

Module 3 Clinical Care for Adolescents Living with HIV



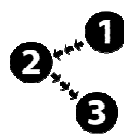
Total Module Time: 270 minutes (4 hours, 30 minutes)

Learning Objectives

After completing this module, participants will be able to:

- Discuss the needs of adolescents who acquired HIV perinatally versus those who acquired HIV during childhood or adolescence
- Discuss the importance of comprehensive care for ALHIV
- Define the package of HIV-related care and treatment for adolescents

Methodologies



- Interactive trainer presentation
- Large group discussion
- Peer teaching
- Case studies
- Small group work

Materials Needed




- Slide set for Module 3
- Flip chart and markers
- Tape or Bostik (adhesive putty)
- Participants should have their Participant Manuals. The Participant Manual contains background technical content and information for the exercises.
- National adult/adolescent and pediatric ART and TB guidelines, as well as other relevant national guidelines – to be used as reference materials

Resources



- WHO. (2010). *Antiretroviral therapy for HIV infection in adults and adolescents, Recommendations for a public health approach: 2010 revision*. Geneva: WHO. Available at: <http://www.who.int/hiv/pub/arv/adult2010/en/index.html>
- WHO. (2010). *Antiretroviral therapy for HIV Infection in infants and children: Towards universal access, Recommendations for a public health approach: 2010 revision*. Geneva: WHO. Available at: <http://www.who.int/hiv/pub/paediatric/infants2010/en/index.html>

	<ul style="list-style-type: none"> • WHO. (2006). <i>Guidelines on co-trimoxazole prophylaxis for HIV-related infections among children, adolescents and adults, Recommendations for a public health approach</i>. Geneva: WHO. Available at: http://www.who.int/hiv/pub/plhiv/ctx/en/index.html • WHO, Department of HIV/AIDS and Stop TB Department. (2011). <i>Guidelines for intensified tuberculosis case-finding and isoniazid preventive therapy for people living with HIV in resource-constrained settings</i>. Geneva: WHO. Available at: http://www.who.int/hiv/pub/tb/9789241500708/en/index.html • WHO. (2010). <i>IMAI one-day orientation on adolescents living with HIV. Facilitator guide</i>. Geneva: WHO Press. Geneva: WHO. Available at: http://www.who.int/maternal_child_adolescent/documents/fch_cah_9789241598972/en/index.html
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Advance Preparation	
	<ul style="list-style-type: none"> • Read through the entire module and ensure that all trainers are prepared and comfortable with the content and methodologies. • Exercise 1 requires advance preparation. • Review the appendices so that you can refer to them and integrate them into your presentation.

Session 3.1: HIV Acquisition — Modes and Implications for Care and Treatment

Activity/Method	Time
Interactive trainer presentation and large group discussion	25 minutes
Questions and answers	5 minutes
Total Session Time	30 minutes

Session 3.2: The Package of Adolescent HIV Care and Treatment Services

Activity/Method	Time
Interactive trainer presentation, peer teaching, and large group discussion	165 minutes
Exercise 1: The Adolescent Package of Care: Case studies in small groups and large group discussion	60 minutes
Questions and answers	5 minutes
Review of key points	10 minutes
Total Session Time	240 minutes

Session 3.1

HIV Acquisition — Modes and Implications for Care and Treatment



Total Session Time: 30 minutes



Trainer Instructions
Slides 1-4

Step 1:

Begin by reviewing the Module 3 learning objectives and the session objective, listed below.

Step 2:

Ask participants if they have any questions before moving on.

Session Objective

After completing this session, participants will be able to:

- Discuss the needs of adolescents who acquired HIV perinatally versus those who acquired HIV during childhood or adolescence



Trainer Instructions
Slides 5-13

Step 3:

Explain that some ALHIV will have acquired HIV perinatally and some will have acquired HIV later in childhood or adolescence. Then ask participants:

- *How many adolescents living with HIV are you currently caring for in your clinical setting?*
- *How many of the adolescents who receive care in your clinic acquired HIV perinatally versus behaviorally (that is, during childhood or adolescence)?*

Step 4:

Next, ask participants:

- *What are some of the similarities or differences you have noticed between adolescents who were perinatally infected versus those who were behaviorally infected?*
- *How might their challenges differ based on whether they were perinatally vs. behaviorally infected?*

Record responses on flip chart and fill in as needed using the content below and in the slides.

