The 90-90-90 COMPENDIUM

Volume 2

Clinicians' Guide

HEALTH SYSTEMS TRUST

THE 90-90-90 COMPENDIUM

Health Systems Trust partners with a number of Department of Health districts in implementing the 90-90-90 strategy. Our health systems strengthening fieldwork identified the need for a practical guide to assist health workers and other stakeholders, including non-health workers, in understanding and implementing the strategy.

The four-volume 90-90-90 Compendium comprises:

Volume 1: ***An Introduction to 90-90-90 in South Africa***

Volume 2: ***The Clinicians' Guide***

Volume 3: ***Developing a District Implementation Plan***
a) The Trainees' Manual
b) The Facilitator's Manual

Volume 4: ***The Role of Communities and Individuals in Combatting the Epidemic***

The 90-90-90 COMPENDIUM

Volume 2

Clinicians' Guide

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HEALTH SYSTEMS TRUST

NOTE:

The National Department of Health is in the process of developing new cascades (of health performance indicators) for HIV and TB care and treatment. The new versions are included in this Guide where available, otherwise the old versions remain.

A new edition of this Clinicians' Guide will be published once all of the updated cascades are available.

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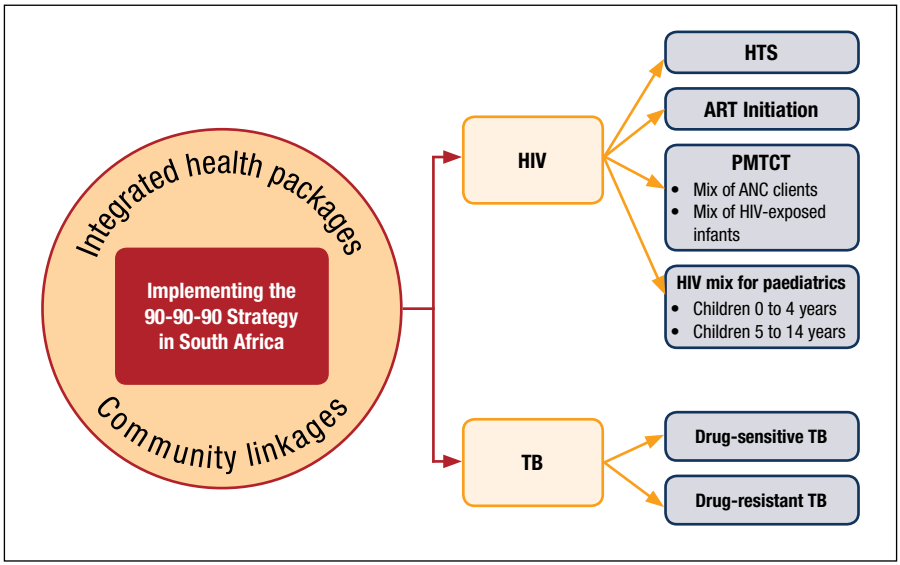
TABLE OF CONTENTS

Visual presentation of the Clinicians' Guide content



LIST OF FIGURES

LIST OF TABLES

ACRONYMS

3TC	lamivudine, Epivir
ABC	abacavir
AFB	acid-fast bacilli
AIDS	Acquired Immune Deficiency Syndrome
ALT	alanine aminotransferase
ART	antiretroviral treatment
AZT	azidothymidine
BANC	basic antenatal care
BCG	Bacillus Calmette-Guérin [vaccine]
BD	twice daily
BMI	Body Mass Index
BP	blood pressure
CA	cancer antigen
CBO	community-based organisation
CCG	community caregiver
CCMDD	Central Chronic Medicine Dispensing and Distribution
CPT	co-trimoxazole preventive treatment
CrAg	cryptococcus antigen
CXR	chest X-ray
D4T	stavudine, Zerit
DAC	District AIDS Council
DHIS	District Health Information System
DIP	District Implementation Plan
DoH	Department of Health
DOT	directly observed treatment
DR-TB	drug-resistant tuberculosis
DST	drug-susceptibility testing
EFV	efavirenz
ELISA	enzyme-linked immunosorbent assay [HIV test]
EPI	Expanded Programme for Immunisation
FAMSA	Families South Africa
FBC	full blood count
FDC	fixed-dose combination
FTC	emtricitabine, Emtriv
GXP	GeneXpert
Hb	haemoglobin
HBV	hepatitis B virus
HGT	Haemoglukotest (blood glucose test)
HIV	Human Immunodeficiency Virus

HTC	HIV testing and counselling
HTS	HIV Testing Services
ICRM	Ideal Clinic Realisation and Maintenance
ICSM	Integrated Clinical Services Model
IMCI	Integrated Management of Childhood Illness
INH	isoniazid
IPT	isoniazid preventive therapy
KZN	KwaZulu-Natal Province
LAC	Local AIDS Council
LPA	Line probe assay (Genotype MTBDR®)
LPVr	lopinavir boosted with ritanovir
MDR	multidrug-resistant
MMC	medical male circumcision
MSM	men who have sex with men
MUAC	mid-upper arm circumference
NCDs	non-communicable diseases
NDoH	National Department of Health
NGO	non-governmental organisation
NSP	National Strategic Plan
NVP	nevirapine
OHH	outreach household
OSS	Operation Sukuma Sakhe
OVC	orphans and vulnerable children
PITC	provider-initiated testing and counselling
PHC	primary health care
PCR	polymerase chain reaction
PLHIV	people living with HIV
PMTCT	prevention of mother-to-child transmission of HIV
RIF	Rifampicin
RTH	Road-to-Health
SADAG	South African Depression and Anxiety Group
SANCA	South African National Council on Alcoholism and Drug Dependence
SAPS	South African Police Service
STIs	sexually transmitted infections
TDF	tenofovir disoproxil fumarate
TB	tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
UTT	Universal Test and Treat
VLD	viral load done
VLS	viral load suppressed
WAC	Ward AIDS Council
WBOT	Ward-based Outreach Team
XDR	extensively drug-resistant

FOREWORD

In providing much-needed HIV and TB clinical care to the many clients served by both the public and private healthcare systems at different levels of the service, clinicians will find this second volume of Health Systems Trust's *90-90-90 Compendium* to be a valuable resource and companion to the national HIV guidelines and related documents.

Compiled at a time when provision of HIV care in the country and globally is evolving rapidly, this *Clinicians' Guide* provides current, practical guidance and background, packaging essential information into a single document for the busy medical practitioner in the field. The content reflects the information presented in the latest national guidelines, and also anticipates likely changes related to the 'Universal Test and Treat' (UTT) approach adopted to achieve the 90-90-90 targets in the South African setting.

In this era when public health and clinical services are being driven by evidence and data, it is vital for clinical caregivers to appreciate the broader public health implications and impact of the care they provide. The *Clinicians' Guide* draws on illustrative cascades for HIV and TB care across the spectra of adult and paediatric HIV care, HIV in pregnancy and PMTCT, and drug-sensitive and drug-resistant TB care as these relate to the country's strategy for attaining the 90-90-90 targets.

If used effectively, this Guide has the potential to make a significant impact on the quality of clinical care provided to HIV and TB clients. Although primarily a clinician's resource, it should also prove to be a useful tool for facility and public health managers in their oversight of HIV and TB service delivery at facility and district level.

I commend the authors for a well-composed publication, the release of which is very timely as the country embarks on the journey of implementing the ambitious national 90-90-90 strategy and realising its

targets. Health Systems Trust is grateful for the financial support from PEPFAR through the Centers for Disease Control and Prevention that has made production of this *Clinicians' Guide* possible.

We look forward to wide use of the *Clinician's Guide* and welcome feedback that may enrich and improve subsequent versions.

Dr Themba Moeti
CEO: Health Systems Trust

INTRODUCTION TO VOLUME 2

Purpose and context of the Clinicians' Guide

The purpose of this guide is to provide a resource for clinicians on the ground who manage HIV and TB clients on a daily basis. The guide presents the tools and knowledge required to ensure that clients are offered the best quality of service, and will also enable the health facility to move towards achieving the 90-90-90 targets. This guide does **not** replace any national policies or guidelines, but is intended to assist with translating policy into practice.

The guide explains the origin of the 90-90-90 strategy, and offers step-by-step guidance on the management of TB and HIV clients, according to the prescribed treatment guidelines and algorithms covered in national policies. The guide also provides information on linkages to care, and on data collection to provide information for better planning and management of the HIV and TB programmes.

The guide, which is also suitable for use in the private sector, follows the programmatic cascades of managing clients towards achieving 90-90-90 outcomes.

Overview of the content

This guide is presented in six broad sections, as follows:

Section A provides an overview of the 90-90-90 strategy in the country. Ideally, readers will already have read this Compendium's Volume 1 – *An Introduction to the 90-90-90 Strategy in South Africa*. The meaning and implications of the strategy for both HIV and TB follow the brief background paragraph.

Section B considers different client care systems in the continuum of care for adults and children, and reflects on how community members should be linking to HIV and TB care.

Section C records the five main policies guiding HIV and TB services in the country.

Sections D and E provide detail on managing HIV clients, while **Section F** covers management of TB clients. Together, the latter three sections represent the essence of this volume.

SECTION A
The 90-90-90 strategy in South Africa

Background to the 90-90-90 targets

With the adoption of the Joint United Nations Programme on HIV/AIDS (UNAIDS) 90-90-90 strategy in December 2014, South Africa turned a corner in the approach to managing the dual epidemic of HIV and AIDS and tuberculosis (TB), which together are the leading cause of deaths in South Africa.

Part of the approach taken by the National Department of Health (NDoH) included adoption of the 90-90-90 principles, with adaptation to align with current policies. This means that South Africa aspires to 90% of HIV-positive people knowing their status, 90% of those that are HIV-positive and eligible being put on antiretroviral treatment (ART), and 90% of those on treatment having an undetectable viral load. The same applies for TB, in that 90% of people with TB will be screened, 90% will be initiated on treatment, and 90% will successfully complete treatment.

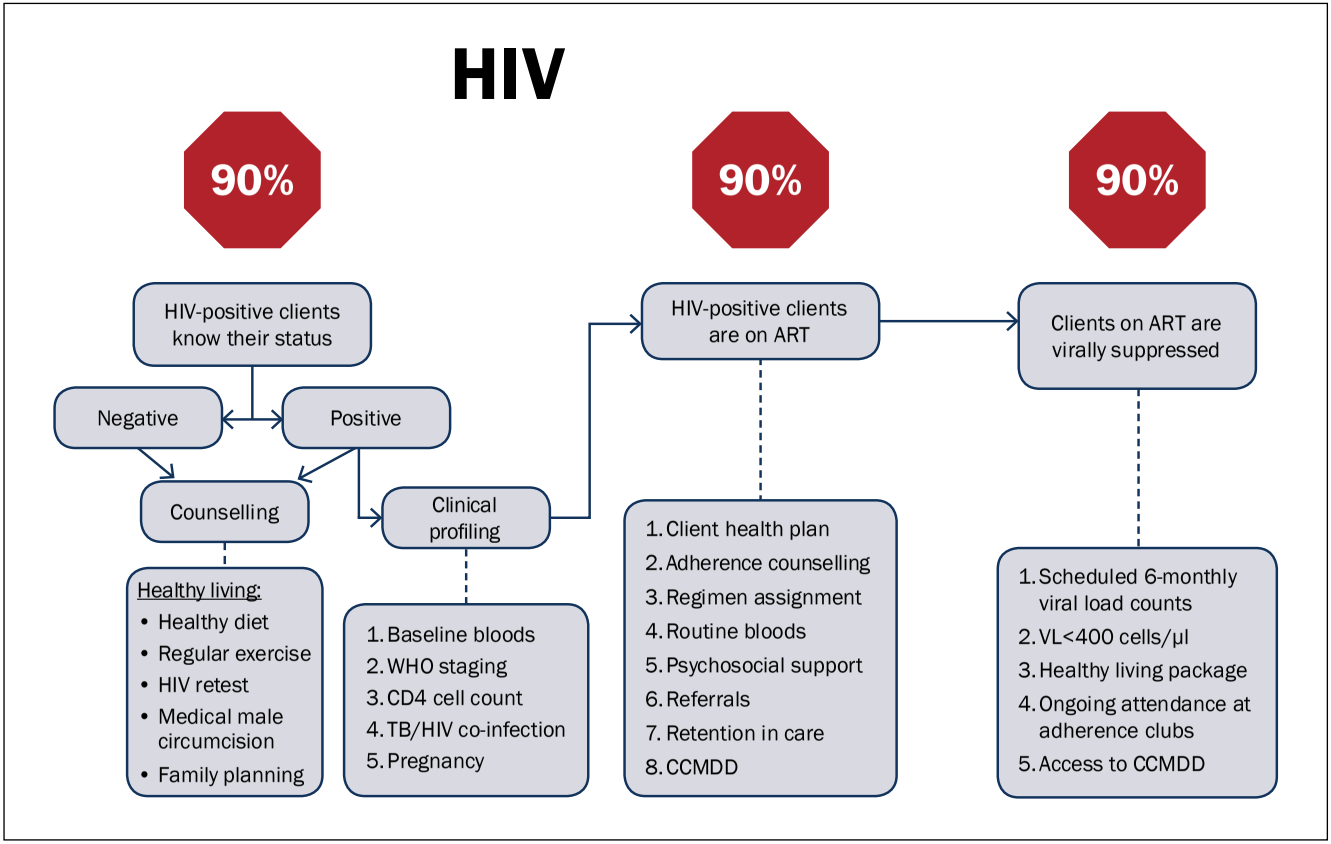
To achieve these ambitious targets, districts are now required to develop 90-90-90 District Implementation Plans (DIPs) with corresponding plans at sub-district and facility level. Every clinician managing HIV and TB clients has an important role to play in this endeavour.

What does '90-90-90 for HIV' mean in South Africa?

South Africa has an estimated 6.4 million people living with HIV, the largest HIV epidemic in absolute numbers of people infected in any country. Over 51% of the total population is female (28.08 million)[1] with an estimated one-fifth of women in their reproductive years being HIV-positive. Women aged 15 to 49 years have the highest HIV prevalence at 19%, and adults (men and women) in the 15- to 49-year category ranked second with an HIV prevalence of 16.6% in 2015. The HIV prevalence among young people aged 15 to 24 is 5.6%, and the prevalence among those aged 0 to 14 years is 2.4%.[2] South Africa's urban informal areas have an HIV prevalence of 19.9%, compared to 10.1% in urban formal areas.[3] In order to control the epidemic, it is essential that all people living with HIV are tested and know their status so that they can enter the care continuum and access appropriate care before they become ill.

Figure 1 is an illustration of the 90-90-90 strategic process for HIV and the overall HIV care pathway for a client from testing through to long-term adherence.

Figure 1: *Algorithm illustrating HIV treatment and care pathway*

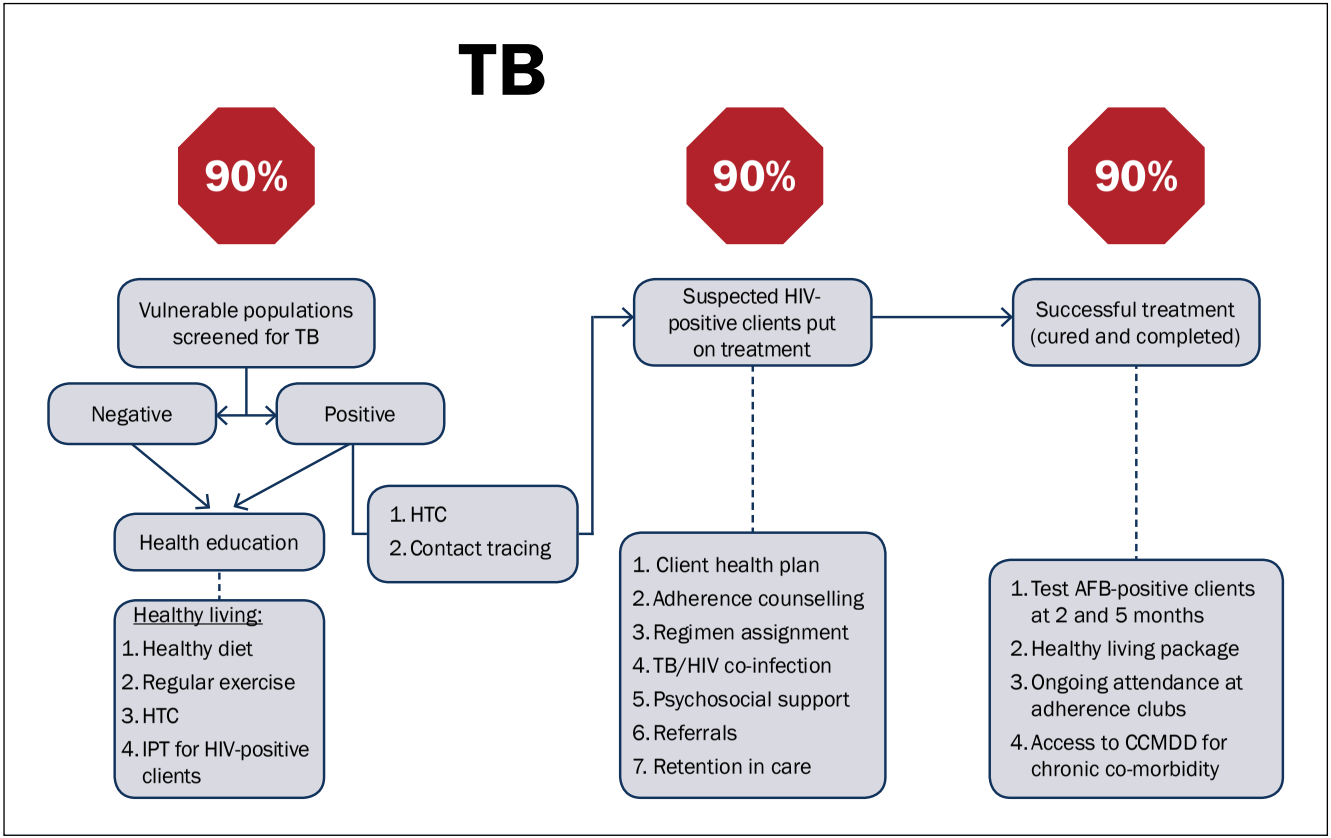


What does '90-90-90 for TB' mean in South Africa?

In terms of TB, the UNAIDS strategy has been adopted to tackle this disease in South Africa so that by the year 2020, 90% of vulnerable groups should have been screened for TB, 90% of people with TB should be diagnosed and started on treatment, and 90% of those treated for TB should successfully complete treatment.[4] South Africa has also adopted the Stop TB Partnership's new Global Plan to End TB: The Paradigm Shift (2016–2020). This plan sets 90-(90)-90 targets for TB as follows: first 90 – reach at least 90% of all people with TB and place all of them on appropriate therapy, first line or second line; second 90 – reach at least 90% of key populations (these being the most vulnerable, underserved, at-risk populations); and third 90 – achieve at least 90% treatment success for all people diagnosed with TB through affordable treatment services, adherence to complete and correct treatment, and social support.

Figure 2 illustrates the 90-90-90 process for TB and the overall TB care pathway from screening to successful treatment completion.

Figure 2: *Algorithm illustrating TB cascade and care pathway*



Using the 90-90-90 cascades

To assist management in monitoring and evaluating progress in service delivery and achievement of the targets, the health information relating to each 90-90-90 programme is presented in cascades[a], in which information for each step in the treatment and care process is presented pictorially in a single graph (Figure 3). The cascades demonstrate population-based planning at all levels, including facility level. The cascade is a model for identifying issues and opportunities relating to service-delivery improvement for targeted populations.

