



**Strengthening  
Interprofessional  
Education  
for HIV**

## Module 24

Paediatric Advanced  
HIV Disease (AHD)



**Learner  
Guide**

### OVERVIEW

#### Goal

The goal of this module is to prepare learners to provide high-quality care to children with advanced HIV disease (AHD).

#### Objectives

By the end of the module, the learner will be able to:

1. Respectfully interview a mother about her own HIV status and those of her contacts when evaluating a child whom you suspect may have perinatally acquired HIV
2. Identify paediatric patients with advanced HIV disease (AHD)
3. Evaluate and stabilize a child with AHD who presents to the hospital with severe illness.
4. Initiate appropriate antiretroviral therapy (ART) for a child with AHD
5. Work as part of an interprofessional team to improve linkage and retention to care for paediatric patients with AHD (IPC)
6. Utilize WHO guidelines to provide a package of preventative medications to paediatric patients with AHD



## Workshop Roadmap

**Duration: 120 minutes**

Duration	Activity	Content
5 min.	Introduction	Ice-breaker activity
15 min.	1. Role play	Interviewing about HIV status
10 min.	2. Small group work	Paediatric AHD recognition
30 min.	3. Small group work/teach back	Initial management of AHD complications
10 min.	4. Small group work	ART dosing
20 min.	5. Small and large group discussion	Overcoming barriers to retention to care
30 min.	6. Small group work	Paediatric AHD package of services
5 min.	Conclusion	

## Workshop Setup

### Additional learner materials (ALM)

We recommend that learners read the ALM as “pre-reading” before starting the module.

- Respiratory Distress Packet
- Malnutrition Packet
- Diarrhoea Packet
- WHO AHD Definition (2021)
- WHO Consolidated Guidelines - ART (2021)
- WHO Consolidated Guidelines - AHD (2021)
- WHO AHD Package of Care – Children and Adolescents (2020)

## Abbreviations

ABC	Abacavir
AHD	Advanced HIV disease
ALM	Additional Learner Materials
ART	Antiretroviral Treatment
AZT	Zidovudine
BP	Blood pressure
DTG	Dolutegravir
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
HRZE	Isoniazid, rifampicin, pyrazinamide, ethambutol
MAC	Mycobacterium avium complex
MAM	Moderate acute malnutrition
MUAC	Mid-upper arm circumference
RAL	Raltegravir
ReSoMal	Rehydration Solution for Malnourished children
RR	Respiratory rate
SAM	Severe acute malnutrition
TDF	Tenofovir
WHO	World Health Organization
3TC	Lamivudine

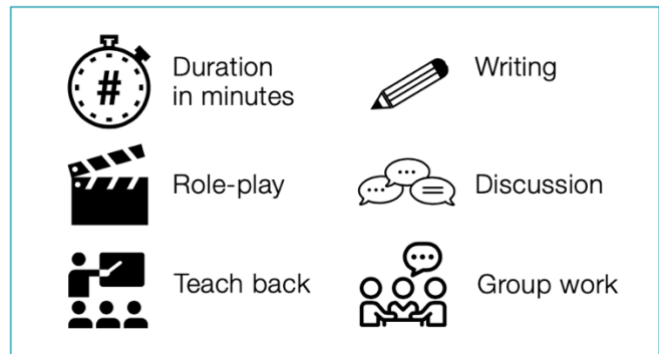
## TEACHING CONTENT WITH OBJECTIVES & ANSWER KEY

### Introduction



Welcome to Module 24 – Paediatric Advanced HIV Disease (AHD). The goal of this module is to prepare learners to provide high-quality care to children with AHD. We recognize that this is a big topic, and that paediatric AHD may involve infants, children, and adolescents with a variety of medical and psychosocial needs in both the inpatient and outpatient settings. Through a clinical case and a series of activities, we aim to highlight some of the most important aspects of providing care to this unique population.

### Activity Components



**Case:** Julius is a 3-year-old boy brought to the outpatient clinic by his mother, Manuella. Manuella has noticed that Julius’s growth has lagged behind other boys his age. She says Julius was an average size when he was born and that his language and motor development have seemed normal to her. Julius has had intermittent episodes of diarrhea for over a year but no other major illnesses. Manuella noticed some sores inside his mouth a few months ago. She confirms that she is able to offer Julius three meals a day and that Julius seems to have a good appetite. She is worried that something serious could be affecting his growth.

### ACTIVITY 1



Respectfully interview a mother about her own HIV status and those of her contacts when evaluating a child whom you suspect may have perinatally acquired HIV.

What factors could explain why Julius may have an abnormally low height and body weight?



Given the possibility that Julius’s low height and body weight could be associated with HIV, you want to interview Manuella about her HIV status and the HIV status—if known—of her contacts. You will be assigned a partner and each of you will have the opportunity to play the role of Manuella and the health care professional interviewing her. The healthcare professional should try to elicit an HIV history from Manuella (including any knowledge of HIV among her sexual contacts) and conclude the interview by recommending HIV testing for Julius.