Note to trainers: Content below includes mention of HIV transmission via sexual abuse and rape. This is a very important topic (and it will be discussed again in Module 10), however, because this is an issue that may affect some participants and trainers personally (including the adolescent co-trainers), it is important that information on this topic be presented factually, yet also in a sensitive way.



(optional) Ask the adolescent co-trainer to share his or her thoughts and experiences regarding the needs of perinatally infected versus behaviorally infected adolescents.



Make These Points

- Some ALHIV will have acquired HIV perinatally and some will have acquired HIV later in childhood or adolescence. The needs of these two groups may differ significantly.
- The way an adolescent acquired HIV can influence when and how he or she comes into contact with the health system and his or her clinical and psychosocial needs.

HIV Transmission in Adolescents

It is important for health workers to be aware that there are 2 specific groups of ALHIV they will likely serve at the clinic.

Adolescents who acquired HIV perinatally

- This group of adolescents acquired HIV via MTCT — during pregnancy, labor, delivery, or breastfeeding.
- As pediatric HIV treatment programs have become more available and accessed, there are more and more perinatally infected children who survive into adolescence and adulthood.
- Adolescents in this group may have been enrolled in HIV care since infancy. Others may have been identified later in life during an acute illness or through a testing campaign.
- Adolescents in this group may have initiated ART in infancy and taken various ART regimens by the time they reach adolescence. Others may still be taking the initial regimen they started during early childhood.
- Several recent studies suggest that there are significant numbers of perinatally infected adolescents who, despite being symptomatic, have been “missed” by the health care system.
- Perinatally infected adolescents may or may not have been fully disclosed to (depending on their age and their caregivers). Unlike adolescents who acquire HIV during adolescence, usually at least 1 caregiver of a perinatally infected adolescent knows about the adolescent’s HIV-status.

Challenges faced by adolescents with perinatally-acquired HIV and their families often include disclosure of HIV-status to the child and the mother's acceptance of her HIV-status (including her commitment to, enrollment in, and adherence to lifelong care and treatment). Other challenges may include:

- For the family/caregivers: the demands of caring for a child with chronic HIV infection — balancing multiple appointments, tests, and medications
- Developmental delays and physical disabilities in the child/adolescent
- The complexity of living in a home affected by HIV, particularly if the adolescent's caregivers are unemployed, unwell, or have died, or if the child/adolescent was adopted and this has not been disclosed to him or her yet

Adolescents who acquired HIV during childhood or adolescence

- This group of adolescents likely acquired HIV through sexual intercourse or, less frequently, through a blood transfusion, through sharing cutting/piercing instruments, or through injecting drug use.
- It is important to recognize that some adolescents in this group will have acquired HIV through sexual abuse, including rape (sexual abuse will be discussed further in Module 10).
- Adolescents in this group may have learned their HIV-status only recently and generally have not had extended contact with the health care system. They are often identified via HIV testing programs (voluntary counseling and testing (VCT), routine provider-initiated testing and counseling (PITC), etc.).
- Some adolescent girls are identified as HIV-infected when they seek antenatal care and receive routine testing as part of PMTCT services.

Many adolescents who acquire HIV during adolescence fall into WHO clinical stage 1 or 2, feel well, and do not yet need ART. However, it is important that adolescents not eligible for ART still receive ongoing care, support, and monitoring for ART eligibility.