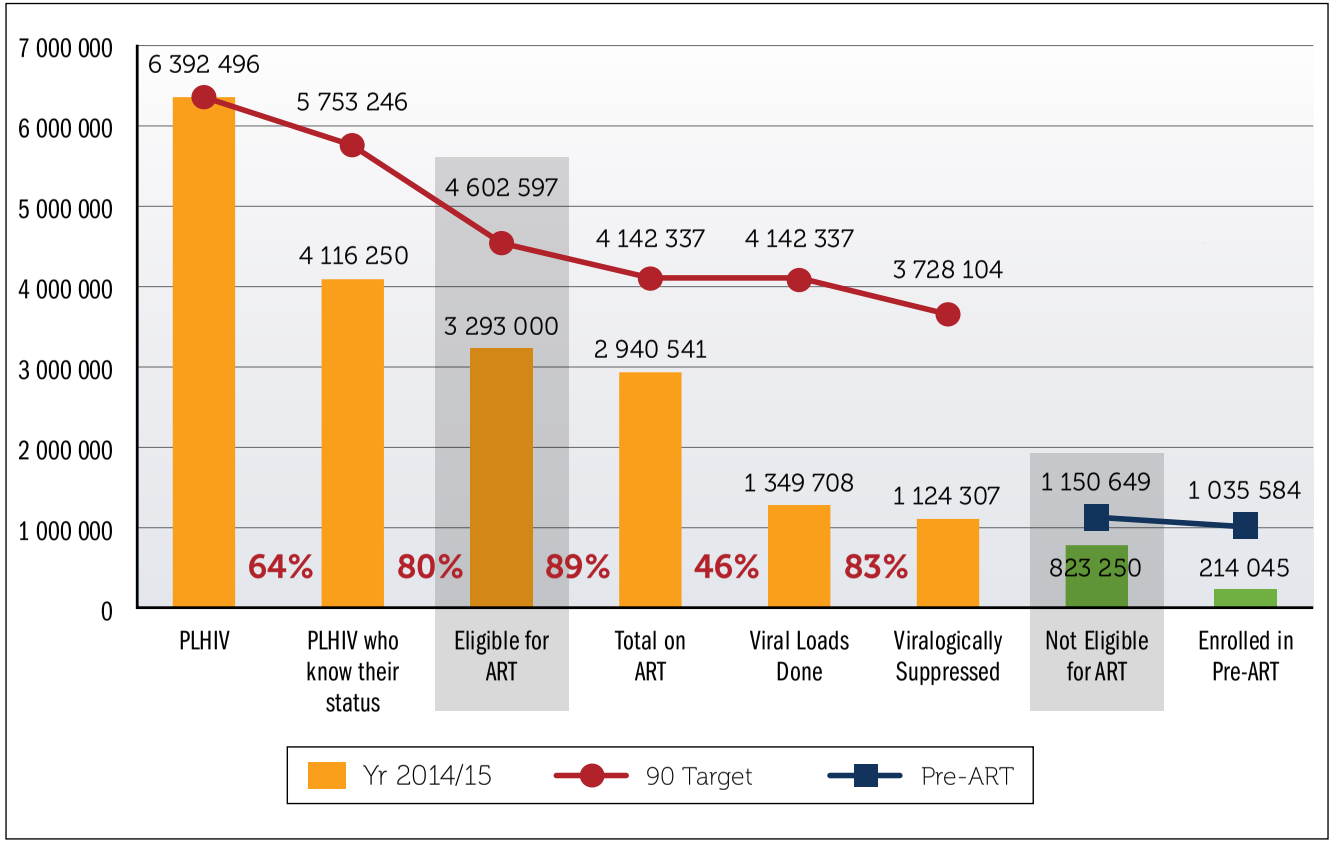
The power of the cascade, as shown below, lies in its user-friendly presentation of the following:

- All the pillars (key areas) of each cascade
- Targets for each pillar of the cascade
- Actual performance against the targets per pillar
- Gaps reflecting where clients 'fall off' between the pillars of the cascade.[b]

[a] A cascade is defined by the Oxford English Dictionary as "a succession of devices or stages in a process, each of which triggers or initiates the next". Cascades of health performance indicators are used to illustrate the continuum of care for TB and HIV clients and track performance towards achieving the 90-90-90 targets.

[b] The cascades represented in this document are the original cascades designed and published by the National Department of Health (NDoH) prior to the policy changes introducing 'Universal Test and Treat' (UTT). The eligibility pillars are greyed out to indicate that this pillar will fall away.

Figure 3: *Illustration of interpreted 90-90-90 adult HIV care and treatment cascade for clinicians*



The facility cascade in Figure 3 highlights the gaps between the facility targets for the community being served by this clinic and the actual number of clients accessing services at each pillar of the cascade. The proportion of clients who 'fall off between the pillars of the cascade' is clearly evident; for example:

1st 90: Only 5 023 (32%) of the 15 666 people estimated to be living with HIV (PLHIV) know their status

2nd 90: Of the 3 293 000 eligible to be initiated on ART prior to 1 September 2016, 2 940 541 (89%) have been initiated

3rd 90: Of the 2 940 541 clients remaining on ART, only 1 349 708 (46%) had viral load tests done and of those, only 1 124 307 (83%) were virally suppressed.

Of concern is the 'fall-off' between clients on ART and the viral suppression pillars, which is caused mainly by the low viral load completion rate of 46%. Clinicians can easily improve this pillar of the cascade through conducting a Bottleneck Analysis. An example of identifying and analysing the challenges raises questions, such as whether (i) the clinicians are doing the viral load tests at the appropriate interval by identifying cohorts that are due for viral loads through TIER.Net and recalling the clients, or (ii) recording the tests in the correct clinical records and registers, or (iii) capturing the results appropriately in clinical charts, client files or into TIER.Net. Should the clients not arrive for their blood test, trace them and offer Enhanced Adherence Counselling, thereby addressing possible barriers to treatment adherence. Further monitoring must follow.

Following the '3-feet approach'[c] of developing the DIPs, the facility team of clinicians, management and support staff, together with community-based stakeholders, identify the bottlenecks that have contributed to the gaps. A Facility 90-90-90 Plan is developed with clinicians who contribute directly to the cascade at each client encounter so as to achieve the 90-90-90 targets at facility level.

[c] '3-feet laboratories' refers to planning close to where services are delivered. The Phakisa Lab was held in South Africa and was based on the methodology used for the Government of Malaysia's 'Big Fast Results' initiative.

SECTION B:
Comprehensive client care package

Primary health care approach and integration of services

In keeping with the 90-90-90 approach, it is important that clients receive holistic care when entering the health facility. In this way, all their underlying conditions can be diagnosed and the best management can be offered for optimal results. The primary health care (PHC) approach advocates that all services be accessible under one roof. This has manifested in the Integrated Clinical Services Model (ICSM) currently being implemented as part of the Ideal Clinic Realisation and Maintenance (ICRM) programme.

Figure 4 (female) and Figure 5 (male) illustrate the holistic service package that should be offered to an adult. This means that when an adult enters any consultation room in a facility, all the service components illustrated in the diagram must be offered during the same consultation.

Figure 4: *Adult female integrated service package*

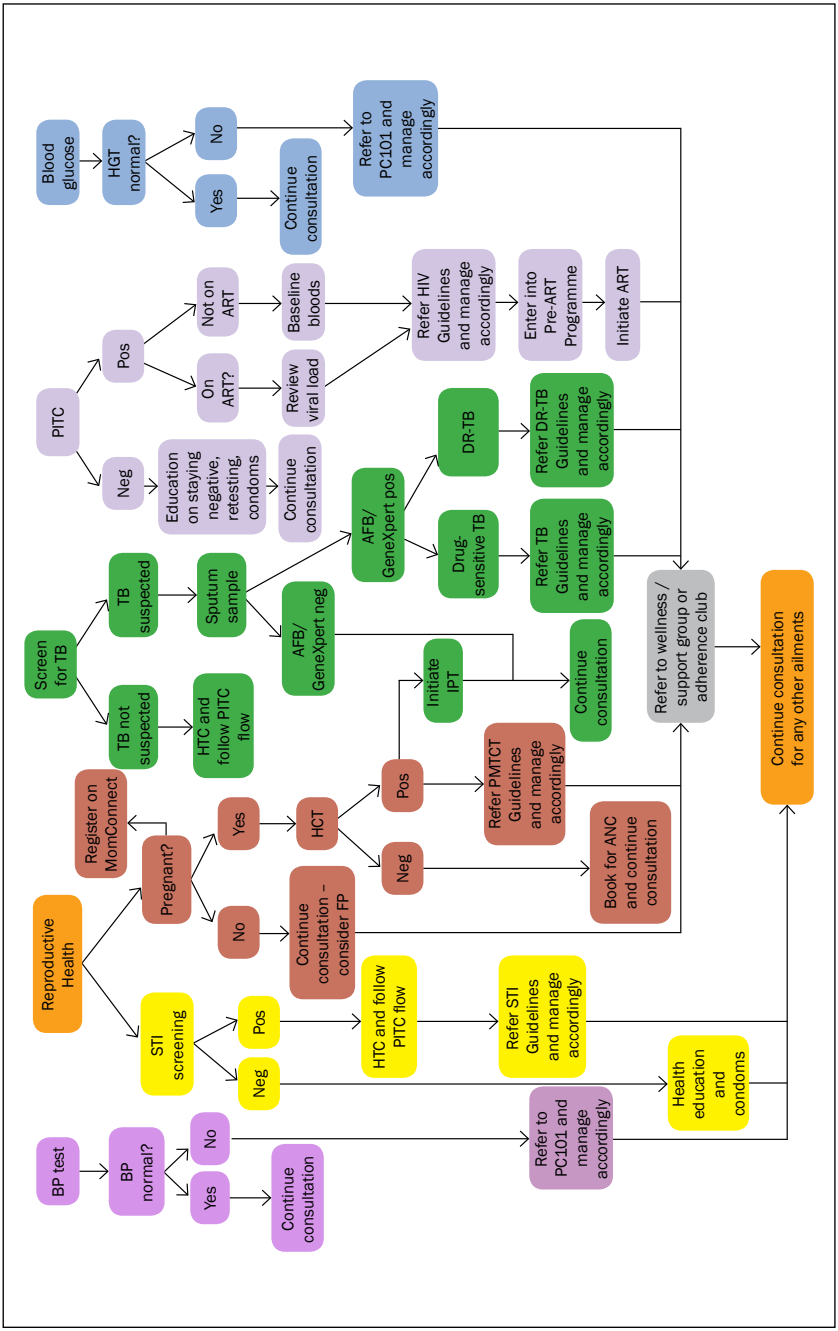
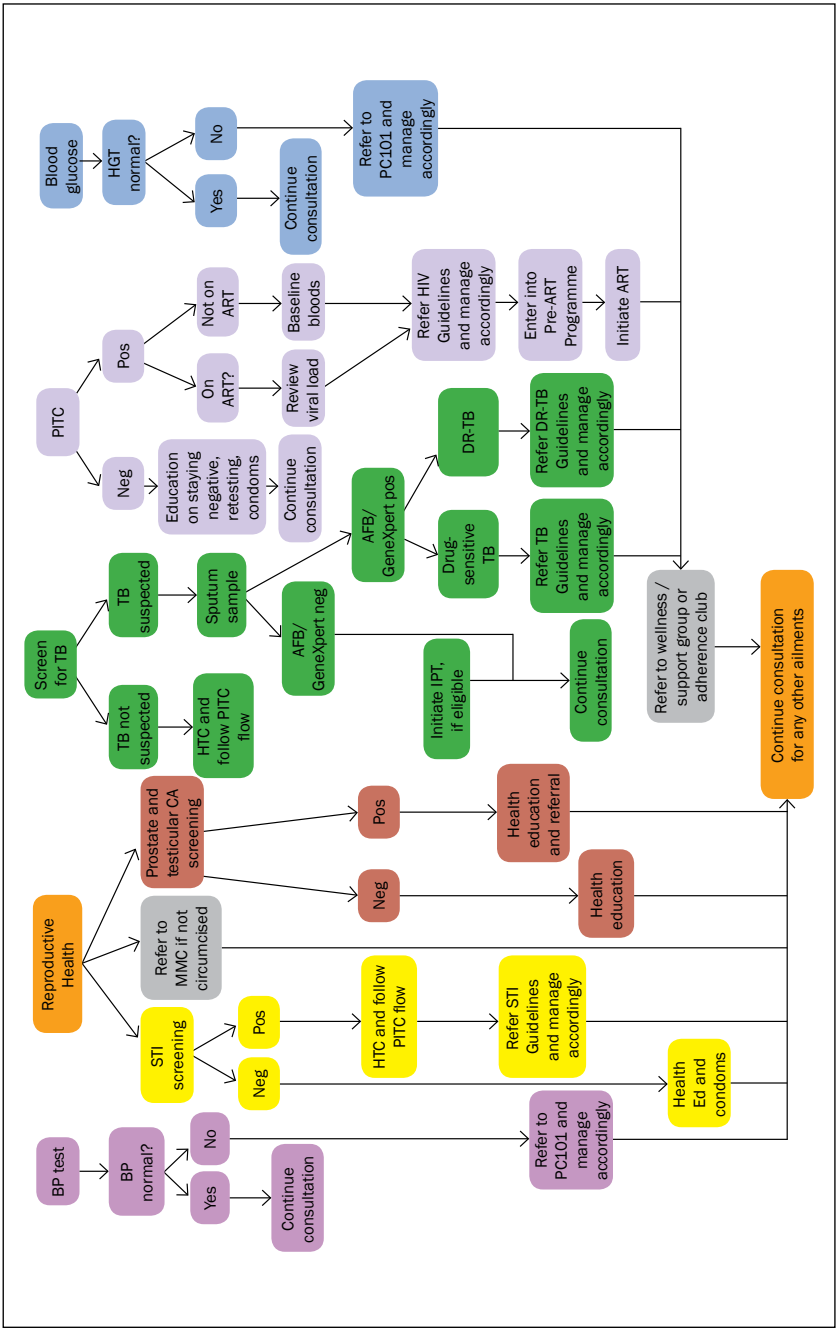
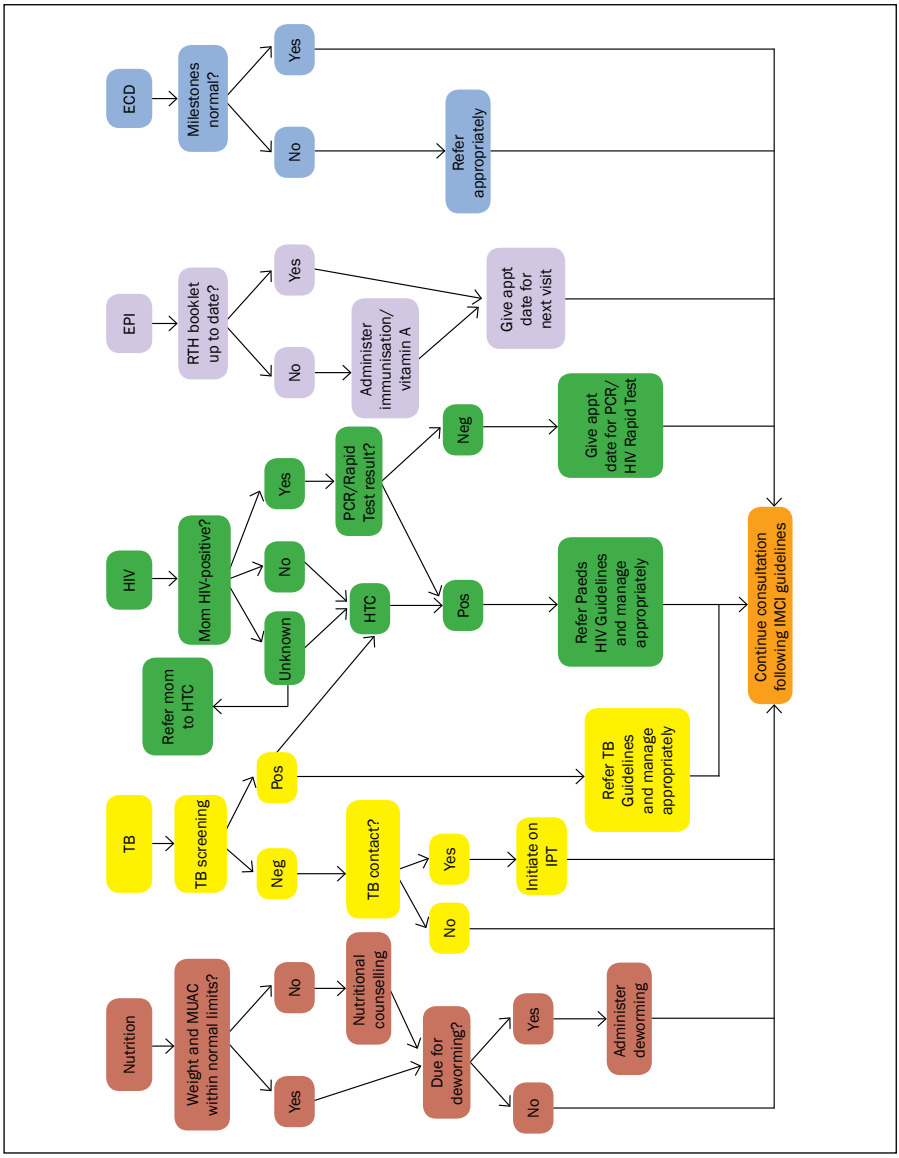


Figure 5: *Adult male integrated service package*



Similarly, a holistic approach should be available for children to avoid missing opportunities that may be vital to the health of the client. In Figure 6, the minimum package of child health services is illustrated.

Figure 6: *Child health integrated service package*



Community linkage to care

Appropriate linkage and referral for the pregnant mother are essential for ensuring a healthy mother and baby at the end of the pregnancy. The common barriers to effective care include travelling long distances to the clinic, long waiting times at the clinic, myths about presenting one's pregnancy early, inability to take time off work, inadequate understanding of the treatment plan, and fear of stigma and discrimination. Effective linking of all antenatal clients to prevention, treatment and care services allows them the opportunity to protect their unborn babies.

It then becomes critical that the healthcare provider identifies relevant services, refers as necessary, and clearly outlines pathways of linkages to care and support for clients.

Figure 7: *Community linkages to care*

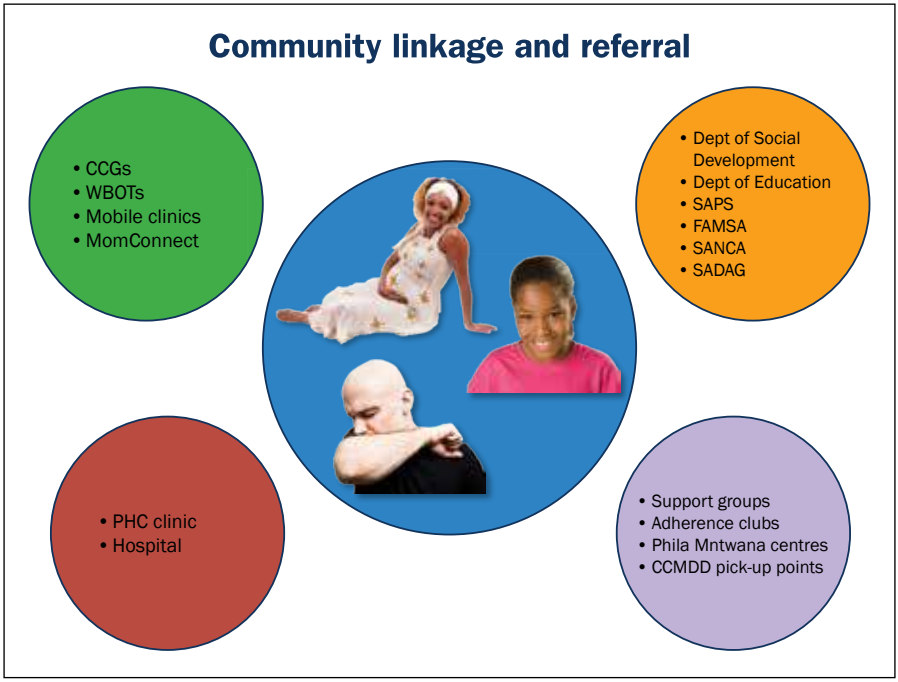


Figure 7 provides examples of where a client can be referred to for support, depending on their needs. Clients on chronic medications can be

referred to support groups or adherence clubs and, once stable, decanted to collect medication from an external pick-up point. Those requiring a higher level of care may be referred to another PHC centre or hospital. Pregnant women should be registered on the MomConnect system and linked to a community centre like the Phila Mntwana Centres in KwaZulu-Natal Province (KZN). Clients can be linked to a community caregiver (CCG) for ongoing monitoring or directly observed treatment (DOT).

SECTION C
Policy framework

There are five overarching policies that determine the management of HIV and TB clients. Any treatment or intervention offered to clients should fall within these prescribed guidelines.