In pairs, take turns playing the role of Manuella and the healthcare professional



**Role: Manuella (mother of Julius)**

Manuella tested positive for HIV during her pregnancy with Julius. She has not disclosed her status to anyone or started treatment due to fears of stigma and discrimination. She is worried that Julius might have HIV too.

**Role: Healthcare Professional**

Interview Manuella using patient-centred interviewing strategies.

## ACTIVITY 2



### Identify pediatric patients with advanced HIV disease (AHD)

**Case (continued):** Manuella reveals that she was diagnosed with HIV during her pregnancy with Julius but did not seek follow-up care because of concerns about stigma and discrimination. She has never taken antiretroviral therapy (ART) and has not disclosed her HIV status to anyone else. She has one sexual partner and is not aware of his HIV status. After counseling, Manuella agrees to have Julius tested for HIV and to return to the clinic later that week to discuss the results. The next day the test returns positive.

Does Julius have advanced HIV disease (AHD)? How can the diagnosis of AHD be made in children living with HIV? Use the “WHO AHD Definition (2021)” document in Additional Learner Materials (ALM) to fill in the blanks below.



**Criteria for AHD Diagnosis in Children:**

- All children with HIV who are <5 years old are considered to have AHD except those ages \_\_\_\_\_ who are \_\_\_\_\_
- Children age  $\geq 5$  years old have AHD if \_\_\_\_\_
- Does Julius have AHD? \_\_\_\_\_

## ACTIVITY 3



### Evaluate and stabilize a child with AHD who presents to the hospital with severe illness.

**Case (continued):** Unfortunately, Manuella and Julius do not return to the clinic and they are lost to follow-up. Six months later (when Julius is 3 years and 8 months old), Manuella brings Julius to the district hospital. She reports that Julius has failed to gain weight and has become lethargic with little intake of food and water the last 3 days. She says that Julius has had watery diarrhoea for four weeks and two weeks ago he developed a productive cough.

Vital signs are as follows: weight of 10.7kg, mid-upper arm circumference (MUAC) of 105mm, heart rate (HR) of 140 beats/min, blood pressure (BP) of 92/48, and respiratory rate (RR) of 35 breaths/min. A pulse oximeter to measure his oxygen saturation is not available.

On examination, Julius is lethargic and cachectic. He is using accessory respiratory muscles to breathe and he has crackles over his right lung field but no cyanosis. His bowel sounds are hyperactive and he has no abdominal tenderness. There is mild pitting oedema over his legs.

In addition to having AHD, you recognize that Julius will require triage and stabilization and evaluations for malnutrition, diarrhoea, and respiratory distress. In your small groups, you will be assigned to work through the initial evaluation and management of one of these three conditions and will then learn about the other conditions as a large group.



Malnutrition Questions: use the “Malnutrition Packet” in ALM to answer these questions

How are severe acute malnutrition (SAM) and moderate acute malnutrition (MAM) diagnosed in children between the ages of 6 and 59 months? Does Julius have MAM or SAM?



When should children with SAM be treated in an inpatient (hospital) setting?

What inpatient treatments should be given to children with malnutrition between the ages of 6 and 59 months?



Diarrhoea Questions: use the “Diarrhoea Packet” in ALM to answer these questions



Diarrhoea is often associated with dehydration, which can be severe or moderate. How are severe and moderate diarrhoea diagnosed?

What inpatient treatments should be given to children with acute diarrhoea? How do rehydration strategies change depending on if the child has severe dehydration or some dehydration? How does the presence of dysentery (frequent loose stools mixed with visible blood) change the treatment of diarrhoea?



How is treatment different for children with persistent diarrhoea ( $\geq 14$  days of diarrhoea)?



**Respiratory Distress Questions:** use the “Respiratory Distress Packet” in ALM to answer these questions.

Respiratory distress in children is commonly caused by a variety of respiratory infections but it is important to remember that there are a number of other causes of respiratory distress. Using Table 6 in the Respiratory Distress Packet (in the additional learner materials) make two lists below: one for types of respiratory infections that may lead to respiratory distress and another for causes of respiratory distress that are not due to respiratory infections.



**Types of respiratory infections that may lead to respiratory distress:**

**Causes of respiratory distress that are not due to respiratory infections:**

Most children with pneumonia and HIV will have infections from the same bacterial organisms as children without HIV. However, special consideration should be given to two pulmonary infections that can cause severe disease in children with HIV: tuberculosis and Pneumocystis pneumonia. What clues should you look for, that could indicate a diagnosis of pulmonary tuberculosis or Pneumocystis pneumonia?





What studies should be sent when evaluating a patient with HIV and pneumonia? What initial treatments should be offered for severe pneumonia?



## ACTIVITY 4



### Initiate appropriate antiretroviral therapy (ART) for a child with AHD.

**Case (continued):** Julius is stabilized and treatment is initiated for malnutrition and bacterial pneumonia. As he is stabilized, his medical team recognizes that he should start ART as soon as possible. The medical team does extensive counseling with Julius’s mother about the benefits of starting ART for both Julius and herself. They work to address her stigma, using empathetic and non-judgmental language, and enlist a peer counselor to provide additional support. Plans are made to initiate ART in the hospital for Julius. At this point, Julius weighs 10.8kg and his kidney function is normal.