The challenges faced by adolescents who acquired HIV during childhood or adolescence often relate to:

- Acceptance of HIV-status
- Disclosure to family, partner, and peers
- If raped or abused, dealing with the emotional and physical repercussions of that experience


Both adolescents with perinatally-acquired HIV and those who acquired HIV during childhood or adolescence may have issues related to retention in care (especially if they are not eligible for ART), adherence to ART, positive living, and positive prevention. Both groups of ALHIV are also likely to face stigma and discrimination, to worry about their futures, and to be concerned about finding a partner and, in most cases, starting a family.

See Table 3.1 for additional information. Keep in mind that these are generalizations and therefore may not apply to all adolescents. Each person is unique!

Table 3.1: Differences and similarities between ALHIV based on transmission period

DIFFERENCES (AND SIMILARITIES) RELATED TO:	PERIOD WHEN HIV WAS ACQUIRED	
	PERINATAL (dependant on current age and stage of development)	ADOLESCENCE
AGE AT PRESENTATION IN ADOLESCENT CARE	<ul style="list-style-type: none"> May present at an earlier age, but tend to be younger: 10–19 years 	<ul style="list-style-type: none"> Tend to be older: 15–19 years
PHYSICAL DEVELOPMENT	<ul style="list-style-type: none"> May be delayed: short stature and late puberty 	<ul style="list-style-type: none"> Normal physical development and puberty
SEXUAL & REPRODUCTIVE HEALTH	<ul style="list-style-type: none"> Not yet sexually active (or, if older, may be thinking about sex or have already had sexual debut) 	<ul style="list-style-type: none"> Probably sexually active May have been sexually abused
	Similarities: <ul style="list-style-type: none"> May need SRH services, including safer sex education and support May want children 	
RELATIONSHIPS/ MARRIAGE	<ul style="list-style-type: none"> May or may not be in a relationship (depending on age and development) May want intimate relationship May want marriage 	<ul style="list-style-type: none"> Probably in a sexual relationship May want marriage
DISCLOSURE	<ul style="list-style-type: none"> Primary caregiver knows adolescent’s HIV-status Caregiver needs to disclose to adolescent if he or she does not already know status 	<ul style="list-style-type: none"> Coping with new diagnosis Coping with disclosure to primary caregiver Coping with disclosing to partner
	Similarities: <ul style="list-style-type: none"> Coping with process of disclosing to family and peers 	
FAMILY SUPPORT	<ul style="list-style-type: none"> Living with parents or caregivers, who typically know adolescent’s HIV-status so can offer support 	<ul style="list-style-type: none"> Support system for HIV depends on disclosure
ECONOMIC SUPPORT	<ul style="list-style-type: none"> May be unstable if adolescent has been orphaned 	<ul style="list-style-type: none"> May have few resources (money, information, experience) if adolescent has left home
ART	<ul style="list-style-type: none"> Often on ART for many years 	<ul style="list-style-type: none"> May not need ART yet
	Similarities: <ul style="list-style-type: none"> Adherence challenges in childhood and adolescence 	
STIGMA/”BLAME”	<ul style="list-style-type: none"> Less likely to be blamed Considered “innocent” 	<ul style="list-style-type: none"> More likely to be blamed because of “irresponsible” behavior
	Similarities: <ul style="list-style-type: none"> Face stigma 	

Adapted from: WHO. (2010). *IMAI one-day orientation on adolescents living with HIV. Facilitator guide*. Geneva: WHO.



Trainer Instructions

Slide 14

Step 5: Allow 5 minutes for questions and answers on this session.

Session 3.2

The Package of Adolescent HIV Care and Treatment Services



Total Session Time: 240 minutes (4 hours)



Trainer Instructions

Slides 15-16

- Step 1:** Review the session objectives, listed below.
- Step 2:** Ask participants if they have any questions before moving on.

Session Objectives

After completing this session, participants will be able to:

- Discuss the importance of comprehensive care for ALHIV
- Define the package of HIV-related care and treatment for adolescents



Trainer Instructions

Slides 17-23

- Step 3:** Ask participants to raise their hand if they have completed training in **pediatric** HIV care and treatment. Then ask who has completed training in **adult** HIV care and treatment.