Figure 8: *South African guiding policies on HIV and TB management*

Electronic copies of these policies can be downloaded using the following links:

- *National consolidated guidelines for the prevention of mother-to-child transmission of HIV (PMTCT) and the management of HIV in children, adolescents and adults (April 2015)*
  URL: https://aidsfree.usaid.gov/sites/default/files/tx_south-africa_pmtct_2015.pdf [downloaded 18 January 2017]
  URL: http://www.hst.org.za/publications/national-consolidated-guidelines-pmtct-and-management-hiv-children-adolescents-and-adul [downloaded 17 January 2017]

- *National HIV Testing Services: Policy 2016*
  URL: http://aviwe.wrhi.ac.za/national-hiv-testing-services-policy/ [downloaded 17 January 2017]
  URL: www.hst.org.za/publications/national-hiv-testing-services-policy [downloaded 17 January 2017]

- *National Tuberculosis Management Guidelines 2014*
  URL: http://www.health.gov.za/index.php/hiv-aids-tb-and-maternal-and-child-health/category/162-tbcontrolandmanagement (National TB Management Guidelines2014) [downloaded 18 January 2017]
  URL: http://www.hst.org.za/publications/national-tuberculosis-management-guidelines-2014 [downloaded 17 January 2017]

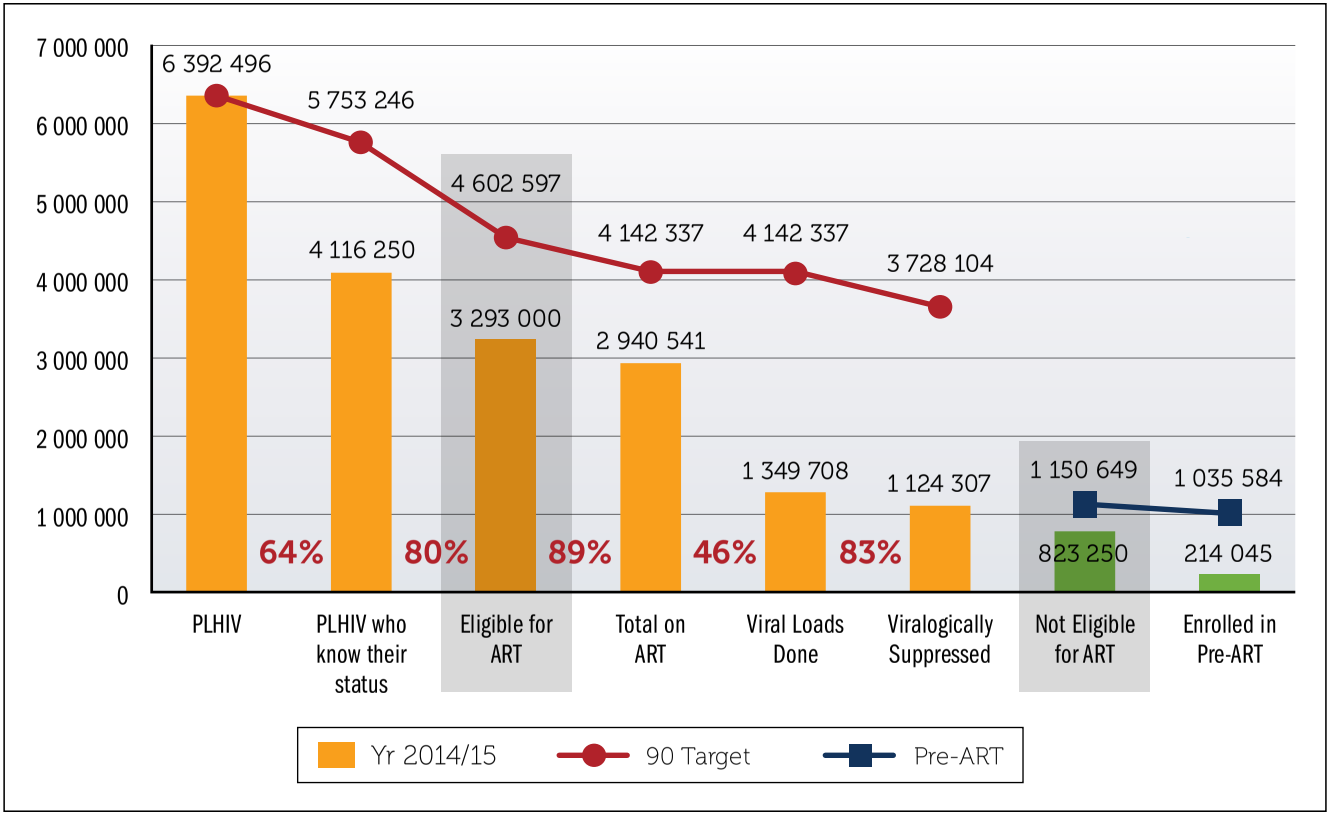
- *Multidrug-resistant tuberculosis – a policy framework for decentralised and deinstitutionalised management for South Africa (August 2011)*
  URL: http://www.tbfacts.org/wp-content/uploads/2015/08/SA-MDR-TB-Policy.pdf [downloaded 18 January 2017]
  URL: http://www.hst.org.za/publications/MDR-policy-decentralised-and-deinstitutionalise [downloaded 17 January 2017]

- *Adherence Guidelines for HIV, TB and NCDs (February 2016)*
  URL: http://www.nacosa.org.za/wp-content/uploads/2016/11/Integrated-Adherence-Guidelines-NDOH.pdf [downloaded 17 January 2017]
  URL: http://www.hst.org.za/publications/adherence-guidelines-hiv-tb-and-ncds [downloaded 17 January 2017]

SECTION D
Managing clients with HIV

The entry point into the 90-90-90 cascade of treatment, care and support for HIV is the HIV Testing Services (HTS), which contribute to the first '90', namely 90% of PLHIV knowing their status.

Figure 9: *HIV care and treatment cascade for adults (15 years and older)*



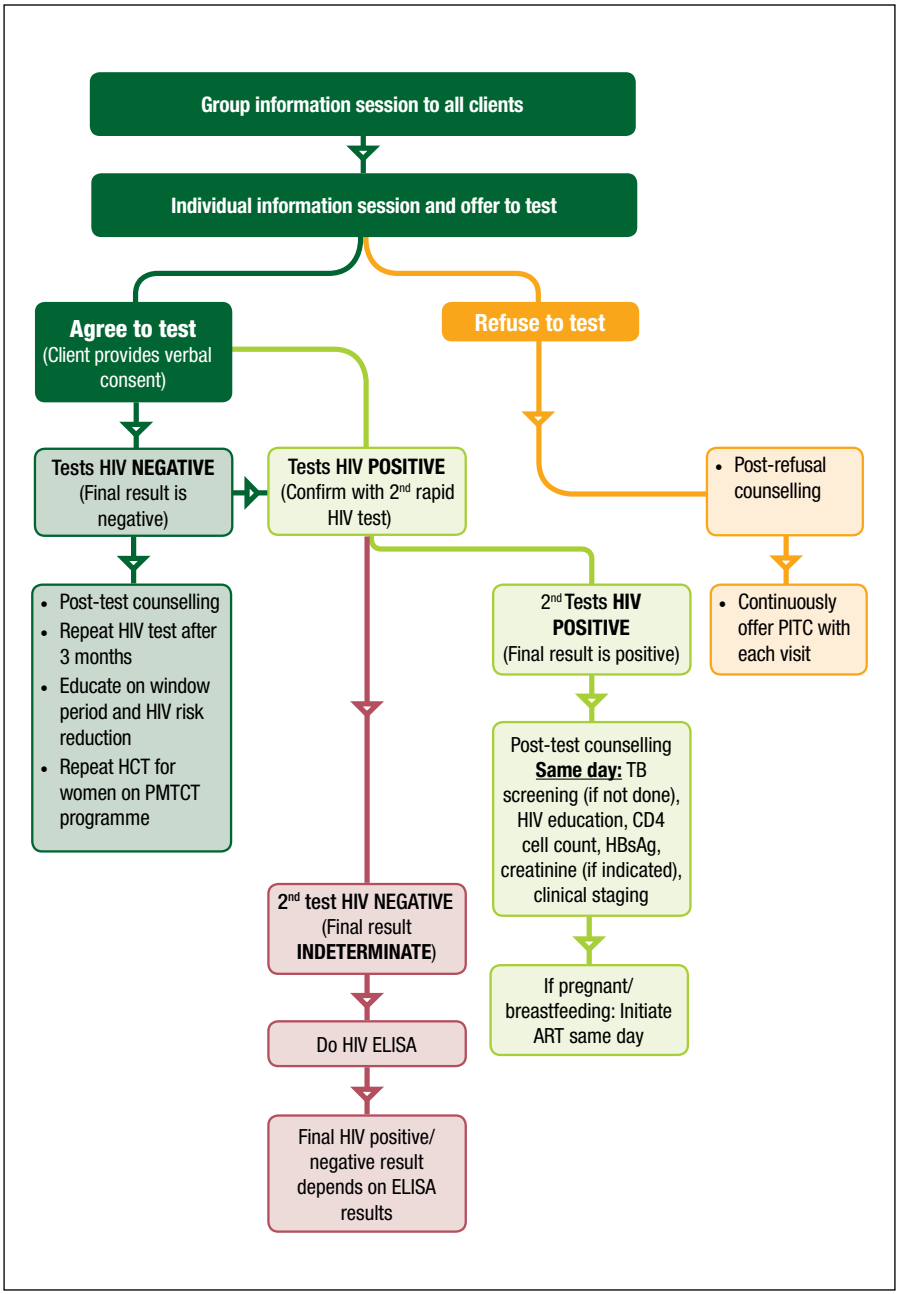
Source: National DHIS for the period April 2014 to March 2015

This section outlines the management of different clients within the PHC setting, focusing on HIV specifically, but referring readers to the TB management section (see section F) for targeted TB management in the case of co-morbidity.

HIV testing services (HTS)

HIV testing entails a comprehensive package of services that includes pre-test information, obtaining individual informed consent, screening for TB, sexually transmitted infections (STIs) and non-communicable diseases (NCDs), and HIV testing and post-test counselling. The intention is to ensure zero misdiagnoses, correct results through quality assurance, and linkage with laboratory services. The services also include linkage to appropriate prevention, treatment, care and support services, as well as appropriate recording and reporting. The algorithm in Figure 10 illustrates these services.

Figure 10: *Algorithm for HTS consultation, including community linkages*



Clinical management of adults

Step-by-step process for the HTS consultation, including community linkages

Procedure for HIV testing services (adapted from the *2015 HTS Policy and Guidelines*)

All adult and adolescent clients should be offered a package of HTS through the following steps, which must be undertaken by the clinician:

- Confirm that the following information was covered with the client during the pre-test information session:
  - the benefits of HIV testing
  - the meaning of an HIV-positive and an HIV-negative diagnosis
  - services – including ART provision – that are available should the client test positive
  - the potential for incorrect results if a person who is already on ART is tested
  - a brief description of prevention options and encouragement of partner testing
  - the confidentiality of the test result and any other information shared by the client
  - the right to refuse to be tested and that declining testing will not affect the client's access to HIV services or general medical care
  - potential risks of testing, particularly in instances where there are legal implications for those who test positive and for those whose sexual or other behaviour is stigmatised
- Screen the client for TB, hypertension, diabetes and other non-communicable diseases

- Weigh the client and calculate the Body Mass Index (BMI)
- Record all the information in the client's clinical record
- Record all the information in the appropriate register
- Obtain informed consent for HIV testing from the client
- Perform the HIV test according to the Rapid Test algorithm
- Inform the client of the HIV test results that are non-reactive
- Record the HIV test results as negative in the client's clinical chart
- Confirm the risk of exposure and advise the client according to the Re-testing Guidelines
- Emphasise the importance of remaining HIV-negative
- Perform a confirmatory test if the HIV Rapid Test is reactive, as per algorithm in Figure 11
- If the confirmatory test is positive, inform the client that the HIV test results are positive, and then counsel and support
- Manage discordant HIV test results in accordance with the guidelines
- Obtain a blood specimen for an ELISA test, and manage and record the results of the ELISA test that are reactive as HIV-positive
- Manage and record the results of the ELISA test that are non-reactive as negative
- Manage and record the discordant results of the ELISA test as per the guidelines
- Offer post-test counselling according to the HIV test results
- Discuss risk-reduction strategies with the client
- Discuss the benefits of disclosure
- Offer condoms to the client and demonstrate to the client how to use a condom.

In the case of a confirmed positive HIV result, obtain blood specimens for baseline monitoring of the CD4 count (which will still be done, as it is the key factor in determining the need to initiate Opportunistic Infection prophylaxis at CD4 ≤200, identify eligibility for CrAg at CD4 ≤100, prioritisation at CD4 ≤350 and fast-tracking at CD4 ≤200).[d] Willingness and readiness to start ART shall be assessed and clients who are not ready after assessment shall be kept in the Wellness Programme; continuous counselling on the importance of early treatment and scheduled CD4 as per the South African clinical guidelines shall continue at every visit.

Where testing services do not initiate on ART, use the following referral procedures:

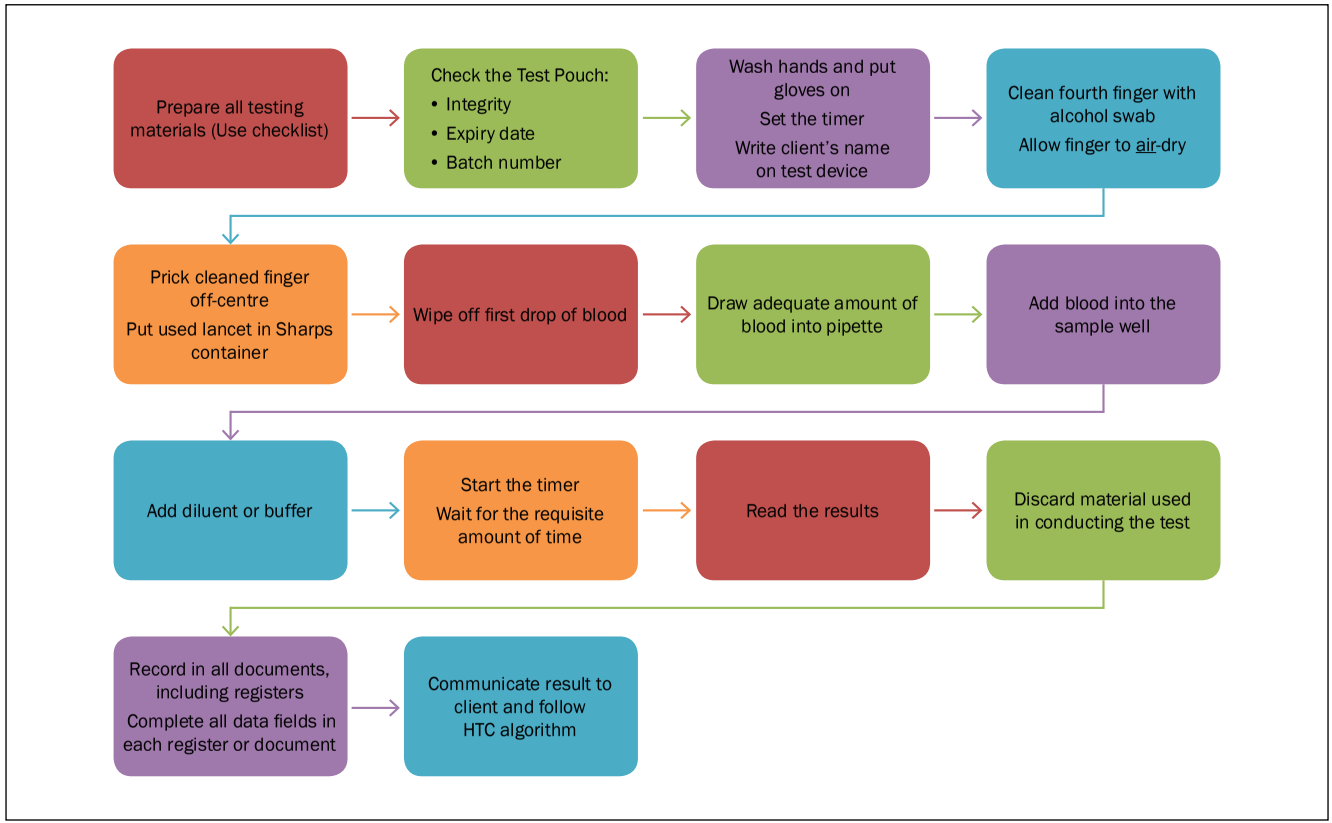
- Link the client through active referral, through an escort, to the next service for the additional tests and ART initiation
- Secure an appointment for the client before referring him/her to the next facility for further management, using the referral form
- Complete the referral form to refer the client
- Follow up on the referred client to confirm his or her arrival at the service to which he or she was referred
- On receipt of the back-referral slip, attach it to the appropriate document.

The clinician should remember to offer HIV testing services in an expanded and rights-based manner, such that no-one is left behind, especially those clients from priority populations – there should be **no missed opportunities or misdiagnoses**. This can only be achieved through high-quality testing and retesting in line with the clinical guidelines.

The algorithm in Figure 11 depicts the steps to follow when performing the HIV Rapid Test.

[d] Drawn from the South African National Department of Health Circular dated 22 August 2016: Implementation of the Universal Test and Treat strategy for HIV-positive clients and differentiated care for stable clients

Figure 11: *HIV Testing Services (HTS) Rapid Test algorithm*



Source: HTS Guidelines 2016

Checklist to help the clinician remember the important steps

The checklist in Table 1 will assist the clinician in following the important steps for providing HTS. The checklist can be used for peer review, as well as for supportive supervision by the Facility Manager.

Table 1: *HIV testing services (HTS) checklist*

(Mark the appropriate column with an X)

Key area	Item	Yes	No
Pre-test information	Did you explain HIV infection to the client?		
	Did you explain modes of HIV transmission?		
	Did you ensure confidentiality in testing?		
	Did you inform the client about his/her rights regarding HTS?		
	Did you explain the meaning of a negative HIV test?		
	Did you explain the meaning a positive HIV test?		
	Did you explain the availability of effective therapy?		
	Did you discuss the benefits of HIV testing?		
	Did you explain the meaning of an HIV-positive and an HIV-negative diagnosis?		
	Did you discuss services – including ART provision – that are available should the client test positive?		
	Did you explain the potential for incorrect results if a person who is already on ART is tested?		
	Did you give a brief description of prevention options and encouragement of partner testing?		

Key area	Item	Yes	No
	Did you explain the confidentiality of the test result and any other information shared by the client?		
	Did you discuss the right to refuse to be tested and that declining testing will not affect the client's access to HIV services or general medical care?		
	Did you explain the potential risks of testing, particularly in instances where there are legal implications for those who test positive and for those whose sexual or other behaviour is stigmatised?		
Screening	Did you screen the client for TB?		
	Did you screen the client for hypertension?		
	Did you screen the client for diabetes mellitus?		
	Did you weigh the client?		
	Did you record the information in the client's clinical record?		
Informed consent	Did you obtain informed consent for HIV testing from the client?		

Key area	Item	Yes	No
HIV testing	Did you conduct the HIV testing according to the Rapid Test algorithm?		
	Did you find the HIV test results to be non-reactive?		
	Did you record the HIV test results as 'negative' in the client's clinical chart?		
	Did you find the confirmatory HIV test results to be reactive?		
	Did you record the HIV test results as 'positive' in the client's clinical chart?		
	Did you find the HIV test results to be discordant?		
	Did you obtain a blood specimen for an ELISA test?		
	Did you receive reactive results from the ELISA test?		
	Did you record these results as 'positive'?		
	Did you receive non-reactive results from the ELISA test?		
	Did you record these results as 'negative'?		
	Did you receive discordant results from the ELISA test?		
	Did you record these results as 'discordant'?		
	Did you repeat the test?		
	Are both results non-reactive?		
	Did you record the results as negative?		
	Are both results positive?		
	Did you record the results as positive?		

Key area	Item	Yes	No
Post-test counselling	Did you offer post-test counselling according to the HIV test results?		
	Did you discuss risk-reduction strategies with the client?		
	Did you offer condoms to the client?		
	Did you demonstrate how to use a condom to the client?		
	Did you offer an appointment for retesting to the client?		
HIV-positive client management	Did you manage the HIV-positive client according to the latest guidelines in terms of pre-ART services?		
	Did you link the client actively to the next service through an escort (active referral)?		
	Did you secure an appointment for the client before referring him/her to the next facility for further management?		
	Did you use the referral form to refer the client?		
	Did you follow up on the referred client to confirm his or her arrival at the service to which he or she was referred?		
	Did you attach the back-referral slip to the appropriate document?		
	Did you link the client to the appropriate support group?		

Quality assurance for HIV rapid testing

All clinicians must ensure quality assurance and quality control for HIV rapid testing at all testing points. The aim is to ensure that that the final HIV test results are accurate and correct.

The clinician's approach should be to ensure informed consent, counselling, confidentiality, correct test results, and connection to appropriate prevention, treatment, care and support services (the 5 Cs) (*HTS Guidelines 2016*).

Checklist for HIV Rapid Test quality assurance

In Table 2, indicate whether quality was assured during the performance of the HIV Rapid Test.

Table 2: *HIV Rapid Test quality assurance checklist*

(Mark the appropriate column with an X)

Key area	Item	Yes	No
Preparation	Did you prepare all the equipment for the HIV Rapid Test?		
	Did you prepare the working space where you would conduct the HIV Rapid Test?		
	Did you prepare the client for the HIV Rapid Test?		
	Did you wash your hands?		
	Did you put on a new, clean set of gloves?		
	Did you read the instructions in the test package insert?		
	Did you check the expiry date of the test kit?		
	Did you check the batch number of the test kit?		
	Did you set the timer?		
	Did you write the name of the client on the HIV test device?		

Key area	Item	Yes	No
Conducting the test	Did you select the most appropriate finger to prick?		
	Did you allow the finger to air-dry after cleaning with an alcohol swab?		
	Did you collect enough blood for the test?		
	Did you dispense enough buffer into the well of the test device?		
	Did you wait for the full length of time to confirm the test results?		
	Did you follow the testing algorithm in conducting the test?		
	Did you record the results in all the required documents (clinical chart and register) with no blank spaces left?		
Post-test counselling	Did you provide appropriate post-test counselling to the client?		
	Did you provide information on retesting based on the risk profile of the client?		
	Did you provide information on wellness, peer support and education in accordance with the guidelines?		
	Did you link the client to an appropriate service?		

HIV retesting

Clients should be offered retesting as stipulated in the 2016 *HTS Policy and Guidelines*. Table 3 guides the clinician on which clients to test and when to retest them initially and in the future.

Table 3: *HIV retesting guide*

Who	When to retest	Future retesting
Adolescents and young adults	Every six to 12 months if sexually active	More frequently, depending exposure
If exposed to HIV (adults)	Immediately	After six weeks (window period), annually or more frequently, based on exposure
Known HIV-positive partner	At six weeks post exposure	Annually or more frequently, depending on exposure
Unknown HIV status of partner	At six weeks post exposure	Annually or more frequently, depending on exposure
Post sexual violence and rape	At six weeks	Annually or more frequently, based on exposure
Occupational exposure	At six weeks post exposure	Annually or more frequently, depending on exposure
Sex workers	At six weeks post exposure	Every three months, based on exposure
Transgender people and men who have sex with men (MSM)	At six weeks post exposure	Every three months, based on exposure

Source: HTS Policy and Guidelines 2016

The checklist in Table 4 assists a clinician to ensure that a comprehensive retesting service is provided with each HIV retest.