In small groups, use the excerpt from the “WHO Consolidated Guidelines - ART (2021)” in ALM to answer the following questions:



What is the preferred first-line ART regimen for Julius?



What type or types of pill formulations are preferred for Julius?



Write out how you would dose the first-line ART regimen for Julius using a once-daily dosing schedule.

## ACTIVITY 5



Work as part of an interprofessional team to improve linkage and retention to care for paediatric patients with AHD (IPC).

**Case (continued):** Julius is started on ART and tolerates his first few days of therapy. He continues nutritional support, and his diarrhoea improves to the point that he is only having two loose bowel movements a day. He is no longer in respiratory distress. His clinical team thinks that he is medically stable for discharge back to the community. There is concern, however, that he may not be retained in care given that he was lost to follow-up for many months before coming to the hospital with severe complications from HIV.

Every health professional can take actions that improve the linkage and retention to care among people with HIV. Keep in mind that efforts to retain young children like Julius in care should focus on addressing barriers that may impact the child's caregivers. For caregivers who are also living with HIV, it is vital that they are also engaged in HIV care as this will improve the chances that the child will also be retained.

In your small groups, explore barriers to retention to care in your context. Next to each barrier, list strategies that can be taken to improve retention to care. These strategies may be taken by healthcare professionals or community or governmental organizations in your context.



Barriers to retention to care	Strategies to improve retention
Shame/discrimination/stigma	Avoiding judgmental/stigmatizing language with patients, expressing empathy; community campaigns to normalize HIV

Barriers to retention to care	Strategies to improve retention

## ACTIVITY 6



### Utilize WHO guidelines to provide a package of preventative medications to paediatric patients with AHD

**Case (continued):** Julius is discharged back to home in the community. At the time of discharge, Manuella and Julius are given a specific appointment with a local clinic that provides HIV care to both children and adults with HIV (her phone number is also shared with the local clinic to contact her in the event that they don't make it to the appointment). A summary of Julius's hospital course is also given to Manuella with instructions that she bring this document to Julius's first appointment. Julius is given a one-month supply of all medications to bridge him to this next appointment and Manuella receives counseling on medication administration and encouragement to follow up in the same clinic so that she can also be started on ART. Finally, Manuella and Julius are connected to an organization of community healthcare workers who agree to send a peer support to Manuella's home and accompany her to these initial appointments.

Manuella, Julius, and the community healthcare worker all attend Julius and Manuella's first appointment. Manuella also brings Julius's 26-month-old brother, Jay Jay to this appointment. Jay Jay does not appear to have any acute medical problems. He >18 months old and has weaned from breastfeeding so he is tested for HIV with an antibody test that returns positive.

Since Jay Jay has HIV and is under 5-years-old he is considered to have AHD (under the age of 5, the only children with HIV who are not considered to have AHD are those ages 3 or 4 who are clinically stable and on ART for at least a year). In the following questions, you will be asked what screening, treatment, and prevention measures should be considered for Jay Jay and all children with AHD (note that weight-based dosing of prophylactic medications is detailed in Table 3 of "WHO AHD Package of Care – Children and Adolescents (2020)").

How should children with AHD be screened for TB? Who should be offered TB preventive therapy if active TB is excluded based on screening questions and/or tests? Fill in the table below using the “WHO Consolidated Guidelines - AHD (2021)” (pages 257-260) and “WHO AHD Package of Care – Children and Adolescents (2020)” documents in ALM:



Patient group with AHD	Symptoms evaluated on screening	Tests performed if symptoms screen positive (if available)	Offer TPT if active TB ruled out based on symptoms or tests?
<12 months old and no contact with person with TB	Cough, fever, poor weight gain	Chest x-ray, LAM. Sputum for AFB smear and/or Xpert	
<12 months old and contact with person with TB			
≥12 months to <10 years old			
Adolescents (≥10 years old)			
Any child or adolescent with CD4 cell count <100 (or <200 in inpatient setting) with no symptoms of TB	N/A		

Which TPT regimen can be given without the possibility of drug-drug interactions with ART?



Among children and adolescents with AHD, who should be screened for cryptococcal meningitis even in the absence of symptoms of meningitis? Who should receive pre-emptive treatment for cryptococcosis? Use the “WHO Consolidated Guidelines - AHD (2021)” in ALM.



Among children and adolescents with AHD, who should start co-trimoxazole prophylaxis? Use the “WHO Consolidated Guidelines - AHD (2021)” (page 226) in ALM.

Among children and adolescents with AHD, fill in the table below to describe when vaccinations should be given for TB (BCG vaccine), human papilloma virus (HPV), measles, and pneumococcus? Use the “WHO AHD Package of Care – Children and Adolescents (2020)” in ALM.



**Answer:**

Vaccine	Recommended group with AHD
BCG	Neonates on ART once CD4 % is >25% (some countries will administer to all neonates regardless of HIV status or exposure)
HPV	
Measles	
Pneumococcal conjugate	

**Conclusion:**



**References/Resources:**

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