Remind participants that adolescent HIV care and treatment draws on the knowledge and skills learned in both pediatric and adult trainings. Ideally, participants should be familiar with both topics before attending this training.

- Step 4:** Ask participants to briefly recall the key differences and similarities between providing HIV care and treatment services to adolescents and providing these services to children or adults. (These were discussed in Module 2.)
- Stress the point that adolescents are neither big children nor little adults and that the type of care they receive should depend on their age and development.

Step 5:

Introduce this section by providing an overview of approaches to service provision for ALHIV using the content below and in the slides. Emphasize the importance of ensuring that care is tailored to the individual needs of each adolescent client, regardless of age, gender, and how he or she acquired HIV.

Tell participants that, in this session, we will focus briefly on the approaches and components to adolescent HIV care and treatment, but that they should refer to national guidelines and training packages for pediatric and adult care and treatment for more detailed information (unless there are adolescent-specific guidelines available, in which case these should be referenced).

**Make These Points**

- As with HIV care and treatment programs for children and adults, HIV care and treatment programs for adolescents should include a broad package of services and support, including much more than just the provision of ART.
- Adolescent services should be age- and developmentally-appropriate and should be responsive to the needs of both perinatally and behaviorally infected clients.
- “1-stop shopping” (offering multiple services in 1 building, also referred to as “co-location” of services) is important to meet the needs of adolescents, who are unlikely to go from place to place to access needed services. It is also important that services be youth-friendly in order to encourage retention in care.
- In this session, we will focus primarily on reviewing the clinical care for ALHIV. Psychosocial and adherence support needs of ALHIV will be discussed in detail in later modules.

Approaches to Service Provision¹

The goals of comprehensive HIV care are to:

- Reduce HIV-related illness and death
- Improve quality of life
- Improve the lives of families and communities affected by HIV
- Prevent further spread of HIV

Adolescents with perinatally-acquired HIV:

- Have typically been in care since they were young (although this is not always the case)
- Likely began their experience in HIV care and treatment when they were children, under the care of health workers with expertise in pediatrics (who followed pediatric guidelines)
- Have typically been on ART for many years and may even be on a 2nd or 3rd line regimen
- Often look young for their age and, due to delays in development and overprotection by caregivers, are often young socially as well

Young people who acquired HIV during adolescence, on the other hand:

- May be socially experienced, possibly more so than many of their peers
- May be relatively inexperienced in terms of navigating the health care system and dealing with health workers
- Are typically treated as adults, with their treatment directed by adult guidelines

Remember: Regardless of how long they have been infected or how they acquired HIV, the package of care for all ALHIV is very similar. The approach for all adolescents should be family-centered and developmentally appropriate. While the components of the adolescent package of HIV care closely resemble those of the adult package, **the way** these components are delivered has an important impact on their uptake and success among adolescents.

To be effective, adolescent services must:

- Be integrated
- Be age and developmentally appropriate
- Be responsive to the needs of both perinatally infected adolescents and those infected later in childhood or adolescence
- Be empowering; in other words, they must encourage adolescents to take responsibility (as they are developmentally able) for their own health by taking responsibility for their care, for their treatment, and for living positively
- Emphasize both care **and** treatment; and emphasize retention in care, whether or not a particular adolescent is eligible for ART

The importance of 1-stop shopping for adolescents

We can increase adolescent clients' ability to access and benefit fully from services by:

- Ensuring services are integrated, or at least co-located ("**1-stop shopping**")
- Ensuring services are youth-friendly (see Module 2)



Trainer Instructions

Slides 24-27

Step 6:

Provide an overview of family-centered care. Initiate the discussion by asking the following questions and fill in using the content below and in the slides:

- *What is family-focused care?*
- *What can we, as health workers, do to make our care "family-focused?"*



Make These Points

- As with HIV care and treatment for clients of any age, it is important to provide family-focused care to adolescents.
- Health workers should always ask adolescents about their living and family situations and, when appropriate, engage family members in care and treatment.
- When appropriate, health workers should also ask about partners and encourage steady partners to come to the clinic for education and testing.