Table 4: *HIV retesting quality assurance checklist*

(Mark the appropriate column with an X)

Key area	Item	Yes	No
Pre-test information	Did you explain about the need for retesting based on risk?		
	Did you explain the modes of HIV transmission?		
	Did you discuss the risk-reduction strategies?		
Screening and history-taking	Did you screen the client for TB?		
	Did you screen the client for hypertension?		
	Did you screen the client for diabetes mellitus?		
	Did you screen the client for STIs?		
	Did you obtain a history from the client regarding occupational exposure?		
	Did you obtain a history from the client about post-sexual violence and/or rape?		
	Did you obtain a history from the client regarding having a known HIV-positive partner?		
	Did you check with the client their risk of exposure from a partner whose HIV status is unknown?		
	Did you confirm the status of the client in terms of being part of a key population, e.g. sex worker, MSM, transgender people, etc.?		
	Did you weigh the client?		
	Did you record the information in the client's clinical record?		
Informed consent	Did you obtain informed consent for HIV testing from the client?		

Key area	Item	Yes	No
HIV testing	Did you conduct the HIV retest according to the Rapid Test algorithm?		
	Did you manage the client based on the test results according to the clinical guidelines?		
Post-test counselling	Did you offer post-test counselling according to the HIV test results?		
	Did you discuss risk-reduction strategies with the client?		
	Did you offer condoms to the client?		
	Did you demonstrate to the client how to use a condom?		
	Did you offer the client an appointment for retesting?		
HIV-positive client management	Did you manage the HIV-positive client according to the latest guidelines in terms of pre-ART services?		
	Did you link the client actively to the next service, through an escort (active referral)?		
	Did you secure an appointment for the client before referring him or her to the next facility for further management?		
	Did you use the referral form to refer the client?		
	Did you follow up on the referred client to confirm his or her arrival at the service to which he or she was referred?		
	Did you attach the back-referral slip to the appropriate document?		
	Did you link the client to the appropriate support group?		

Linkages to care, treatment and support

It is important to remember that according to the HTS Guidelines, the last critical step in HIV testing is the linkage of every tested client to care, treatment and support. The clinician should follow the steps listed hereunder for the different categories of client:

HIV-negative clients:

- Retest and screen periodically
- Promote self-care and risk reduction
- Provide information and counselling on: how to prevent HIV, STIs, TB and unwanted/unplanned pregnancy; condom availability and use; and medical male circumcision (MMC)
- Discuss information on health and wellness
- Encourage the client to develop and follow an individualised care plan.

Wellness Programme (for HIV-positive clients)

With effect from 1 September 2016, the National DoH Universal Test and Treat (UTT) policy stipulates that all HIV-positive clients, irrespective of CD4 count, are eligible for initiation on ART. The following 'readiness' criteria to start clients on lifelong ART apply:

- All HIV-positive children, adolescents and adults regardless of CD4 count will be offered ART treatment, prioritising those with CD4 ≤350.
- Clients in the Pre-ART and Wellness Programme shall be considered for UTT.
- Willingness and readiness to start ART shall be assessed and clients who are not ready after assessment shall be kept in the Wellness Programme and continuous counselling on the importance of early

treatment and scheduled CD4, as per the South African clinical guidelines, shall continue at every visit.

- Baseline monitoring of CD4 count will still be done as it is the key factor in determining the need to initiate Opportunistic Infection prophylaxis at CD4 ≤200, identify eligibility for CrAg at CD4 ≤100, prioritisation at CD4 ≤350 and fast tracking at CD4 ≤200.

Prior to ART initiation, clients who have been diagnosed as HIV-positive must be linked to a Wellness Programme. The package should include:

- Support for disclosure
- Information on STIs, HIV transmission, risk reduction, reproductive health, self-care, nutrition and healthy lifestyle
- TB screening, clinical staging and initiation on isoniazid (INH) prophylaxis (IPT) if eligible, CD4 count and Pap smear
- Management of non-communicable diseases.

Recording and reporting

Rationalised registers have been implemented in all PHC facilities to allow for complete and accurate recording of client data. The client's data should be recorded in the following places:

- Comprehensive PHC Tick Register
- TIER.Net
- TB Register
- HTC Register

Data recorded in these must be collated daily using the weekly tally and summarised into the weekly figure, which will then be added to the monthly total. This must then be transcribed from the Weekly Tally Book into the Monthly Tally Notepad, which is sent to the district or sub-district

offices for capture into the District Health Information System (DHIS).

Clinical client information must be recorded on the integrated facility-held client record. The ART clinical stationery must be attached to the client record.

Any of the data elements in Table 5 may be applicable to adult clients. Ensure that the client is recorded under all relevant data elements in the registers.

Table 5: *NIDS data elements applicable to HTS in adult clients*

Data element	Definition
HIV test client 15-49 years (excl. ANC)	Any client aged 15-49 years who attends the facility for a HIV test and who, after receiving pre-test counselling, accepts a HIV test (excluding antenatal clients)
HIV test positive client 15-49 years (excl. ANC)	Client aged 15-49 years tested positive for HIV (excluding antenatal clients)
HIV test client 50 years and older (excl. ANC)	Client aged 50 years and older tested for HIV (excluding antenatal clients)
HIV test positive client 50 years and older (excl. ANC)	Client aged 50 years and older tested positive for HIV (excluding antenatal clients)
HIV-positive client screened for TB	HIV-positive clients who have been screened for TB after positive HIV test
HIV-positive client eligible for IPT	All HIV-positive clients eligible for Isoniazid preventive therapy (IPT). A client is eligible for IPT when they have screened negative for TB using the TB screening tool.
HIV-positive client initiated on IPT	All HIV-positive eligible clients started on Isoniazid preventive therapy (IPT) for the first time

ART initiation

Clinical management

The clinician should prepare the client to start ART through comprehensive counselling, which should cover the following:

- An assessment and discussion with the client on their readiness to start ART
- The client's critical role in the development of his/her comprehensive care plan
- An assessment of the client's mental health and nutritional status, issues of substance abuse, co-morbidities and possible drug interactions
- Psychosocial issues that may impact on the client's well-being and adherence
- Emphasis and counselling on risk reduction, using a combination of HIV prevention activities, including safe sex and the availability, access to and use of condoms
- The importance of adherence to the client's well-being, available support and combination prevention.[e] The benefits of adherence should be explained and emphasised before ART initiation and then periodically thereafter.
- The link between adherence, viral suppression and clinical outcomes should be explained such that clients can be active in their own care plans.

[e] Combination prevention includes behavioural interventions, biomedical programmes (condoms, HTC, PMTCT, STI, VMMC) and structural interventions (programmes to reduce stigma, income-generation projects).

Step-by-step process for the ART initiation consultation, including community linkages

The procedure for initiating HIV-positive clients on ART should be conducted according to the latest clinical guidelines and includes the steps (adapted from the *2015 Guidelines*) reflected in Table 6.

Table 6: *Procedure for ART initiation*

1	Provide pre- and post-test counselling, whether the client's results are HIV-positive or HIV-negative
2	Involve the client in the decision-making process of ART initiation and development of his/her care plan, including adherence to treatment, disclosure and support
3	Explain the entire treatment plan and follow-up visit schedules
4	Identify and address any possible barriers to linkage to care
5	Identify and address any possible barriers to treatment adherence
6	If there is a need for referral, make appointments with the required service unit or receiving institution and provide the client with the appointment date and a referral letter
7	Provide the client with the contact information for referral services
8	Use SMS technology to remind client of appointments
9	Obtain a comprehensive medical history: diabetes, heart/kidney disease, asthma, epilepsy, TB treatment, current medical problems, substance abuse
10	Assess the mental health status of the client
11	Assess the socio-economic status of the client
12	Conduct a risk assessment
13	Screen the client for TB, hypertension, diabetes mellitus and other chronic diseases
14	Screen for hepatitis B virus (HBV) (HBsAg)
15	Screen the client for sexually transmitted infections and syphilis

16	Screen for cryptococcus antigen (CrAg) if CD4 count is less than 100cell/ul
17	Screen for pregnancy or check on plan to conceive
18	Discuss and offer contraception or MMC to the client
19	Weigh the client and calculate the Body Mass Index (BMI) to determine which ART drugs to prescribe
20	Conduct a physical examination of the client, including cervical cancer screening
21	Conduct tests for creatinine, haemoglobin (Hb), full blood count (FBC), alanine aminotransferase (ALT), fasting cholesterol and triglycerides in line with ART regimen being considered
22	Obtain, consider, evaluate and use the results of the relevant laboratory tests to manage the client according to the guidelines
23	Confirm readiness to start ART per latest guidelines for ART initiation, e.g. WHO clinical staging, CD4 count, etc.
24	Initiate client on an ART regimen according to the guidelines
25	Promote prevention and support
26	Finalise the individualised care plan with the client, including preferred linkages
27	Provide a follow-up appointment date to the client
28	Record all activities undertaken during the consultation in the client's clinical record
29	Sign the clinical chart legibly
30	Record the required information in the appropriate register(s)

Timing of ART initiation (refer to 2015 Guidelines)

ART should be started as soon as the client is ready, and within at least two weeks of his/her CD4 count being tested.

- In TB co-infection, start with TB treatment first, followed by ART as soon as possible and within eight weeks

- If the CD4 count is <50 cells/µl, initiate ART within two weeks of starting TB treatment, when the client's symptoms are improving and TB treatment is tolerated If the CD4 count is >50 cells/µl, initiate ART within two to eight weeks of starting TB treatment
- In cryptococcal or TB meningitis, defer ART initiation for four to six weeks.

Immediate initiation

- All HIV-positive pregnant or breastfeeding women, as long as there is no active TB.

Fast-tracking (within seven days)

- Clients with CD4 <200 cells/µl
- HIV stage 4, even if the CD4 count is not yet available.

Treatment algorithm

ART initiation should be implemented with full consideration of the physical and psychosocial well-being of the clients. The contraindications of certain drug regimens must be taken into account. Table 7 reflects the first-line regimens for adolescents older than 15 years of age and adults.

Table 7: *ART regimens for adolescents and adults*

Population	Drug	Comments
Adolescents >15 years and weighing >40kg **Adults** **All TB co-infection** **All HBV co-infection**	TDF + 3TC (or FTC) + EFV provide as fixed-dose combination (FDC)	Replace EFV with NVP in clients: • With significant psychiatric co-morbidity or intolerance to EFV • Where the neuropsychiatric toxicity of EFV may impair daily functioning, e.g. night-shift workers

Population	Drug	Comments
Adults and adolescents on d4T	Change d4T to TDF (no client must be on d4T)	Switch to tenofovir disoproxil fumarate (TDF) if virally suppressed and the client has normal creatinine clearance, even if d4T is well tolerated If VL >1000 copies/mL, manage as treatment failure and consider switching to second-line regimen
Adolescents <15 years or weight <40kg	ABC + 3TC + EFV	If adolescent weight is <40kg, align with paediatric regimen
Contraindications	**Substitution drugs**	**Comments**
Contraindication to EFV: • **Significant psychiatric co-morbidity** • **Intolerance of EFV** • **Impairment of daily function (shift workers)**	TDF + FTC (or 3TC) + NVP or LPV/r	If CD4 <250 females and <400 males, give NVP 200mg daily for 2 weeks, then 200mg BD; CD4 ≥250 females and ≥400 males, use LPV/r 2 tablets 12-hourly
TDF contraindication: • **Creatinine clearance of <50 mL/min**	ABC+ 3TC + EFV (or NVP)	Renal disease or the use of other nephrotoxic drugs, e.g. aminoglycosides MDR treatment

Source: 2015 Guidelines

Baseline and routine clinical and laboratory assessment for older adolescents and adults should be done with appropriate interventions being implemented, e.g. when the client has co-morbidities, needs fast-tracking, etc. The clinician should ensure that all laboratory results are recorded and attached to the client's clinical chart. The results should be recorded in the appropriate register so as to be captured into the appropriate system, such as TIER.Net.

Table 8: *Standardised baseline monitoring (all adults/adolescents, pregnant and breastfeeding women) on diagnosis*

Phase of HIV management	
HIV diagnosis	**Purpose**
WHO clinical staging if HIV-positive	To assess readiness to start for ART and timing of initiation
CD4 count	To identify eligibility for co-trimoxazole (CD4 <200/µl) To identify eligibility for CrAg or CLAT (CD4 <100/µl)
Assessment of hypertension and diabetes with blood pressure and urine glycosuria	To identify any concomitant chronic diseases
Screen for TB symptoms using the TB screening tool	To identify those suspected of TB and refer them for investigation and to assess eligibility for INH
Screen for HBV (HBsAg)	To identify those co-infected with HBV so that they can be initiated on ART regardless of CD4 count
Cryptococcus antigen (CrAg) test if CD4 <100 cells/µl	To assess whether there is disseminated cryptococcal infection and if fluconazole treatment/ prophylaxis is indicated
Do Hb or FBC **if requires AZT creatinine** **if requires TDF** **Do ALT if requires NVP**	 To detect anaemia or neutropenia To assess renal sufficiency To exclude liver dysfunction
Fasting cholesterol and triglycerides if requires LPV/r	To identify risk of LPV/r-related hyperlipidaemia. If above 6 mml/L, consider (ATV/r) instead of LPV/r (if available)

Source: adapted from the 2015 Guidelines

Table 9: *Standardised monitoring of clients on ART*

HIV management	
On ART	**Purpose**
Screen for TB symptoms at each visit	To identify TB/HIV co-infection
Do WHO clinical staging at every visit	To identify new opportunistic infections (OIs)
Ask about side effects at each visit	To identify ARV-related toxicity
Check CD4 count at 1 year on ART	To monitor immune response to ART
Check VL at month 6, month 12 on ART and then every 12 months	To identify treatment failures and problems with adherence
Check ALT if on NVP and develops rash or symptoms of hepatitis	To identify NVP toxicity
Check FBC at month 3 and 6 if on AZT and then every 12 months	To identify AZT toxicity
Check creatinine at month 3 and 6, month 12, then every 12 months if on TDF	To identify TDF toxicity
Check fasting cholesterol and triglycerides at month 3 if on LPV/r	To identify LPV/r toxicity

Source: 2015 Guidelines

Table 10: *ART initiation checklist*

(Mark the appropriate column with an X)

Item	Yes	No
Did you provide pre- and post-test counselling, whether the client's results are HIV-positive or HIV-negative?		
At the time of HIV diagnosis, did you involve the client in the decision-making process of ART initiation?		
Did you explain the entire treatment plan and follow-up visit schedules?		
Did you identify and address any possible barriers to linkage to care?		
Did you make appointments directly with the receiving institution on behalf of the client and provide the client with the appointment date and a referral letter?		
Did you provide the client with the contact information for referral services?		
Did you use SMS technology to remind clients of appointments?		
Did you obtain a comprehensive medical history: diabetes, heart/kidney disease, asthma, epilepsy, TB treatment, current medical problems, and substance abuse?		
Did you assess the mental health status of the client?		
Did you assess the socio-economic status of the client?		
Did you conduct a risk assessment?		
Did you screen the client for TB?		
Did you screen the client for hypertension?		
Did you screen the client for diabetes mellitus?		
Did you screen the client for sexually transmitted infections?		
Did you discuss and offer contraception or MMC to the client?		

Item	Yes	No
Did you weigh the client?		
Did you calculate the BMI and manage the client as per the guideline?		
Did you conduct a physical examination of the client?		
Did you conduct cervical cancer screening?		
Did you obtain, consider, evaluate and use the results of the relevant laboratory tests?		
Did you confirm readiness as per guidelines for ART initiation?		
Did you initiate the client on ART in accordance with the guidelines?		
Did you discuss and promote adherence to treatment?		
Did you promote prevention and support?		
Did you discuss disclosure and support?		
Did you design an individualised care plan with the client?		
Did you discuss preferred linkages with the client?		
Did you provide a follow-up appointment date to the client?		
Did you record all activities undertaken during the consultation in the client's clinical record?		
Did you record the required information in the appropriate register(s)?		

Adherence

The aim of treatment adherence is >95% doses taken per client in order to ensure viral suppression, with its benefits as well as its impact on the epidemic. The clinician should ensure that the client understands that adherence includes the following:

- Taking ART and other treatment as prescribed
- Keeping to appointments – for referrals, further investigations, test results and support sessions, e.g. support group/adherence group sessions.

NB: Clients with <85% adherence must be identified **early** and the clinician must ensure timeous provision of appropriate intervention and support to prevent defaulting or eventual loss to follow-up.

Retention in care, treatment and support

Successful HIV outcomes require clinicians to be fully informed of the treatment, care and support network that they can utilise to ensure optimal adherence and retention rates for their clients. Various integrative strategies like the Ideal Clinic Realisation and Maintenance (ICRM), Central Chronic Medicine Dispensing and Distribution (CCMDD), the PHC Re-engineering Strategy, the decongestion strategy, and others should be employed to facilitate good adherence and reduced loss to follow-up.

Decanting of adherent and stable chronic patients has a twofold purpose: i) to decongest facilities to create space and time for newly diagnosed HIV-positive patients to be initiated on ART, and ii) rewarding the stable patients with a faster service and flexibility to choose their preferred service for medication collection from the following three facilitated options as reflected in the (2016) adherence guidelines for HIV, TB and NCDs:

1. Spaced and Fast-lane Appointment System (also known as ICDM);
2. Adherence Clubs (AC); or

3. Central Chronic Medication Dispensing and Distribution (CCMDD).

Figure 7 (Community linkages to care) illustrates the requisite integrated model for clients that facilitates optimal linkages, adherence and retention in care.

Stable and adherent clients can be linked as follows through *active referral*:

- Intra-facility linkage: from one clinician to another service point within the facility, e.g. visiting doctor to a nutrition advisor. This could also include linkage to a Facility-based Support Group or a Spaced and Fast-lane Appointment System based on meeting the eligibility decanting criteria.

- Inter-facility linkage: From one facility to another health facility, e.g. from a community health centre to a local PHC clinic.

- Community-based services linkage: From a health facility to a community-based service, e.g. a CCMDD collection point, an adherence club, or a community-based organisation (CBO) managing orphaned and vulnerable children (OVC).

Tracking and tracing of clients is a system for communicating with clients who have not kept their appointment dates and should be part of client engagement by the clinician during the design of goals in the care plan. Reminder systems, e.g. SMS for the CCMDD, contribute to higher retention rates, while engagement of CCGs, Ward-based Outreach Teams (WBOTs), etc. facilitates early return to care of clients who have not kept appointments, or tracing of defaulters who are returned to care.

It is important to note that an effective linkage system is characterised by *a strong feedback loop* between and among the referring clinicians, the client and other team members. Such a system facilitates improved health outcomes, fewer clients dropping out or lost to follow-up, as well as client self-efficacy.

The clinician must be aware of the available client support network in

order to guide the client appropriately at each encounter. *Therefore, no client should be referred to 'their (nameless) local clinic' by any clinician.*

Viral load suppression

At each client encounter, the clinician should strive to:

- increase treatment success rates, i.e. to ensure 90% of clients on treatment with viral suppression (third 90); and
- reduce the risk of treatment failure (virological failure).

This can be achieved through the following activities by a clinician working as part of a broader multidisciplinary team:

- Effective holistic assessment, counselling, management and monitoring of all clients in their care
- Conducting viral load tests at the appropriate time and recording the test results in the clinical charts and registers as required
- Reducing the rate of attrition of clients between the second '90' (clients put on treatment and remaining on ART) and third '90' (virologically suppressed). Robust and sustained adherence counselling, as well as proper linkage of clients, can assist in this regard.

Early tracking and tracing of clients with missed appointments so that they can be brought back into the system. It is important for clinicians to familiarise themselves with and use tools like TIER.Net and ETR.Net to manage their HIV and TB programme.

Figure 12 *Intervention 1: Viral load support*

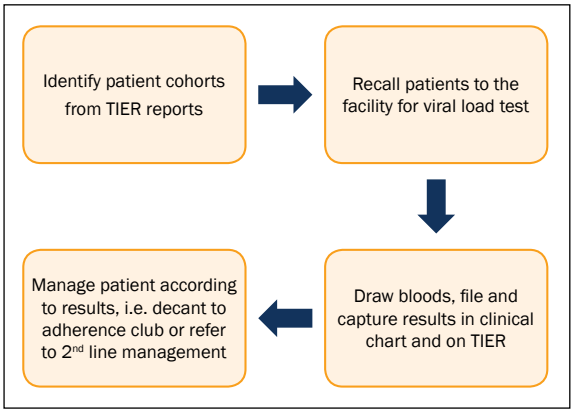


Table 11: *Viral load monitoring for clients on first-line regimen*

Viral load (VL)	Response
NOTE: Always check for hepatitis B before stopping TDF. If the client has chronic hepatitis B, stopping TDF may lead to a fatal hepatitis flare. If the client is hepatitis B-positive, TDF should be continued as a fourth drug in the second-line regimen.	
<400 copies/mL	• VL monitoring according to duration of ART and routine adherence support • Continue routine VL monitoring as it may be 12-monthly depending on how long client is on treatment
400–1 000 copies/mL	• Assess and manage adherence carefully • Repeat VL in 6 months and manage accordingly
>1 000 copies/mL	• Adherence assessment and intense adherence support • Repeat VL in 2 months and check HBV status and Hb, if not already done • If <1 000 copies/mL, repeat in six months and then reassess • If >1 000 copies/mL and adherence issues addressed, switch to second line therapy after checking HBV status and Hb

Source: Clinical Guidelines 2015

NB: Virological failure (VL>1000 copies/mL) on at least two occasions two months apart despite good adherence – refer to and manage according to the 2015 Guidelines.

