

# Advanced HIV Diseases (AHD)

Advanced HIV disease, also known as advanced HIV infection or late-stage HIV infection, refers to the stage of HIV (human immunodeficiency virus) infection when the virus has significantly damaged the immune system and has led to severe immunodeficiency. This stage is characterized by a very low CD4 cell count (a type of white blood cell that plays a crucial role in the immune system) or WHO stage 3 or 4 and the presence of opportunistic infections or certain cancers that take advantage of the weakened immune system. The main goal of the project is to include AHD screening into the ART new architecture of the EMR, while at the same time conforming to the latest guidelines and enhancing AHD screening operations and patient monitoring at the facilities

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# Overview

Overview of the AHD module

# Introduction

## What is Advanced HIV Disease (AHD)?

Advanced HIV Disease (AHD) refers to a stage of HIV infection where the immune system is severely weakened, typically defined by:

- CD4 count < 200 cells/mm<sup>3</sup>, or
- WHO clinical stage 3 or 4 conditions.

It often includes opportunistic infections such as TB, cryptococcal meningitis (CM), or other severe clinical manifestations.

## Why AHD Screening is Important

- Early identification of patients at high risk of opportunistic infections.
- Integration with ART workflows to streamline management.
- Compliance with WHO AHD guidelines.

## Integration into EMR

The AHD module is designed to work within the Point of Care (POC) ART module of the national EMR, facilitating early detection and prompt treatment.

## Goals

- Improve patient outcomes through earlier detection.
- Standardize AHD data collection.
- Enable real-time decision-making at the facility level.



# Functional Requirements

The following are the functional capabilities required for the AHD module within the ART POC system.

## 1. User Management

- Create and manage user accounts.
- Assign roles and permissions (e.g. ART Provider, Clerk, Administrator).

## 2. Client Registration

- Capture patient demographics:
  - Name, birth date, gender, region, village, phone number, etc.
- Generate unique patient identifier and barcode.

## 3. AHD Screening Workflow

- Trigger AHD screening based on:
  - Vitals (e.g., fever  $\geq 39^{\circ}\text{C}$ , HR  $\geq 120$  BPM)
  - CD4 count  $< 200$
  - WHO stage 3/4
  - Reported symptoms
- Prompt for TB/CrAg screening, KS symptoms, and drug prescriptions.

## 4. OI Screening & Lab Orders

- Enter and order tests:
  - CD4
  - TB (LAM, microscopy, culture)
  - CrAg (Serum and CSF)

- Capture results and link to patient record.

## 5. Summary & Follow-up

- Provide AHD summary with test results.
- Support next appointment booking based on assessment outcome.

# CD4 Testing and Staging Workflow

## Purpose

This page outlines the clinical workflow for CD4 testing and AHD staging within the ART POC module.

## Step-by-Step

- 1. CD4 Test Entry**
  - Enter CD4 result or place lab order.
  - Capture test location and date.
- 2. Auto-Staging**
  - System computes WHO staging based on symptoms and test results.
  - CD4 < 200 triggers AHD warning.
- 3. Trigger Criteria for AHD Screening**
  - CD4 < 200
  - WHO stage 3 or 4
  - Critical illness flags from vitals
- 4. System Prompt**
  - System presents a pop-up:

“Client meets AHD screening criteria. Proceed to OI screening?”

## Data Elements

Field	Type	Required	Notes
cd4_result	Integer	Yes	Required for AHD trigger
test_date	Date	Yes	

Field	Type	Required	Notes
test_location	Text	Yes	Lab name

# Workflows

# AHD Summary Page

## Purpose

Summarizes all AHD-related screenings, test results, and clinical decisions made during the encounter.

## Displayed Fields

- CD4 count result and date
- TB Screening: Ordered, completed, result
- Serum CrAg: Ordered, completed, result
- CSF CrAg: if applicable
- KS symptoms and Biopsy (if available)
- Final staging and decision made

## Example Output

AHD Status: Positive

- CD4: 137 (23-Apr-2025)

- TB LAM: Negative

- Serum CrAg: Positive

- CSF CrAg: Pending

- KS symptoms: None

Recommended Action: Proceed to CM treatment

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