The Importance of Family-focused Care

- Family-focused care means that all members of the multidisciplinary care team think about the needs of all family members, and not just those of the adolescent client.
- It also means thinking about the linkages between the individual client, the client's family, and the community as a whole.
- Depending on the client's age and family situation, health workers should make it a routine practice to ask him or her about caregivers and other family members. They should also encourage the client to bring family members to the clinic for services, if needed. Health workers can provide family members with ongoing education and information on HIV care and treatment, adherence counseling and support, and general support on caring for ALHIV.
- With older adolescents, health workers should also enquire about partners and children. When the adolescent is ready, he or she should be encouraged and supported to bring his or her partner to the clinic for information on HIV, safer sex, and HIV testing and treatment.

Remember: Adolescents' day-to-day lives include their families, partners, children, friends, and other community members, so it is important to ask about them at every visit!



Trainer Instructions

Slides 28-34

Step 7:

Ask participants:

- *Is anyone familiar with the "5 A's"?*
- *Why do you think the "5 A's" might be important in a clinical module?*
(Possible answer: even clinical information must be communicated in a way that is sensitive and client-centered! When information is not provided in a manner that is non-judgmental and sensitive, clients are more likely to feel alienated and drop out of care.)

Remind participants that the 5 "A's" are part of the Integrated Management of Adolescent and Adult Illness (IMAI) approach to chronic care. Review each of the 5 "A's" with participants, using the content below and in the slides, and make sure that each step is understood. Tell participants that they will be using the 5 "A's" to work through case studies both in this module and throughout the training.



Make These Points

- The 5 "A's" are a principle of chronic care developed by the WHO and included in the IMAI package of materials.
- The 5 "A's" include: ASSESS, ADVISE, AGREE, ASSIST, and ARRANGE.
- Health workers can use the 5 "A's" when providing clinical and psychosocial care and support to adolescent clients (and caregivers).

Using the 5 “A’s” in Consultations with Adolescent Clients

The 5 “A’s” are part of the WHO Integrated Management of Adolescent and Adult Illness (IMAI) guidelines on working with clients (including adolescents) who have chronic conditions (including HIV). Some of the most surprising examples of poor patient care have stemmed from health workers communicating clinical information to clients in a manner that is abrupt, insensitive, and completely dismissive of their potential reaction. The 5 “A’s” offer a framework for communicating both psychosocial and clinical information to clients. The 5 “A’s” support the provision of information and support in a manner that is sensitive and client-centered.