Recording and reporting

The client's status should be recorded in the following places:

- Comprehensive PHC Tick Register
- ART clinical stationery for capture in TIER.Net

Figure 13 *Intervention 2: Backlog reduction*

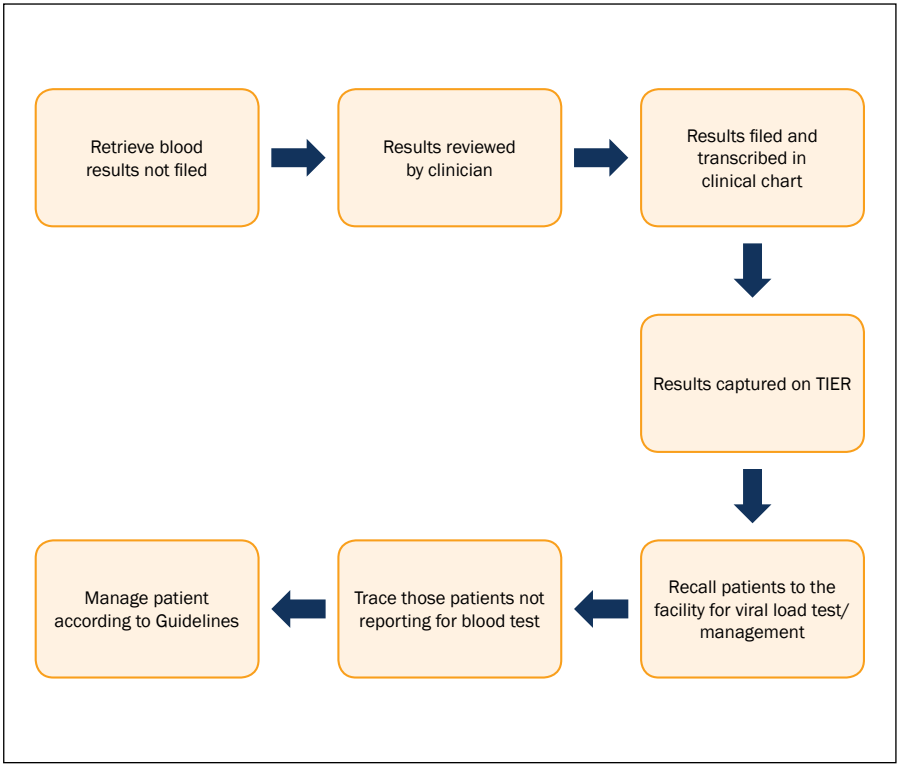


Table 12: *Viral load monitoring quality control checklist*

Key Area	Item	Yes	No
Viral load monitoring	Did you confirm the duration of ART treatment in order to determine whether a viral load test is due as per the guideline?		
	Did you discuss adherence to ART and the need for viral load monitoring?		
	Did you prepare the client for the viral load test?		
	Did you provide an appointment date for the client to return for his or her viral load test results?		
	Did you record in the clinical chart all required information on the viral load test done?		
	Did you record in the register all required information on the viral load test done?		
	Did you set up an appropriate reminder system for the client for their return date, e.g. SMS?		
	On return for the viral load test results, did you discuss the results with the client?		
	Did you manage the client according to the guidelines?		
	Did you attach and record the viral load test results in the client's clinical chart?		
	Did you record the viral load test results in the relevant register?		

Any of the data elements in Table 13 may be applicable to adult clients. Ensure that the client is recorded under all relevant data elements in the registers.

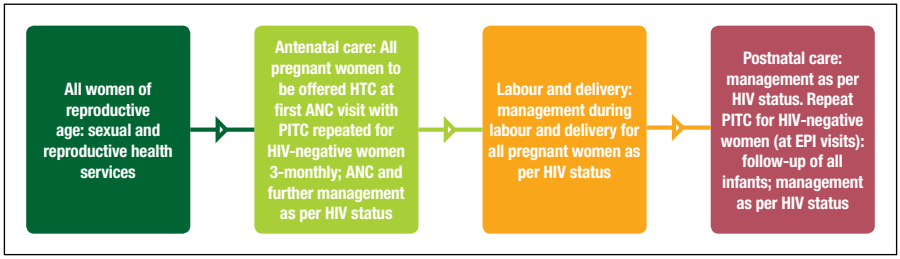
Table 13: *NIDS data elements application to adult ART initiation and viral load monitoring*

Data element	Definition
Adult ART initiation monitoring	
Adult CD4 below 100 cells/µl at start of ART	Adults initiated on ART with CD4 below 100 cells/µl at the time of starting ART and recorded in the ART monitoring tool
Adult CD4 100 to 199 cells/µl at start of ART	Adults initiated on ART with CD4 between 100 and 199 cells/µl at the time of starting ART and recorded in the ART monitoring tool
Adult CD4 200 to 350 cells/µl at start of ART	Adults initiated on ART with CD4 between 200 and 350 cells/µl at the time of starting ART and recorded in the ART monitoring tool
Adult CD4 done at start of ART	Adults with a CD4 count between 200 and 350 cells/µl at the time of starting ART and recorded in the ART monitoring tool
Adult ART-experienced started	Adults with treatment experience who started ART. A 'treatment-experienced client' is one who has received prior ART for more than 30 days.
Viral load monitoring	
Adult viral load done (VLD) at 6 months	Adults with VLD at interval after treatment started
Adult viral load suppressed (VLS) at 6 months	Adults with VLS of under 400 copies per millilitre (cps/mL) at interval after treatment started

SECTION E:
Maternal and child HIV services

This section deals with HIV services available to pregnant women, HIV-exposed infants and children under the age of 15 years.

The prevention of mother-to-child transmission (PMTCT) programme is focused on preventing a baby from being infected by the HIV-positive mother at any time during pregnancy, labour, childbirth or while breastfeeding. An effective and comprehensive approach to PMTCT requires that mothers and their children receive interventions that are built within a cascade during pregnancy, including HIV testing, use of ART, appropriate infant feeding, and laboratory blood tests.

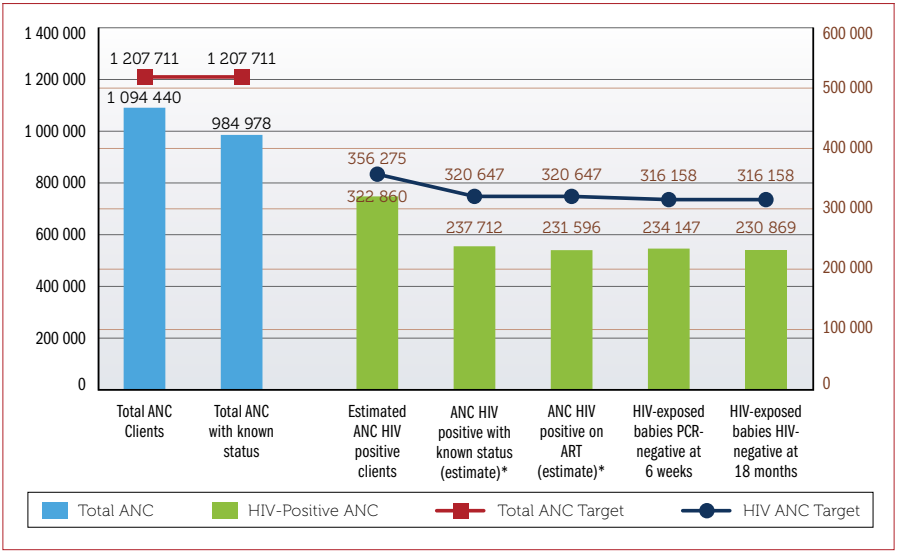


With the ultimate goal of eliminating mother-to-child transmission, it is important that the PMTCT programme is implemented efficiently by all clinicians. In any health programme, programme implementation is suboptimal in some areas and the 90-90-90 approach seeks to address these missed opportunities. The prevention of HIV transmission begins even before the woman falls pregnant because with provider-initiated testing and counselling (PITC), all clients are routinely offered HTC and screened for pregnancy, irrespective of their reason for accessing the facility. This allows women to be managed more effectively once the

pregnancy is confirmed. Early antenatal booking, ideally before 20 weeks, is encouraged to allow for effective viral load management during the pregnancy.

Figure 14 shows the discrepancies between the current cascade of PMTCT indicators and the national targets.

Figure 14: *PMTCT cascade*



Source: Based on National DHIS for the period April 2014 to March 2015

Managing the ANC client

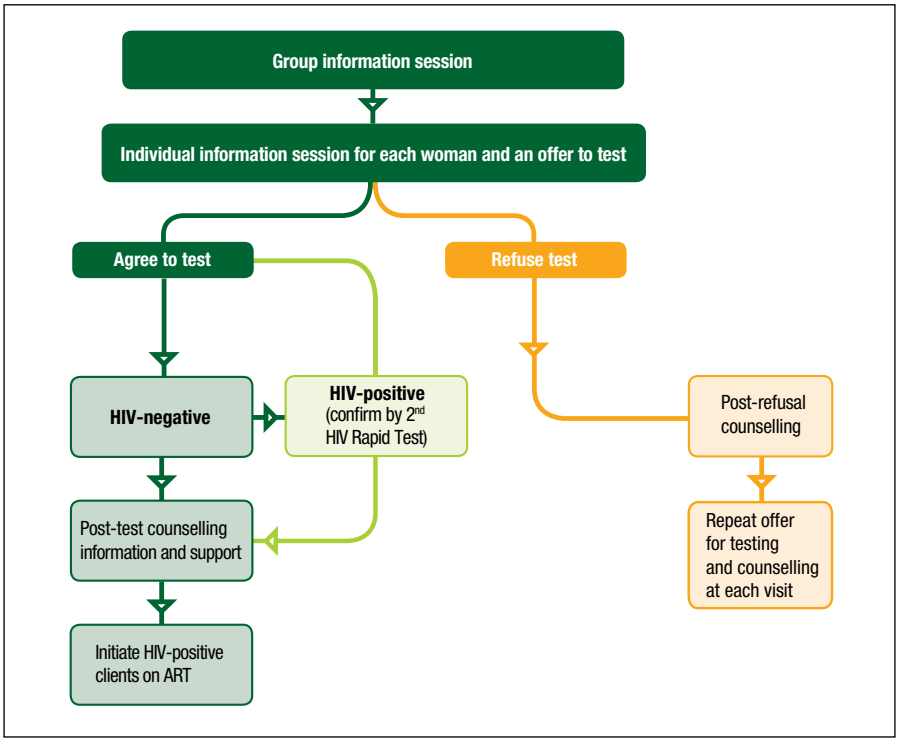
Maternal clinical management

Procedure at a health facility (taken from Guidelines)

All pregnant women should:

- book ANC services early (before 20 weeks) and receive appropriate interventions;
- receive routine antenatal care, including iron and folate supplementation;
- be offered HTC following the algorithm in Figure 15;

Figure 15: *Algorithm for HIV testing and counselling for pregnant women*



- be offered information on the availability of PMTCT interventions at all healthcare consultations (not only when visiting the antenatal clinic);
- be clinically staged and have a CD4 cell count taken on the same day as the HIV test is done, this preferably at the first antenatal care visit (or at the earliest opportunity thereafter);
- be screened for TB, in line with the Basic Antenatal Care (BANC) procedures;
- be screened and treated swiftly for syphilis and other STIs, in line with BANC procedures;
- receive a FDC at the first antenatal visit, whether newly diagnosed or known to be living with HIV but not on ART. If a FDC is contraindicated, these clients are considered to have high-risk pregnancies and require urgent referral to HIV/ART services. They should be given AZT 300mg twice daily until triple ART can be initiated;
- if HIV-positive, the clients should return one week after their initial ANC visit to follow up with their creatinine and CD4 cell count results and be managed accordingly;
- receive counselling on safer sex, family planning, postnatal contraception partner testing and routine cervical cancer screening;
- undergo nutritional assessment and be equipped with appropriate nutritional care and support; and
- be registered on the MomConnect system.

Pregnant women who test HIV-negative (sourced from *National HIV Guidelines*)

- All women who test HIV-negative should be offered repeat HIV testing every three months throughout pregnancy, at labour/

delivery, at the six-week Expanded Programme for Immunisation (EPI) visit and every three months throughout breastfeeding.

- All women should also be provided with a TB symptom screen with each visit.

- Post-test counselling of HIV-negative women should include:

    - » education on HIV risk-reduction behaviour and, where possible, this must involve partners or spouses, focusing mainly on how to maintain their HIV-negative status;

    - » encouragement on correct and consistent use of condoms, particularly during pregnancy; and

    - » provision of routine antenatal, labour/delivery, postnatal and breastfeeding care.

- All women should receive education and counselling about exclusive breastfeeding for the first six months, with complementary foods from six months.

- If the woman remains HIV-negative, she should be counselled to continue breastfeeding for up to 24 months.

Post-test counselling issues for HIV-positive women

- The post-test counselling session for women who are HIV-positive should have the following key components covered over a number of counselling sessions, which must not occur all on the same day:

    - » Information about antiretroviral treatment, the side effects of the medication, and where to report these

    - » Counselling on safe infant feeding options

    - » Counselling on exposure to stigma

    - » Information and counselling on contraception and future family planning

- » Information about safer sexual practices during pregnancy and in the long term
- » Information on and referral to support services, and about positive living
- » Information on disclosure
- » The relative importance of remaining in care at the same facility and delivering within the health facility to improve the continuity of care for mother and baby.

HIV-positive women should be offered counselling at every subsequent antenatal care visit, or earlier if the woman or counsellor deems this necessary, to assist her in coping with and thinking through the consequences of her diagnosis.

Clinical screening for tuberculosis

Co-infection with TB and HIV is common. Undetected TB disease among PLHIV on or not on ART is known to worsen HIV progression as well as increase viral load; therefore it is important that PLHIV are screened for TB at each clinical encounter with a healthcare worker (HCW). If an HIV-positive client has symptoms suggestive of TB, take a sputum specimen to diagnose TB. The GeneXpert test should determine whether the client is Rifampicin-resistant or -sensitive. It is very important to investigate clients for TB before starting ART.

The healthcare provider should suspect TB if at least one (or more) of the following symptoms are present as per the TB screening guide:

- Current cough of any duration
- Persistent fever for more than two weeks
- Unexplained weight loss of more than 1.5 kg in a month, or failure to gain weight.

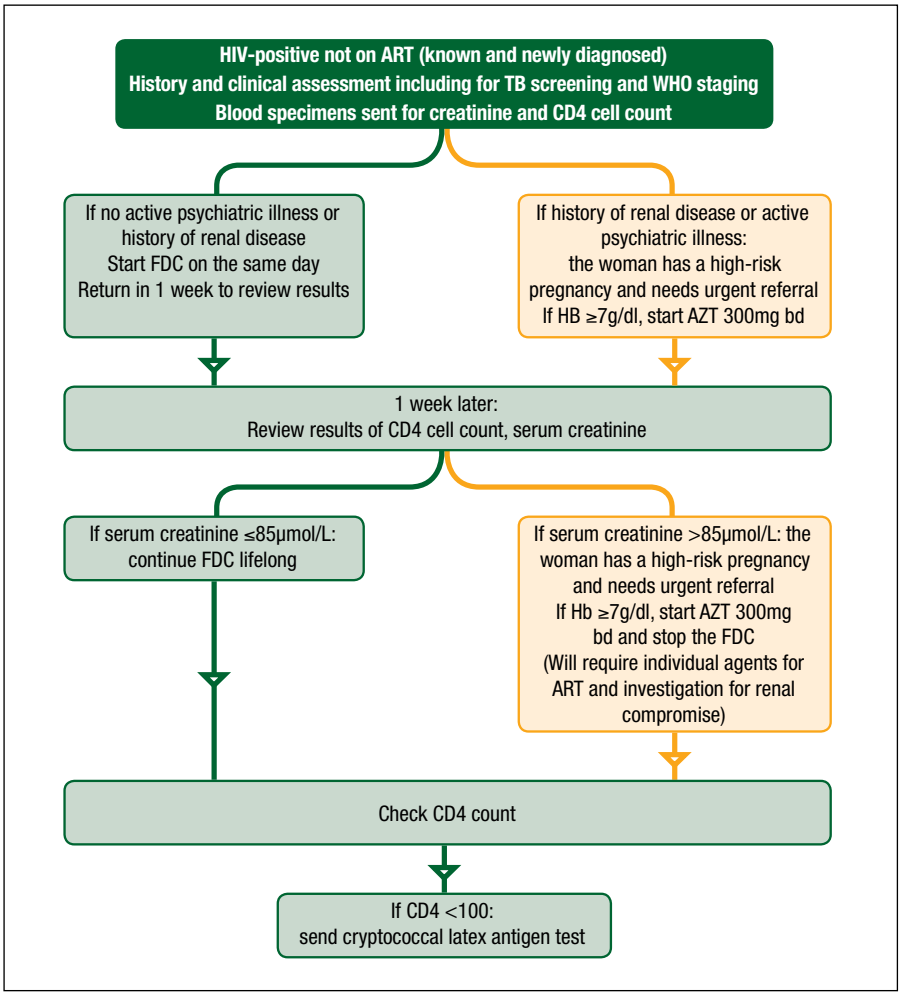
Lifelong antiretroviral treatment

HIV-positive pregnant women should start treatment as early as possible and continue throughout pregnancy, delivery and, thereafter, for the rest of their lives. Lifelong ART benefits maternal health, contributes to maternal survival, and reduces mother-to-child transmission (see Figure 16).

Pregnant women initiated on lifelong ART should be seen two weeks after ART initiation and then monthly. Monitoring for treatment failure and toxicity should follow the recommendations in the ART guidelines.

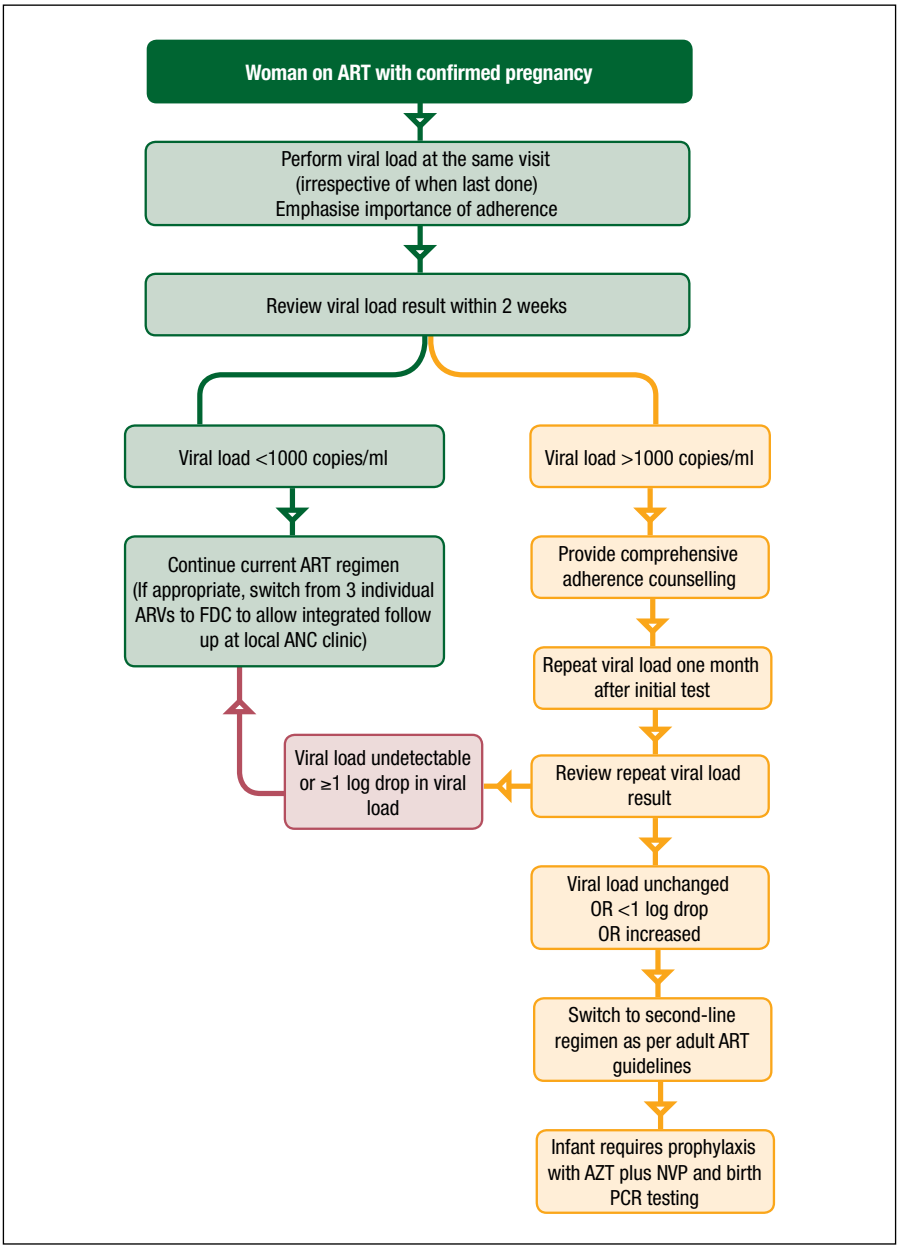
The following treatment algorithms (adapted from the 2015 HIV Guidelines) apply to women who are newly diagnosed as HIV-positive or are known to be HIV-positive but not yet on ART. These clients can be identified at any time during pregnancy, whilst breastfeeding or within one year post-partum.

