During the past two weeks, how often have you been bothered by of the following problems?

	Ha ho letho 0 days	**Matsatsi a 'maloa** 1-7 days	**Beke kapa ho feta** 8-10 days	**Matsatsi kaofela** 11-14 days
	0 points	*1 point*	*2 points*	*3 points*
1. Na u hloka thahasello linthong tseo u li ratang? Little interest or pleasure in doing things?				
2. Na u na le ho utloa u nyotobetse kapa u oele moea? Feeling down, depressed, irritable or hopeless?				

PHQ-2 Scoring: Add the score for each question to calculate the total score.

Interpretation :
If the score is 3 or greater, major depressive disorder is likely.
A positive screen (≥3 points) should be investigated further

PATIENT HEALTH QUESTIONNAIRE (PHQ- 9)

Lebitso la Mokuli (Patient Name)_____ Date:_____

O lemohile mathata a latelang ho uena bekeng tse peli tse fetileng?
Over the last 2 weeks, how often have you been bothered by the following problems?

	Ha ho letho 0 days	**Matsatsi a 'maloa** 1-7 days	**Beke kapa ho feta** 8-10 days	**Matsatsi kaofela** 11-14 days
	0 points	*1 point*	*2 points*	*3 points*
1. Ke ikutloa moea o le fats'e, ke sena tse'po. Little interest or pleasure in doing things				
2. Ke hloka thabo/ thahasello ea ho etsa lintho. Ha kena takatso ea ho etsa lintho. Feeling down, depressed or hopeless				
3. Kena le bothata ba ho hloka boroko kapa ho robala haholo. Trouble falling asleep, staying asleep or sleeping too much				
4. Kena le mokhathala o mongata, kappa matla a manyane. Feeling tired or having little energy				
5. Ha kena takatso ea lijo, kappa ke ja haholo. Poor appetite or overeating				
6. Ke ichebela fats'e, kappa ho nahana hore ke soabisa lelapa leso. Feeling bad about yourself, or that you're a failure or have let yourself or your family down				
7. Kena le bothata ba ho nahana litho, ho bala libuka tsaka, kappa ho shebella TV. Trouble concentrating on things, such as reading the newspaper or watching television				
8. Ke tsamaea kappa ke bua butle (hanyane) hoo batho ba bang ba elellong Moving or speaking so slowly that other people could have noticed				
9. Kena le menahano ea ho ka itematsa (ints'a kotsi), kappa ho ipolaea. Thoughts that you would be better off dead or of hurting yourself in some way				

PHQ-9 Scoring: Add the score for each question to calculate the total score.

Interpretation :

PHQ-9 Score	Depression Severity	Proposed Treatment Actions
0 – 4	None-minimal	None
5 – 9	Mild	Watchful waiting; repeat PHQ-9 at follow-up
10 – 14	Moderate	Treatment plan: consider counselling, follow-up and/or pharmacotherapy
15 – 19	Moderately Severe	Active treatment with pharmacotherapy and/or psychotherapy
20 – 27	Severe	Immediate initiation of pharmacotherapy and, if severe impairment or poor response to therapy, expedited referral to a mental health specialist for psychotherapy and/or collaborative management

Note: Question 9 is a single screening question on suicide risk. A patient who answers yes to question 9 needs further assessment for suicide risk.

ANNEX 18: ANXIETY SCREENING TOOL

GENERALIZED ANXIETY DISORDER, 7 QUESTIONS (GAD-7)

Lebitso la Mokuli (Patient name) _____ Date_____

Libekeng tse peli tse fetileng, ke ha kae u kileng ua ba le e 'ngoe ea tse latelang?
During the past two weeks, how often have you been bothered by of the following problems?