Table 3.2: Using the 5 “A’s” during clinical visits with adolescents

The 5 “A’s”	More Information	What the Health Worker Might Say
ASSESS	<ul style="list-style-type: none"> Assess the client’s goals for the visit Assess the client’s clinical status, classify/identify relevant treatments, and/or advise and counsel Assess risk factors Assess the client’s (caregiver’s) knowledge, beliefs, concerns, and behaviors Assess the client’s understanding of the care and treatment plan Assess adherence to care and treatment (see Module 8) Acknowledge and praise the client’s efforts 	<ul style="list-style-type: none"> <i>What would you like to address today?</i> <i>What can you tell me about _____?</i> <i>Tell me about a typical day and how you deal with _____?</i> <i>Have you ever tried to _____? What was that like for you?</i> <i>To make sure we have the same understanding, can you tell me about your care and treatment plan in your own words?</i> <i>Many people have challenges taking their medicines regularly. How has this been for you?</i>
ADVISE	<ul style="list-style-type: none"> Use neutral and non-judgmental language Correct any inaccurate knowledge and gaps in the client’s understanding Counsel on risk reduction Repeat any key information that is needed Reinforce what the client needs to know to manage his or her care and treatment (for example, recognizing side effects, adherence tips, problem-solving skills, when to come to the clinic, how to monitor one’s own care, where to get support in the community, etc.) 	<ul style="list-style-type: none"> <i>I have some information about _____ that I’d like to share with you.</i> <i>Let’s talk about your risk related to _____. What do you think about reducing this risk by _____.</i> <i>What can I explain better?</i> <i>What questions do you have about _____?</i>
AGREE	<ul style="list-style-type: none"> Negotiate WITH the client about the care and treatment plan, including any changes Plan when the client will return 	<ul style="list-style-type: none"> <i>We have talked about a lot today, but I think we’ve agreed that _____. Is this correct?</i> <i>Let’s talk about when you will return to the clinic for _____.</i>
ASSIST	<ul style="list-style-type: none"> Provide take-away information on the plan, including any changes Provide psychosocial support, as needed Provide referrals, as needed (to support groups, peer education, etc.) Address obstacles Help the client come up with solutions and strategies that work for him or her 	<ul style="list-style-type: none"> <i>Can you tell me more about any obstacles you’ve faced with _____ (for example, taking your medicines regularly, seeking support, practicing safer sex)?</i> <i>How do you think you can overcome this obstacle?</i> <i>What questions can I answer about _____?</i> <i>I want to make sure I explained things well — can you tell me in your own words about _____?</i>
ARRANGE	<ul style="list-style-type: none"> Arrange a follow-up appointment Arrange for the client to participate in a support group or group education sessions, etc. Record what happened during the visit 	<ul style="list-style-type: none"> <i>I would like to see you again in _____ for _____. It’s important that you come for this visit or let us know if you need to reschedule.</i> <i>What day/time would work for you?</i>

Sources:

WHO. (2004). *General principles of good chronic care: IMAI. Guidelines for first-level facility health workers*. Geneva: WHO.
 WHO. (2010). *IMAI one-day orientation on adolescents living with HIV*. Geneva: WHO.

The 5 “A’s” are referred to throughout this training and developed further in Module 5. Participants will have an opportunity to practice the 5 “A’s” towards the end of this session.



Trainer Instructions

Slides 35-38

Step 8:

First, introduce comprehensive care for ALHIV using the content below and in the slides.

Step 9:

Next, explain to participants that we will now discuss the clinical assessment of ALHIV at the 1st (enrollment) visit and at follow-up visits. Refer participants to Tables 3.3, 3.4, and 3.5 in their Participant Manuals. Cover the information in these tables by facilitating a **peer teaching activity**:

- Ask participants to break into 3 groups (if there are more than 21 participants, break into more than 3 groups).
- Ask participants to read Tables 3.3, 3.4, and 3.5 to themselves.
- Assign 1 of the 3 tables to each group.
- Give the small groups about 20 minutes to prepare a 5-minute teach-back. Explain that, at the end of this 20-minute period, each small group should be prepared to teach the content of their table to the entire group using engaging training methods (discourage lecturing!).
- Provide the small groups with support as they prepare their presentations.
- Once the groups have finished preparing their teach-back presentations, invite the first group to present Table 3.3.
- Throughout the presentation, ensure that the discussion moves along at a fairly quick pace, but that the content is also covered adequately and that all participants are comfortable with the clinical assessment steps.
- Following the presentation(s) on Table 3.3, invite comments and questions from other participants.
- Then, invite the next group(s) to present Table 3.4. Ask the presenters to skim over or skip the content that has already been taught by previous groups.
- Finally, invite the last group(s) to present Table 3.5, again asking them skip content that has already been covered.

Remind participants that, following the training, these tables can serve as useful job aides.



(optional) Ask the adolescent co-trainer to share more about his or her clinical visit schedule, including how he or she remembers to attend these appointments. Also ask if he or she can describe some of the things that happened during a recent clinic visit.