Figure 16: *Algorithm for initiation for ART for HIV-positive women (ART-naïve[f])*



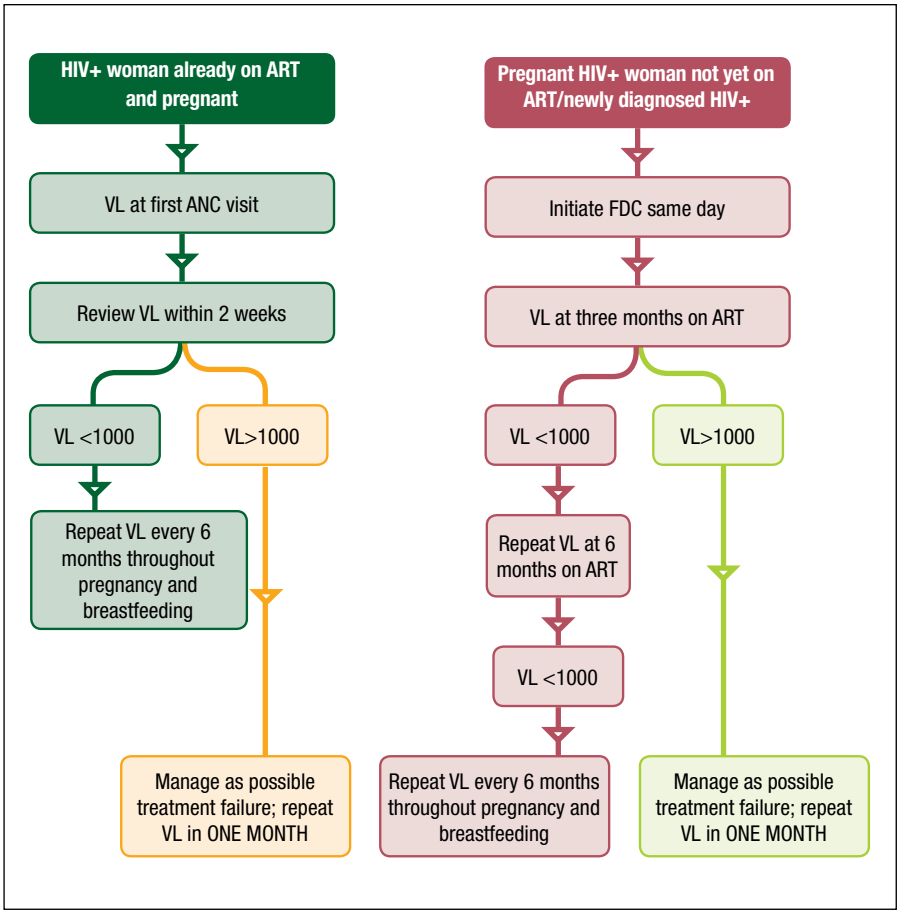
[f] ART-naïve: A person is considered treatment-naïve if they have never undergone treatment for a particular illness. In the world of sexually transmitted infections, the term is most often used to refer to HIV-positive clients who have never taken any antiretroviral for their infection.

Figure 17: *Algorithm for management of pregnant women who have been on ART >3 months*[t]



Viral load monitoring is essential for all clients on ART but especially for pregnant women, as an undetectable viral load reduces the risk of transmission during pregnancy and breastfeeding. Figure 18 illustrates the NDoH algorithm for monitoring of viral load in HIV-positive pregnant women.[5]

Figure 18: *Algorithm for viral load monitoring in HIV-positive pregnant women*



PMTCT management checklist

Adapted from the *National Consolidated Guidelines for the Prevention of Mother-to-child Transmission of HIV (PMTCT) and the Management of HIV in Children, Adolescents and Adults.*

Table 14: *PMTCT management checklist*

(If all the boxes are ticked 'yes', you have successfully completed the ANC visit.)

(Mark the appropriate column with an X)

Item	Yes	No
Have you ensured privacy?		
Are there educational materials on HIV and AIDS available for the client to take home?		
Did you provide pre- and post-test counselling, whether the client's results are HIV-positive or HIV-negative?		
At the time of HIV diagnosis, did you involve the client in the decision-making process of ART initiation?		
Did you explain the entire treatment plan and follow-up visit schedules?		
Did you identify and address any possible barriers to linkage to care?		
Did you make appointments directly with the receiving institution on behalf of the client and provide the client with the appointment date and a referral letter?		
Did you provide the client with the contact information for referral services?		
Did you treat mother and baby as a pair and provide services to both?		
Did you engage the client in support groups?		
Did you register the pregnant woman on MomConnect at the first antenatal care (ANC) visit?		
Did you use SMS technology to remind clients of appointments?		

Item	Yes	No
Did you confirm readiness to start ART?		
Did you initiate the client on ART?		
Did you conduct a complete medical history: diabetes, heart/ kidney disease, asthma, epilepsy, TB treatment, current medical problems, substance abuse, diastolic BP >90?		
Did you check for current pregnancy problems: rhesus-negative, multiple pregnancy, currently <16 or >36 years?		
Did you check for previous pregnancy problems: stillbirth or neonatal loss, >3 consecutive spontaneous abortions, birth weight <2 500g or >4 500g, admission for pre-eclampsia?		
Did you do a physical examination of the client?		
Did you do relevant laboratory tests?		
Did you screen the client for TB?		
Did you screen the client for STIs?		
Did you check on the client's need for contraception?		
Did you discuss and promote adherence to treatment?		
Did you promote prevention and support?		
Did you schedule a return visit or initiate same-day ART if the client was pregnant or breastfeeding?		
Did you evaluate the client for psychosocial support?		
Did you evaluate and analyse the client's laboratory results?		
Did you monitor growth and, if eligible, refer the client for supplementation, or otherwise arrange nutrition education?		
Did you estimate a delivery date?		
Did you book the follow-up visit or plot follow-up on the antenatal card?		
Did you check the client's mental health for two or more of: a difficult major life event in the last year, unhappiness about pregnancy, an absent or unsupportive partner, previous depression or anxiety, or experience of violence at home?		

Item	Yes	No
Did you screen for substance abuse and if required, refer the client for secondary hospital antenatal care?		
Did you measure the mid-upper arm circumference (MUAC) <23cm?		
Did you check the client's viral load?		
Did you check for BP? BP is normal if <140/90. If raised, repeat after one hour of rest. If the second BP level is normal, repeat the BP check after two days. If the second BP level is still raised, check the urine dipstick for protein.		
Did you offer the client an HIV test?		
Did you provide HIV testing?		
Did you offer PCR to the baby?		

Recording and reporting

The client's status should be recorded in the following places:

- Comprehensive PHC Tick Register
- TIER.Net
- TB Register
- HTC Register

Data recorded in these sources must be collated daily using the weekly tally and be summarised into the weekly figure which will then added to the monthly total. This must then be transcribed from the Weekly Tally Book into the Monthly Tally Notepad.

Clinical client information must be recorded on the integrated facility-held client record. The ART clinical stationery must be attached to the client record.

Any of the data elements in Table 15 may be applicable to ANC clients. Ensure that the client is recorded under all relevant data elements in the registers.

Table 15: *NIDS data elements applicable to ANC clients*

Data element	Definition
Antenatal 1st visit before 20 weeks	The first visit by a pregnant woman within 20 weeks after conception, primarily to receive antenatal care according to BANC procedures. The first antenatal visit is often referred to as a 'booking visit'.
Antenatal 1st visit 20 weeks or later	The first visit by a pregnant woman to a health facility 20 weeks or more after conception, primarily to receive antenatal care according to BANC procedures. The first antenatal visit is often referred to as a 'booking visit'.
Antenatal client known HIV-positive but not on ART at 1st visit	Antenatal clients with known HIV-positive status but not on ART at their first antenatal visit. In the absence of documented proof, verbal confirmation of HIV status is acceptable and a CD4 count test must be done.
Antenatal client HIV 1st test	Antenatal clients should preferably be tested at first antenatal visits but may be tested for the first time at a subsequent follow-up visit.
Antenatal client HIV 1st test positive	Antenatal clients who tested positive for the first HIV test done during her current pregnancy
Antenatal client HIV 1st test negative	Antenatal client who tested negative for the first HIV test done during her current pregnancy.
Antenatal client HIV re-test positive	Antenatal client who tested positive for HIV after testing negative for HIV during an earlier antenatal visit
Antenatal client eligible for ART initiation	Antenatal clients who tested HIV-positive during or before the pregnancy and are not on ART at 1st visit
Antenatal client initiated on ART	HIV-positive antenatal clients who were initiated on ART during their current pregnancy

Managing the HIV-exposed infant

Infant clinical management

HIV-exposed infants need immediate management after birth to reduce the risks of transmission of the virus. Ideally, this is initiated during labour and childbirth and continues after discharge.

Immediately post-delivery

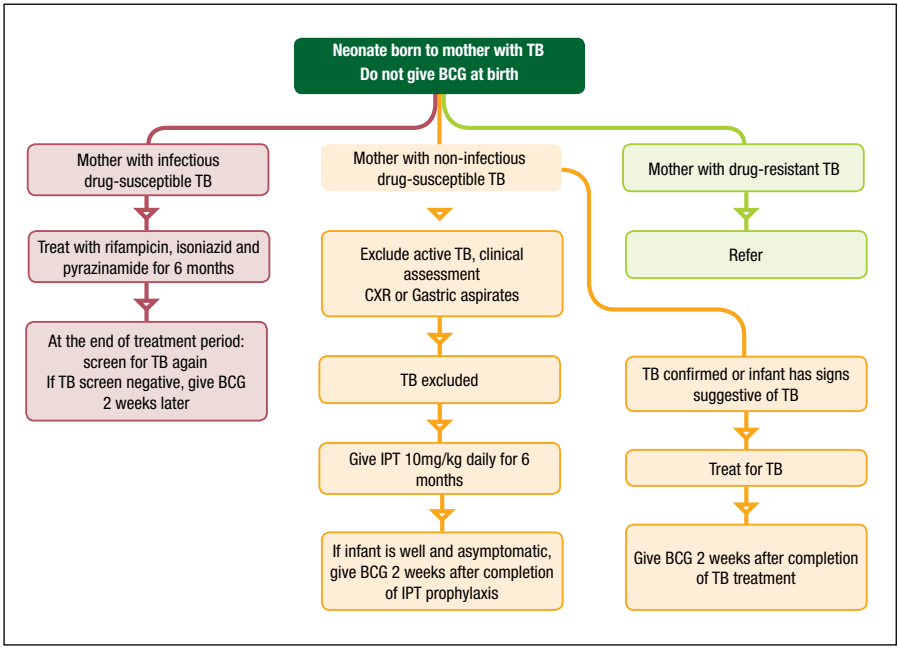
Table 16: *Management of HIV-exposed infants' checklist*

Maternal care (as per National HIV Guidelines 2015)	
Mother: Within an hour of delivery	**Before leaving the facility**
• Infants born to HIV-positive women should receive skin-to-skin contact with their mothers almost immediately, regardless of the mother's infant-feeding choice • Initiate exclusive breastfeeding immediately or within one hour of delivery • If the mother has decided to exclusively formula-feed, she should bring infant formula with her, which should be provided within one hour of delivery • Initiate HIV-exposed infants on ARV prophylaxis immediately after birth or very soon after • Discuss contraception options and offer an appropriate method to the mother	All women must be counselled about: • the need for consistent maternal ART adherence and infant prophylaxis to reduce risk of MTCT; • the importance of exclusive breastfeeding for the first six months; and • the dangers of mixed feeding – i.e. providing a combination of breast milk plus infant formula, water or other foods or fluids (excluding prescribed medications) within the first six months. All women should: • be given at least eight weeks' supply of ART and six weeks' supply for infant prophylaxis on discharge; • have follow-up at a health facility within three to six days and again six weeks post-partum; • have a correctly completed Road-to-Health (RTH) booklet (mandatory); • have a finalised plan for the mother-baby pair before the pair is discharged after delivery; • with their infants, receive health care at the same consultation, regardless of service point; and • receive documentation regarding the mother-baby pair, including referral letters.

Table 17: *Infant post-delivery care checklist*

Infant care post delivery
• Infants must be vaccinated as per the EPI schedule. • BCG should be given to all infants, unless the mother has active TB or <2 months on TB treatment. Exposed infants must be screened for congenital TB. See Figure 19. • ART prophylaxis given at birth to all HIV-exposed infants is effective in reducing MTCT whether maternal ART is received or not. It is also highly effective in reducing MTCT through breast milk. • Infants born to HIV-positive women should receive daily NVP for six weeks, unless there are circumstances that warrant 12 weeks of NVP or NVP plus AZT. • Abandoned babies must receive NVP prophylaxis immediately until their HIV-exposure status has been determined, using an HIV antibody test. This applies also in cases in which the mother is indisposed (due to severe illness, coma, mental illness, or death). • EPI-scheduled visits for vaccination at six, 10 and 14 weeks at an EPI clinic and a routine health check must be performed. • The first postnatal visit for the infant is scheduled for Day 3, and should occur within six days of life at the health facility.

Figure 19: *Algorithm for infants born to mothers with active TB*



Postnatal care >72 hours post delivery

The majority of women and newborns do not remain in a health facility more than 72 hours after delivery, unless there are complications. This means that most postnatal care is conducted at primary health care facilities or in the communities via WBOTs or mobile clinics. Figure 20 represents the algorithm for the initiation of infant prophylaxis >72 hours post-delivery.

Figure 20: *Algorithm for initiation of infant prophylaxis or ART >72 hours after delivery (for the prevention of mother-to-child transmission of HIV (PMTCT) and the management of HIV in children, adolescents and adults: 2015)*

For any woman who is newly diagnosed as HIV-positive >72 hours after delivery and is either breastfeeding or within one year post-partum:

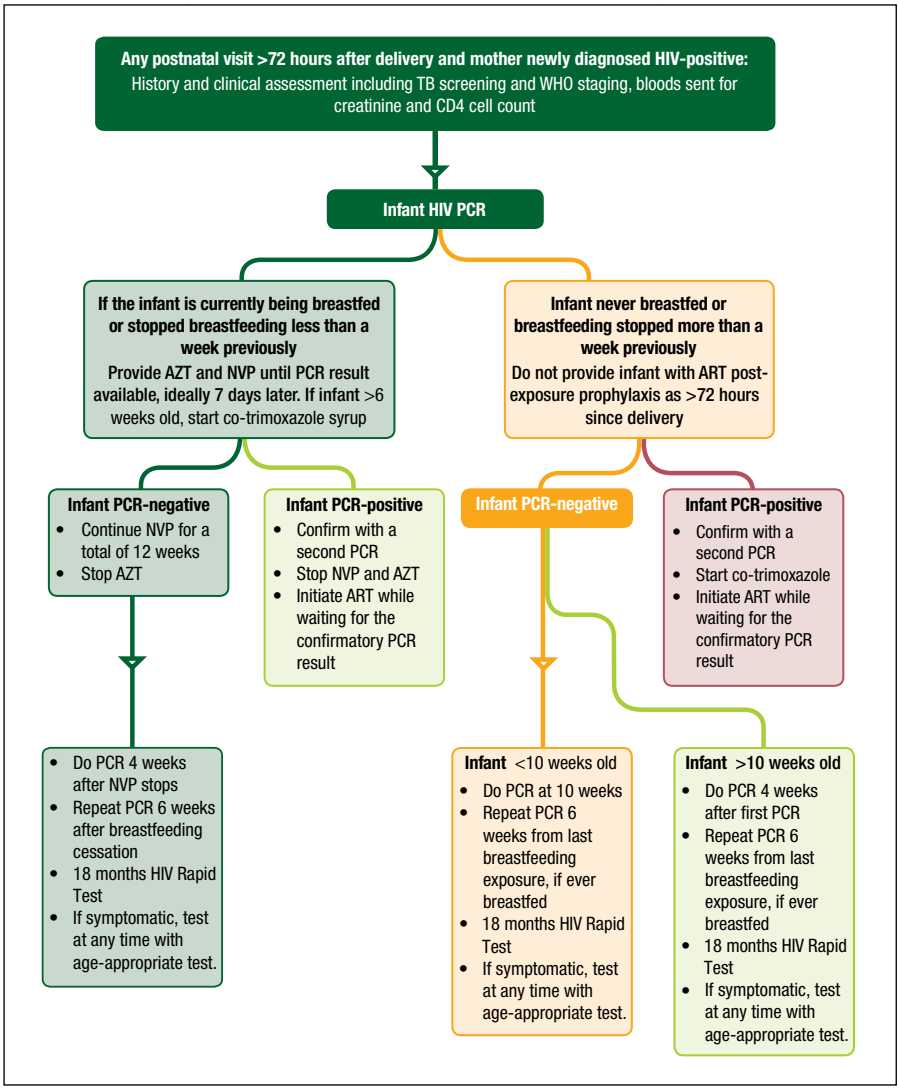


Table 18: *Postnatal care checklist*

(Mark the appropriate column with an X)

Item	Yes	No
Did you provide pre- and post-test counselling, whether the client's results are HIV-positive or HIV-negative?		
At the time of HIV diagnosis, did you involve the client in the decision-making process of ART initiation?		
Did you explain the entire treatment plan and follow-up visit schedules?		
Did you identify and address any possible barriers to linkage to care?		
Did you make appointments directly with the receiving institution on behalf of the client and provide the client with the appointment date and a referral letter?		
Did you provide the client with the contact information for referral services?		
Did you treat the mother and baby as a pair and provide services to both?		
Did you engage the client in support groups?		
Did you register the pregnant woman on MomConnect at the first antenatal care (ANC) visit?		
Did you use SMS technology to remind the client of appointments?		
Did you confirm readiness to start ART?		
Did you initiate the client on ART?		
Did you conduct a complete medical history: diabetes, heart/ kidney disease, asthma, epilepsy, TB treatment; current medical problems, substance abuse, diastolic BP >90?		
Did you check for current pregnancy problems: rhesus-negative, multiple pregnancy, currently <16 or >36 years?		
Did you check for previous pregnancy problems: stillbirth or neonatal loss, >3 consecutive spontaneous abortions, birth weight <2 500g or >4 500g, admission for pre-eclampsia?		

Item	Yes	No
Did you do a physical examination of the client?		
Did you do relevant laboratory tests?		
Did you screen the client for TB?		
Did you screen the client for STIs?		
Did you check on the client's need for contraception?		
Did you discuss and promote adherence to treatment?		
Did you promote prevention and support?		
Did you schedule a return visit or initiate same-day ART if the client was pregnant or breastfeeding?		
Did you evaluate the client for psychosocial support?		
Did you evaluate and analyse laboratory results?		
Did you conduct growth monitoring and provide supplementation if eligible, otherwise nutrition education?		
Did you estimate a delivery date?		
Did you book the follow-up visit and plot follow-up on the antenatal card?		
Did you check the client's mental health to identify if two or more of: a difficult major life event in the last year, unhappiness about pregnancy, an absent or unsupportive partner, previous depression or anxiety, or experience of violence at home?		
Did you screen for substance abuse, and if required, refer the client for secondary hospital antenatal care?		
Did you measure the MUAC <23cm		
Did you check the client's viral load?		
Did you check for BP? (BP is normal if <140/90.) If raised, repeat after one hour of rest. If the second BP reading is normal: repeat BP after two days. If the second BP reading is still raised: check the urine dipstick for protein.		
Did you offer the client an HIV test?		
Did you provide HIV testing?		

Item	Yes	No
Did you offer PCR to the baby?		
Did you use the IMCI case-recording form/register?		
Did she have a Rapid Test for HIV?		
Did you inform the caregiver about the illness of her child?		
Did you instruct the caregiver on how to give medicine to the child?		
Did you counsel the caregiver about the child's feeding needs?		
Did you explain to the caregiver how to take care of the child?		
Did you ask the caregiver for feedback?		
Did you explain when the caregiver should return with the child?		
Did you use the mother's card?		

Recording and reporting

The client should be recorded in the following places:

- HTC Register
- Comprehensive PHC Tick Register
- ART clinical stationery for capture in TIER.Net.