	Ha ho letho 0 days *0 points*	**Matsatsi a 'maloa** 1-7 days *1 point*	**Beke kapa ho feta** 8-10 days *2 points*	**Matsatsi kaofela** 11-14 days *3 points*
1. **O ikutloile o na le letsoalo.** Feeling nervous, anxious or on edge				
2. **O na le bothata ba ho khaleha kappa ho lula o ngongorehile** Not able to stop or control worrying				
3. **O nahana haholo ka ntho tse ngata.** Worrying too much about different things				
4. **O sitoa ho phomola** Trouble relaxing				
5. **O sitoa ho tsitsa nqa ele ngoe nako e telele** Being so restless that it is hard to sit still				
6. **O teneha kapele.** Becoming easily annoyed or irritable				
7. **O ikutloa ona le letsoalo, e kare ntho e mpe etla etsahala.** Feeling afraid as if something awful might happen				

GAD-7 Scoring: Add the score for each question to calculate the total score.

Interpretation :
If the score is 8 or greater, generalized anxiety disorder is likely.

A positive screen (≥8 points) should be investigated further. Additional diagnostics are needed to confirm the presence and type of anxiety disorder. Although designed to screen for generalized anxiety, the GAD-7 allow performs well as a screening tool for panic disorder, social anxiety disorder and posttraumatic stress disorder.

National HIV Curriculum. Generalized Anxiety Disorder-7 Questions (GAD-7). Accessed at

ANNEX 19: HEADSS ASSESSMENT

HEADSS Assessment is a tool to identify issues in adolescent's lives. Sample questions are included below

, .

- **Home**
  - Who lives with the young person? Where?
  - Do they have their own room?
  - What are relationships like at home?
  - What do parents and relatives do for a living?
  - Ever institutionalized? Incarcerated?
  - Recent moves? Running away?
  - New people in home environment?
- **Education and employment**
  - School/grade performance--any recent changes? Any dramatic past changes?
  - Favorite subjects--worst subjects?
  - Any years repeated/classes failed?
  - Suspension, termination, dropping out?
  - Future education/employment plans?
  - Any current or past employment?
- **Activities**
  - On own, with peers (what do you do for fun? where? when?)
  - With family?
  - Sports--regular exercise?
  - Church attendance, clubs, projects?
  - Hobbies--other activities?
  - TV/social media--how much weekly--favorite shows/channels/apps?
  - Favorite music?
  - History of arrests--acting out--crime?
- **Drugs**
  - Use by peers? Use by young person? (include tobacco, alcohol)
  - Use by family members? (include tobacco, alcohol)
  - Amounts, frequency, patterns of use/abuse, and car use while intoxicated? Source--how paid for?
- **Sexuality**
  - Orientation?
  - Degree and types of sexual experience and acts?
  - Number of partners? Masturbation? (normalize)
  - History of pregnancy/abortion?
  - Sexually transmitted diseases--knowledge and prevention?
  - Contraception? Frequency of use?
  - Comfort with sexual activity, enjoyment/pleasure obtained?
  - History of sexual/physical abuse?
- **Suicide/Depression**
  - Sleep disorders (usually induction problems, also early/frequent waking or greatly increased sleep and complaints of increasing fatigue)
  - Appetite/eating behavior changes
  - Feelings of 'boredom'
  - Emotional outbursts and highly impulsive behavior
  - History of withdrawal/isolation
  - Hopeless/helpless feelings
  - History of past suicide attempts, depression, psychological counseling
  - History of suicide attempts in family or peers
  - History of recurrent serious 'accidents'
  - Psychosomatic symptomology
  - Suicidal ideation
  - Decreased affect on interview, avoidance of eye contact--depression posturing
  - Preoccupation with death (clothing, media, music, art).

Goldenring, J, Cohen, E (1988) Getting into adolescents heads. Contemporary Pediatrics, July: 75-80.
Cohen, E, MacKenzie, R.G., Yates, G.L. (1991). HEADSS, a psychosocial risk assessment instrument: Implications for designing effective intervention programs for runaway youth. Journal of Adolescent
Health 12 (7): 539-544.

References: Goldenring, J, Cohen, E (1988) Getting into adolescents heads. Contemporary Pediatrics, July: 75-80. Cohen, E, MacKenzie, R.G., Yates, G.L. (1991). HEADSS, a psychosocial risk assessment instrument: Implications for designing effective intervention programs for runaway youth. Journal of Adolescent Health 12 (7): 539-544.

Lesotho