Table 19: *NIDS data elements applicable to HIV-exposed infants*

Data element	Definition
Mother postnatal visit within 6 days after delivery	Postnatal visits by a mother within six days after delivery
OHH with postnatal care	PHC outreach household (OHH) visit where care was provided to woman and/or newborn baby within six days after delivery
Targeted birth PCR test	First PCR tests to high-risk infants at birth, regardless of the mother's HIV status

Data element	Definition
Targeted birth PCR test positive	First PCR test positive to high-risk infants at birth
Infant 1st PCR test at 10 weeks	Infant born to HIV-positive woman who was PCR tested for the first time at 10 weeks after birth
Infant initiated on CPT around 6 weeks	Infants born to HIV-positive women who were initiated on co-trimoxazole around six weeks after birth to prevent opportunistic infections
Infant rapid HIV test around 18 months	Babies born to HIV-positive women who were tested for HIV antibodies around 18 months after birth
Infant rapid HIV test positive around 18 months	Infants born to HIV-positive women who tested positive for HIV antibodies around 18 months after birth
TB asymptomatic contact under 5 years	Children who did not have any of the four symptoms of TB during the symptom-screening process
TB contact under 5 years initiated on IPT	Children started on IPT following a negative symptom screen
HIV test child 19–59 months	All children aged 19 to 59 months who were tested for HIV

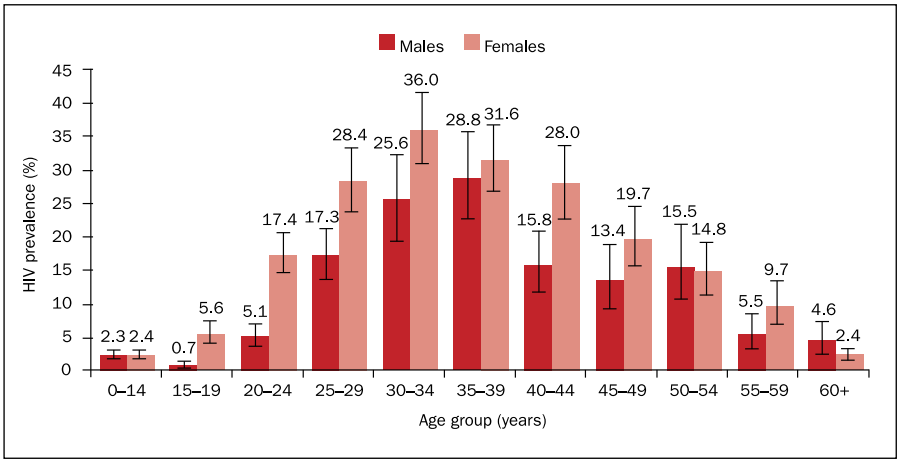
HIV management for paediatrics

Paediatric clinical management

Managing HIV in children under 5 years

The country has seen a reduced HIV prevalence rate in children aged 2 to 14 years from 5.6% in 2002 to 2.4% in 2012.3 The 2012 rate for 0–14 years, per male and female, is reflected in Figure 21. This reduction is also observable in decreased infant and child mortality over the year, although these achievements are minimal and could be due, in part, to the PMTCT programme.

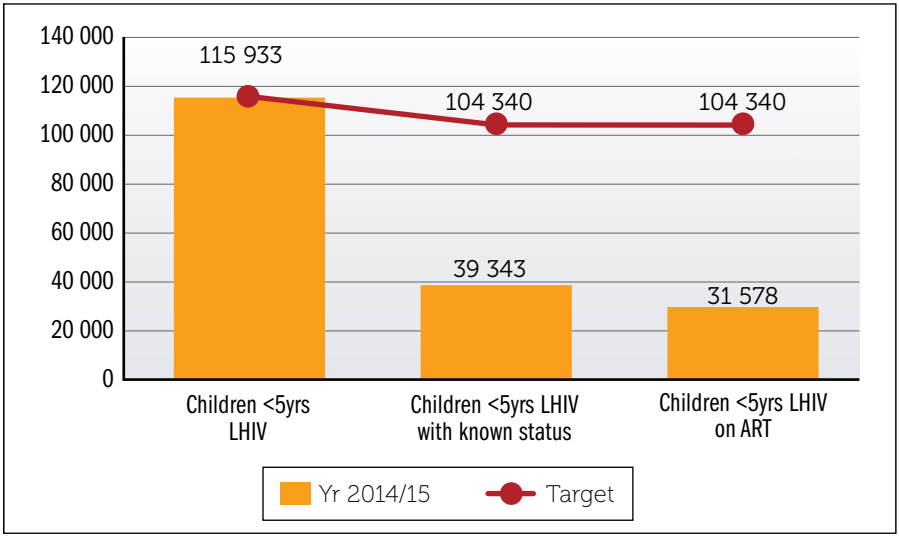
Figure 21: *HIV prevalence in children in South Africa in 2012 in relation to the overall HIV prevalence figures*



Source: South African National HIV Survey, 2012

The 90-90-90 cascade in Figure 22 shows that a significant number of under-5 children are still estimated to be living with HIV. The HIV prevalence rate in this age group might merely be a glimpse of failed PMTCT interventions. The 90-90-90 Strategy seeks to address the gaps in programme interventions by using population-based targeting. In targeting the paediatric under-5 HIV treatment cascade, the clinician has a role to play in the management of clients and accurate record-keeping.

Figure 22: *HIV treatment cascade for children <5 years*

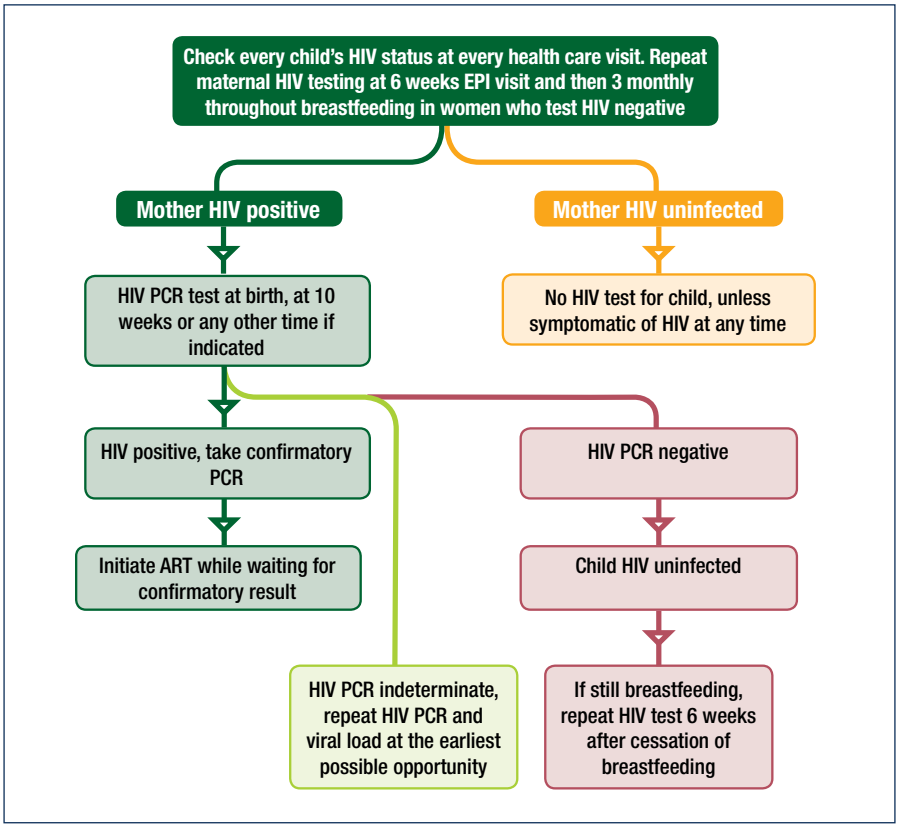


Source: 90-90-90 DIP Cascades Workbook based on DHIS for period 2014 to 2015

HTC for children under 5 years

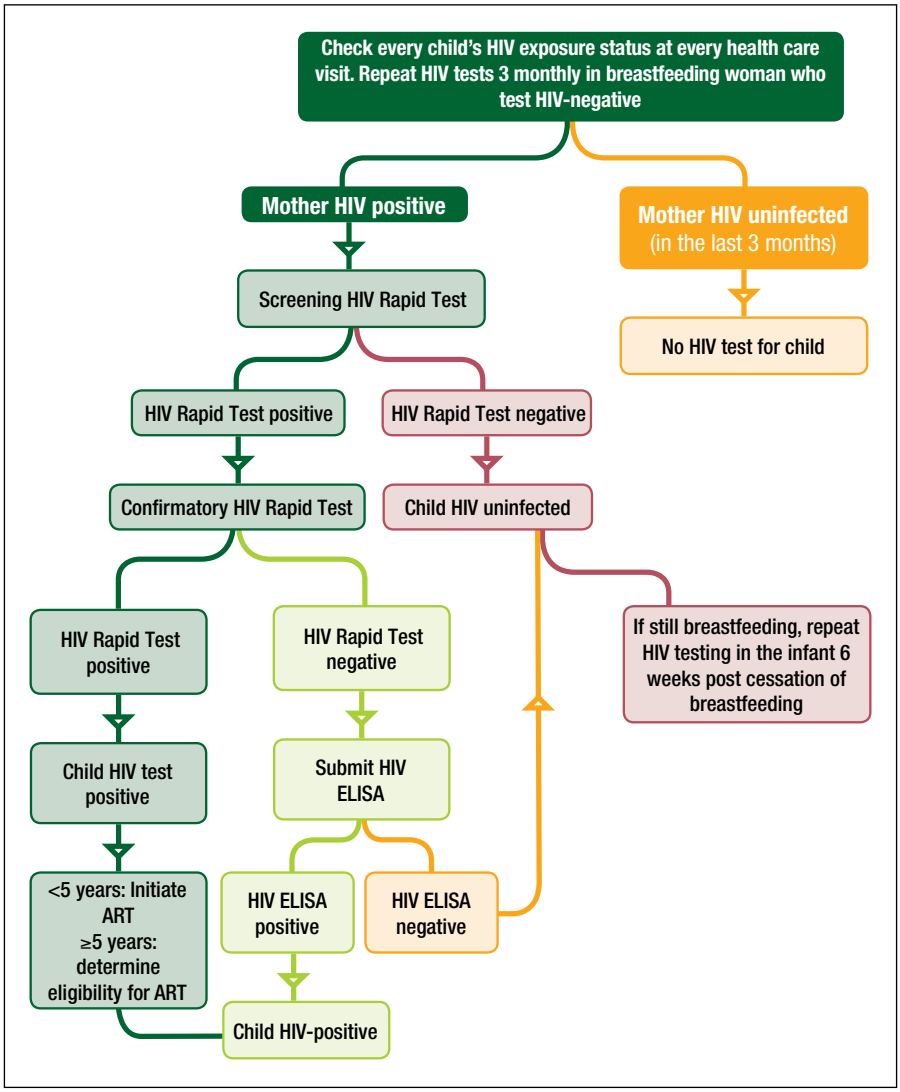
HIV testing and counselling is necessary not only for HIV-exposed infants; all children younger than five years should be screened and tested for HIV. Figures 23 and 24 depict the national testing algorithms for children younger than 18 months and for those older than 18 months (but not older than five years), respectively.

Figure 23: *Algorithm for testing children under 18 months of age*



HIV-exposed infants who are PCR-negative 6 weeks after stopping breastfeeding should have a confirmatory HIV Rapid Test at 18 months of age. Infants of newly diagnosed HIV-positive breastfeeding mothers must receive an age-appropriate HIV test; HIV PCR if <18 months and HIV Rapid Test if ≥18 months, and start on NVP and AZT immediately. If the HIV test is negative, stop the AZT and continue daily NVP for 12 weeks. If the infant's HIV test is positive, stop NVP and urgently initiate paediatric triple ART while retesting and confirming the HIV result.

Figure 24: *Algorithm for testing children >18 months*

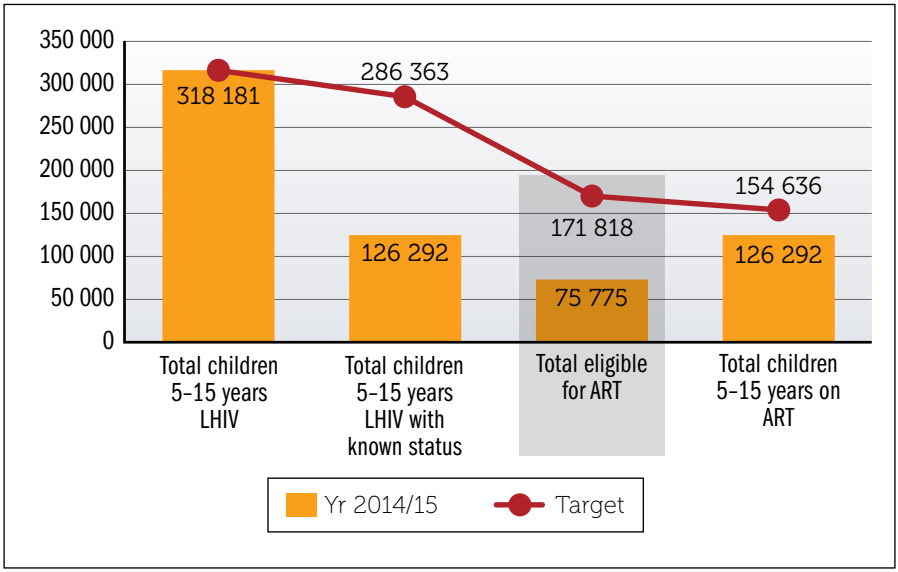


Note: Healthcare workers must check that every HIV-exposed child >18 months has received the HIV Rapid Test at 18 months. If it was missed, an HIV Rapid Test must be done regardless of how much older than 18 months the child is.

Managing HIV in children aged 5 to 14 years

The targeted 90-90-90 approach assists with predetermining the estimated number of children living with HIV in a given catchment population, thereby ensuring that children are not missed in managing for retention in care. As shown in Figure 25, the gaps between children known to be living with HIV and those expected to be enrolled on ART open an opportunity to link paediatric clients back to care and to manage them appropriately. This poses the threat of losing children if they are not managed for retention in care.

Figure 25: *HIV treatment cascade for children aged 5 to 14 years*



Source: *90-90-90 DIP Cascades Workbook* based on DHIS for period 2014 to 2015

Use the following steps to manage a child in the paediatric HIV treatment cascade:

- Take baseline bloods (CD4 cell count and percentage, Hb and lipogram).
- All children are eligible for initiation on ART in relation to the same

criteria and guidance as followed for adults. ART should be started as soon as possible, especially in infants.

- Screen the child for TB to exclude TB disease, to determine eligibility for IPT and for early diagnosis and treatment of TB.

- Also focus on other aspects of care, such as immunisation, growth monitoring and promotion.

The following steps will assist clinicians in proactively detecting HIV infection in children from birth to 14 years:

- Use PMTCT records to identify all HIV-exposed and HIV-positive children;

- Document results for all the HIV PCRs done for children;

- Test children who have mothers with an unknown HIV status;

- Implement the IMCI case-management process which suggests consideration of possible HIV infection in all children who present to PHC facilities;

- Test for HIV in all children presenting with pneumonia (especially severe pneumonia), malnutrition and TB. Siblings of children diagnosed as HIV-positive should also be tested;

- Test vulnerable children such as those who are orphaned and abandoned, because they are at high risk of HIV infection and their HIV status should be established;

- Test all children of adults testing positive during HTC; the adults must bring their children for testing; and

- Children of all adults diagnosed with TB who test positive for HIV should also be screened for both HIV and TB.

Source: Adapted from the National Consolidated Guidelines for the prevention of mother-to-child transmission of HIV (PMTCT) and the management of HIV in children, adolescents and adults

Recording and reporting

The client should be recorded in the following places:

- HTC Register
- Comprehensive PHC Tick Register
- ART clinical stationery for capture in TIER.Net.

Table 20: *NIDS data elements applicable to managing children 0 to 4 years*

Data element	Definition
Infant rapid HIV test around 18 months	Children born to HIV-positive women who were tested for HIV antibodies around 18 months
HIV test child 19-59 months	All children 19 to 59 months who were tested for HIV
Infant rapid HIV test positive around 18 months	Children born to HIV-positive women who tested positive for HIV antibodies around 18 months after birth
HIV test positive child 19-59 months	All children 19 to 59 months who tested positive for HIV
Child under 15 started on ART this month: Naïve*	Naïve children under 15 years who started life-long ART are the sum of the following: - Clients never been exposed to triple therapy ART for more than 30 days in total This also includes clients initiated on life-long triple therapy ART from the: - PEP programme

*This data element also applies to children 5 to 14 years

Table 21: *NIDS data elements applicable to managing children 5 to 14 years*

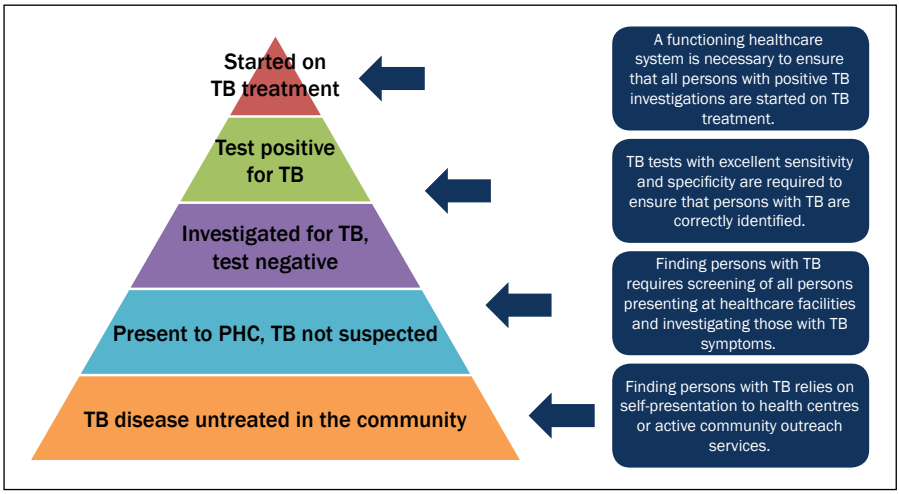
Data element	Definition
HIV test child 5–14 years	All children 5 to 14 years who tested for HIV
HIV test positive child 5–14 years	All children 5 to 14 years who tested positive for HIV antibodies
Child under 15 started on ART this month: Naïve*	Naïve children under 15 years who started life-long ART are the sum of the following: - Clients never been exposed to triple therapy ART for more than 30 days in total This also includes clients initiated on life-long triple therapy ART from the: - PEP programme

*This data element also applies to children 0 to 4 years

SECTION F:
Managing clients with TB

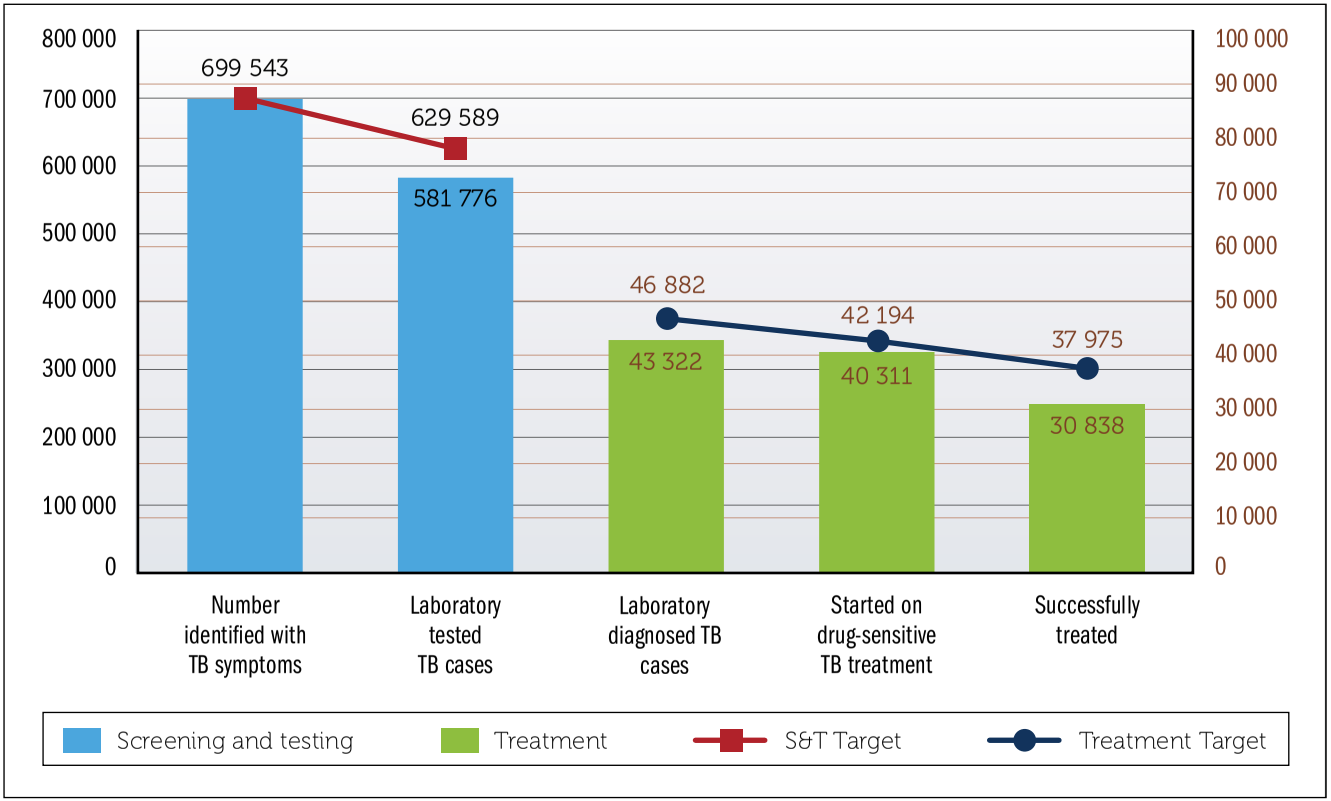
Tuberculosis (TB) is the leading cause of death along with HIV in South Africa (*District Health Barometer 2014*). The TB programme has been standardised in South Africa since 1996 and yet we are still struggling to reach WHO targets. Efforts are being made to integrate the previously vertical TB programme management into the chronic care system alongside HIV and other chronic diseases like hypertension and diabetes. It is essential that clients with TB are detected early in the disease process to enable effective treatment, to limit the spread of the disease, and to reduce the long-term morbidity and mortality associated with late detection.

Figure 26: *Steps required for the diagnosis of TB*



Source: NTCP Guidelines 2014

Figure 27: *Drug-sensitive TB cascade*



Source: 90-90-90 DIP Cascades Workbook based on DHIS for period 2014–2015 (Actuals based on National Q4 2014 results)

Clinical screening for tuberculosis

It cannot be emphasised enough that every person visiting a facility should be screened for TB. A short screening tool should be used to identify clients suspected to have TB who should be tested. The client should be asked the questions in Table 22. If the client answers 'yes' to any of the following questions, it is very important that they be tested for TB. If they have ever been treated for TB, but still answer 'yes' to any of the following questions, they should be tested again.

Table 22: *TB screening tool*

(Mark the appropriate column with an X)

Question	Yes	No
1. Have you been coughing for more than two weeks?		
2. Are you in close contact with someone who currently has TB?		
3. Have you been coughing up blood in your sputum?		
4. Are your clothes loose on you? Have you lost weight for no apparent reason?		
5. Have you been in close contact with someone who has been coughing continuously for more than two weeks?		
6. Have you been sweating excessively (so that your clothes get wet) at night for two weeks or more?		

If the client has symptoms suggestive of TB, two sputum specimens should be collected for smear microscopy and a TB culture or GeneXpert where it is available. It is very important to investigate clients for tuberculosis before starting them on ART.

The healthcare provider should suspect TB if two or more of the following are present:

- Coughing for more than two weeks
- Sputum production, which may occasionally be blood-stained

- Fever for more than two weeks
- Drenching night sweats for more than two weeks
- Unexplained weight loss (of 1.5 kg or more over the past four weeks or poor weight gain during pregnancy)
- Loss of appetite, malaise or tiredness
- Shortness of breath or chest pains.

Table 23: *TB screening check list*

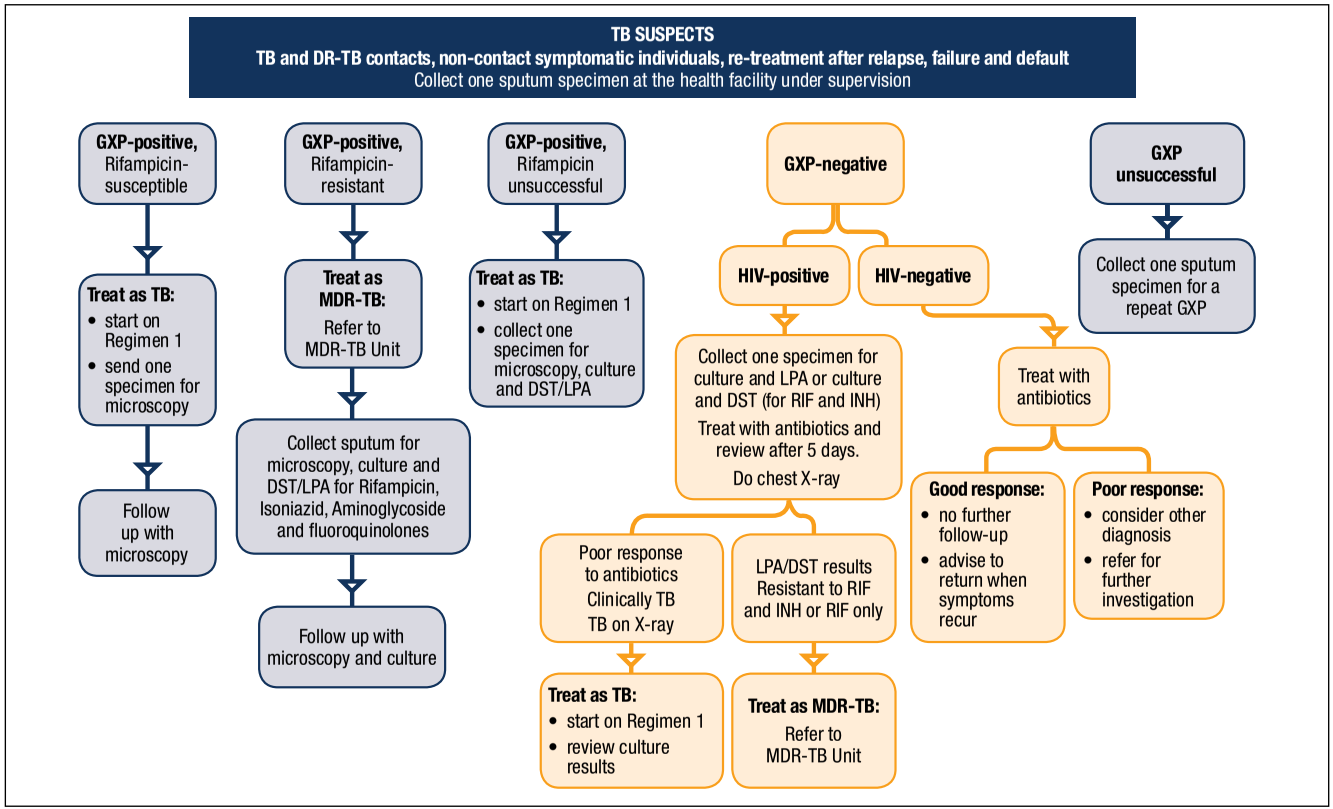
Item	Tick
Have you applied the screening tool?	
Have you taken sputum samples?	
Have you asked the client about contacts with TB?	
Have you offered PITC to the client?	
Have you initiated the client on IPT if HIV-positive and/or younger than five years and screening negative?	
Have you initiated CPT if the client is eligible?	

Managing drug-susceptible TB

The management of drug-susceptible TB is stipulated in the *National Tuberculosis Management Guidelines 2014* produced by the National Department of Health and updated periodically. The full management procedure is contained in the guidelines. Only key points are described here.

Clients should be managed according to the GeneXpert diagnostic algorithm (see Figure 28) and referred when appropriate.

Figure 28: *GeneXpert diagnostic algorithm*



Source: National Tuberculosis Management Guidelines 2014 (Annexure 8, page 115)

Contact tracing

(extracted from National TB Guidelines 2014)

Tracing TB clients' contacts and managing them appropriately is extremely important.

Assessing contacts during a home or clinic visit

The assessment of potential contacts should involve the following domains:

1) Symptom screening: The contact is screened for TB symptoms (cough, sweating at night, fever and weight loss) and, if any of the symptoms are present, they should be asked to provide sputum for investigation and a follow-up clinic visit should be scheduled. All symptomatic contacts who are investigated for TB must be entered in the TB Identification and Follow-up Register (GW 20/13).

2) Investigations: If the contact is coughing, one sputum specimen must be collected for GeneXpert testing. Those who are not coughing or cannot produce sputum but are symptomatic must be referred to the clinic/hospital for investigation.

3) Risk factor assessment: The person should be assessed for the risk factors for development of TB disease (e.g. age <5 years, HIV-positive, diabetes, malnutrition). HIV testing must be offered and diabetic screening conducted. All children younger than five years must be assessed for nutritional status.

4) Environmental assessment: An environmental assessment can be done and information provided on how to prevent TB transmission through appropriate environmental interventions.

The community or facility health worker should record in the index client's Patient Treatment Record (GW 20/12) that contact tracing and screening, with subsequent actions, have been done.

Table 24: *Drug-sensitive TB checklist*

Item	Tick
Have you screened the client for TB?	
Have you entered the results of the screening in the client record?	
Have you obtained a sputum specimen?	
Have you completed the laboratory form correctly and recorded this in the specimen register?	
Have you checked for the client's results if a specimen was previously taken?	
Have you recorded the results in the client records?	
Have you completed the **Patient Treatment Record (GW 20/12)** 'blue file' for the client?	
Have you interviewed the client about contacts in the home and environment?	
Have you referred the contact tracing to the relevant tracing team, e.g. CCG or WBOT?	
Have you initiated the client on treatment according to the guidelines?	
Have you linked the client to a treatment supporter and support group?	
Have you assessed and tested for any possible co-morbidities, e.g. hypertension and diabetes?	
Have you advised the client on signs of side effects and how to manage mild side effects?	
Have you explained to the client how to take the medicine and when to return to the clinic?	
Have you completed the TB Register?	
Have you submitted the client's file for capturing in ETR.Net/Integrated TIER.Net?	

Recording and reporting

The client should be recorded in the following places:

- HCT Register
- Comprehensive PHC Tick Register
- ART clinical stationery for capture in TIER.Net if HIV-positive
- TB Register if TB-positive.

Any of the data elements in Table 25 may be applicable to clients suspected of being infected with TB. Ensure that the client is recorded under all relevant data elements in the registers.

Table 25: *NIDS data elements applicable to TB clients*

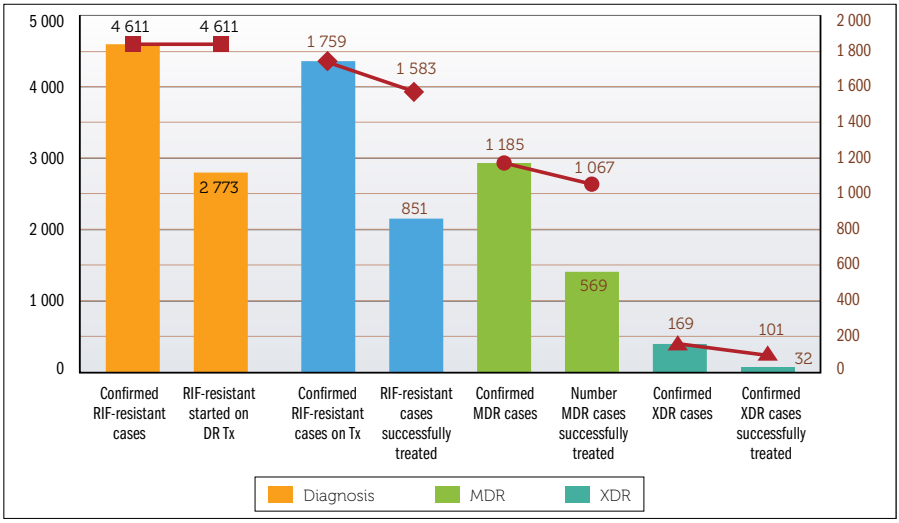
Data element	Definition
TB suspect 5 years and older identified	Client five years and older found during TB screening to have been coughing for more than two weeks
TB suspect 5 years and older sputum sent	TB suspect five years and older who had sputum collected and sent for testing
TB AFB sputum sample sent	All sputum samples sent to the lab for direct TB microscopy testing of TB suspect cases five years and older
TB AFB sputum result received within 48 hours	Sputum samples sent to laboratory for suspected TB cases, where the result was received by the facility within 48 hours of sending the sample
TB suspect 5 years and older test positive	Any client five years and older for whom one or more sputum specimens were sent to the laboratory and the result is confirmed as a smear-positive pulmonary TB case. It can be a new or a retreatment case.

Data element	Definition
TB suspect 5 years and older initiated on treatment	Any client five years and older who, after being confirmed as a smear-positive pulmonary TB case, is starting treatment. It can be a new or a retreatment case.
TB asymptomatic contact under 5 years	Children who did not have any of the four symptoms of TB during the symptom screening process
TB/HIV co-infected client - total	All HIV/TB co-infected clients identified in the reporting period
TB contact under 5 years initiated on IPT	Children started on IPT following a negative symptom screen
TB/HIV co-infected client initiated on CPT	TB/HIV co-infected client initiated on co-trimoxazole prophylaxis for the first time during the reporting period
TB/HIV co-infected client on ART	HIV-positive TB client on ART in the case-finding reporting period
HIV positive TB client	All TB clients known to be HIV-positive
TB client successfully completed treatment	All TB clients who completed treatment; this includes clients who were cured and those without proof of cure at the end of the treatment period
TB client died during treatment	All TB clients started on treatment but died during the treatment period
TB client start on treatment	All clients started on TB treatment during the reporting period
New smear-positive pulmonary TB client death	New smear-positive pulmonary TB clients who were started on treatment but died during the treatment period
TB client lost to follow-up	All TB clients who were initiated on treatment but were lost to follow-up during TB treatment

Managing drug-resistant TB

Drug-resistant TB has become more common in South Africa and has been complicated by the emergence of extreme drug-resistant TB. These forms of resistant TB are not only expensive to manage but have poorer outcomes and more serious side effects from the toxicity of the drugs. It is therefore essential that all drug-resistant clients are identified early and treated on the correct drug regimen.

Figure 29: *Drug-resistant TB cascade*



Source: Actuals based on National Q4 2014 results.
Note: Pillar 1 and 2 refer to the current cohort; Pillars 3–8 refer to Final (36 months) treatment outcomes of the treatment cohort (rifampicin-resistant TB and MDR-TB patients) of Oct to Dec 2011.

The role of PHC facilities in managing MDR-TB

(extracted from the National Tuberculosis Management Guidelines 2014)

Although the DR-TB treatment initiation sites have primary key responsibility for the treatment of MDR-TB, PHC facilities have an important role to play in:

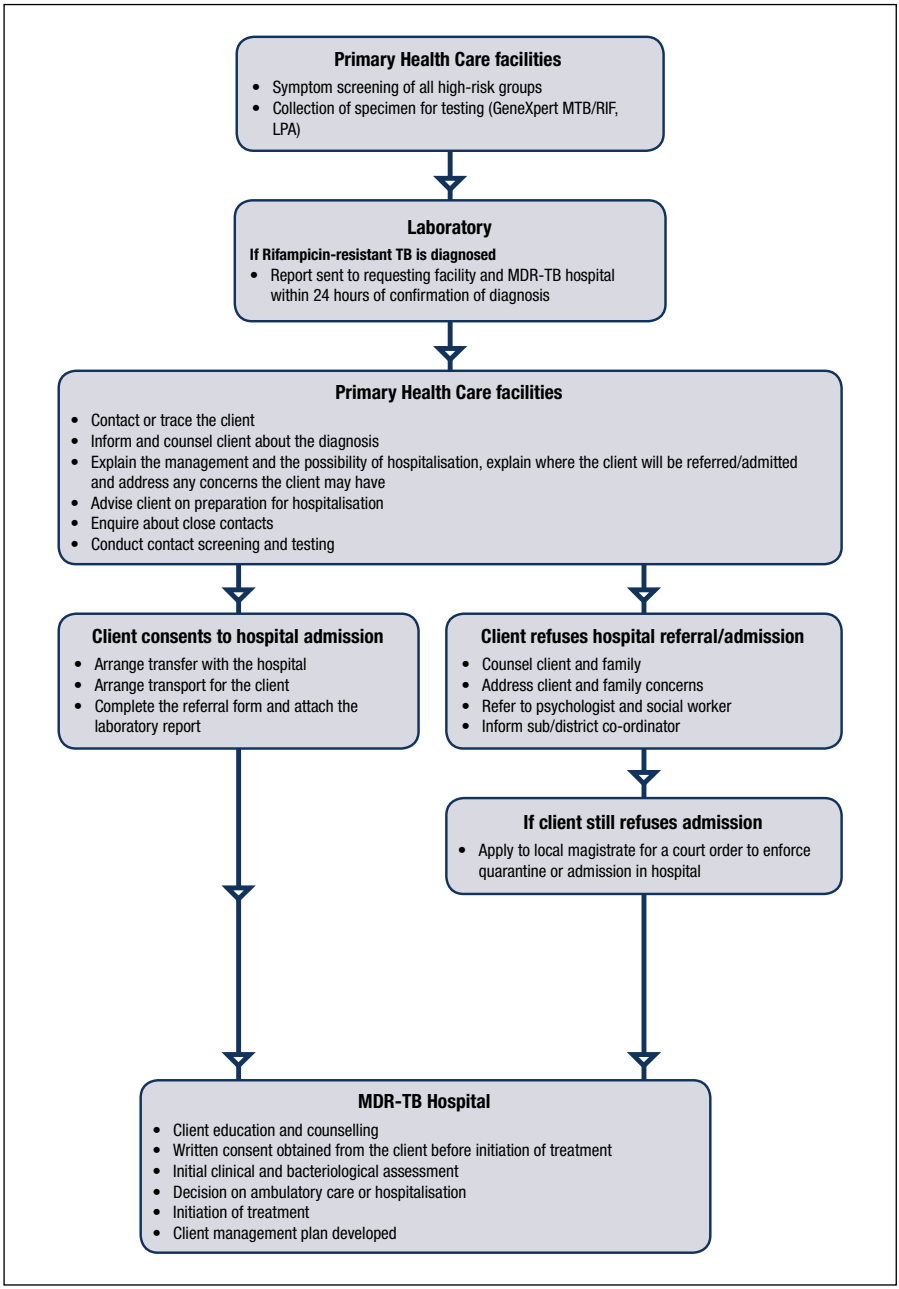
- ensuring early diagnosis of DR-TB in clients;

- referring all confirmed DR-TB clients for treatment immediately;
- conducting screening and testing of all DR-TB contacts;
- providing ongoing care post discharge from the MDR-TB treatment initiation sites; and
- providing counselling and support to clients with DR-TB, their families and contacts.

On discharge from the MDR-TB hospital, clients will continue treatment at the PHC facility and be evaluated monthly by the MDR-TB unit. The following must be considered:

- Mechanisms for feedback on client follow-up and adherence monitoring should be established between the MDR-TB unit and PHC facility prior to discharge.
- The PHC facility should receive drugs for MDR-TB clients from the MDR-TB hospital on a client-name basis and provide these to the client through clinic DOT or home-based care.
- Adequate records of individual client progress as well as hospital registers are required to monitor overall response to treatment and track treatment outcomes.

Figure 30: *Algorithm for management of DR-TB clients in PHC*



Recording and reporting

Drug-resistant TB clients are usually referred to hospital level for initiation and stabilisation on treatment and then managed further at a PHC level. The following data elements may be applicable to DR-TB clients managed in the clinic.

Table 26: *NIDS data elements applicable to DR-TB clients managed in the clinic*

Data element	Definition
TB MDR confirmed client	Client diagnosed with multidrug-resistant TB (MDR-TB)
TB MDR confirmed client start on treatment	Confirmed MDR-TB client started on treatment during the reporting period
TB MDR client successfully complete treatment	Confirmed MDR-TB client successfully treated at the end of the treatment period
TB MDR death	Confirmed MDR-TB client who died during treatment period
TB XDR confirmed client	Client diagnosed with extensively drug-resistant TB (XDR-TB)
TB XDR confirmed client start on treatment	Confirmed XDR-TB client started on treatment during the reporting period
TB XDR client successfully complete treatment	Confirmed XDR-TB client successfully treated at the end of the treatment period
TB XDR death	Confirmed XDR-TB client who died during treatment period
TB MDR client lost to follow-up	Confirmed MDR-TB client who is lost to follow-up during the treatment period
TB XDR client lost to follow-up	Confirmed XDR-TB client who is lost to follow-up during the treatment period
TB Rifampicin-resistant confirmed client	Rifampicin-resistant TB clients diagnosed during the reporting period
TB Rifampicin-resistant confirmed client start on treatment	Confirmed rifampicin-resistant TB clients started on treatment during the reporting period
TB Rifampicin-resistant confirmed client sputum sent for culture and DST	Rifampicin-resistant TB clients who had sputum collected for baseline culture and drug-susceptibility testing (DST)

CONCLUSION

The contribution of clinicians towards HIV and TB eradication goes beyond provision of clinical care, and even of high-quality clinical management inside the clinic; they have a vital role to play by providing these high-quality services in the right places (communities) and to the right people (population targeting) so that greatest impact can be achieved.

Clinicians also have a stake in the tracking, monitoring and evaluation of health programmes, including the impact on health outcomes for individual clients, communities, cities, provinces and the country at large. Only when primary health care is focused on promotion of health and prevention of disease rather than curative interventions shall we have truly served the health and well-being of our communities.

This *Clinicians' Guide* details the role of the clinician in managing HIV and TB clients of all ages in a comprehensive and holistic manner. The role of the clinician in linking the targeted population and retaining these clients through continuous monitoring is key to achieving the 90-90-90 targets and an AIDS-free generation.

The other three volumes in this Compendium:

- introduce the 90-90-90 strategy in South Africa, explaining the rationale and urgency for ramping up our national HIV, AIDS and TB responses and outlining the roles of different players at the provincial, district and facility level (Volume 1);
- provide a training resource on the development of a facility implementation plan (Volume 3); and
- guide the role and contribution of individuals in combatting the epidemic (Volume 4).

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