Make These Points

- The clinical assessment for a client with HIV needs to be thorough and should focus on clinical, laboratory, psychosocial, nutrition and social parameters.
- The checklists for the ALHIV clinical visit are detailed and include steps for each member of a multidisciplinary team. It could take more than one visit to complete the enrollment visit checklist.
- Always refer to national guidelines and training packages for guidance and additional details on pediatric and adult care and treatment.

Comprehensive Care for ALHIV

The care of the child with HIV is directed by pediatric HIV guidelines. However, as the child ages and develops, his or her care transitions to follow adult HIV guidelines. The care of adolescents is often guided by pediatric guidelines, adult guidelines, or both. Although pediatric and adult guidelines have many similarities (for example, criteria for ART initiation for children over 5 years of age is the same as for adults), their differences give health workers the flexibility to tailor the package of care to meet each adolescent client's needs.

Comprehensive care for ALHIV includes the provision of the services listed in the clinical assessment checklists in Tables 3.3, 3.4 and 3.5 below.

- **Table 3.3** lists the steps to be conducted at the initial, or enrollment, visit. As many adolescents with perinatally-acquired HIV have been in care for years, they will have undergone an enrollment assessment as infants or children. As such, the checklist in Table 3.3 is for use at **entry into the adolescent program**. Note that it may take several visits to complete all the steps included in this assessment
- **Table 3.4** lists the steps to be conducted at follow-up visits for clients not on ART.
- **Table 3.5** lists the steps to be conducted at follow-up visits for clients on ART.

Table 3.3: Key steps — enrollment visit

✓	Steps
	1. Take history
	<ul style="list-style-type: none"> • Take a complete medical and social history, including prenatal, birth, and family history • Confirm HIV infection status • Identify concomitant medical conditions (e.g., TB disease, hepatitis B or C infection, other co-infections or OIs, pregnancy in adolescent girls) • Enquire about disclosure to the adolescent (if perinatally infected, take time alone with caregiver to discuss) or disclosure to others • Enquire about HIV and treatment status of family and household members • Enquire about concomitant medication (e.g., CTX, oral contraceptives, traditional therapies) • Review immunization status • If clinically indicated, undertake a nutritional status assessment • Ask about sexual activity and condom and other contraceptive use (alone with adolescent) • Conduct psychosocial assessment and provide counseling, referrals, and support (see Module 5 and <i>Appendix 3B: HEADSS Interview Questions</i>) • Assess any other practical needs, such as legal support, housing, school/career, and financial
	2. Conduct physical exam
	<ul style="list-style-type: none"> • Assess growth and nutrition (weight, height, and BMI), as appropriate for age • Assess development and neurodevelopment, as appropriate for age • Conduct physical examination, including Tanner staging • Conduct skin exam (tattoos, bruises, acne) and scoliosis evaluation • Screen for STIs in adolescents who are sexually active • Screen for pregnancy in sexually active adolescent females • Screen for TB; screen for other OIs and other concomitant conditions, diarrhea, malaria • Discuss findings from physical examination with ALHIV and his or her caregivers
	3. Make laboratory assessment plan
	<ul style="list-style-type: none"> • Conduct baseline tests according to local resources and guidelines: <ul style="list-style-type: none"> • CD4: recommended; HBsAg: desirable; other tests, if clinically indicated
	4. Make assessments
	<ul style="list-style-type: none"> • Review findings from history, physical assessment, and laboratory work and make diagnosis • Assess WHO clinical stage. If on ART, determine if there are any new stage 3 or 4 events • If not on ART, determine if ALHIV meets the criteria for ART initiation • Decide if CTX or IPT are indicated
	5. Make decisions
	<ul style="list-style-type: none"> • Discuss prevention of illnesses (OIs, including TB, STIs, diarrhea, malaria, and other illnesses) and initiation or continuation of CTX, IPT, and any other medications • If applicable, discuss prevention of STIs, positive prevention, and prevention of unintended pregnancy; provide condoms and contraceptive counseling and methods • For those eligible for ART, initiate adherence preparation • Discuss treatment of current illnesses identified in physical examination • If eligible, initiate CTX or IPT; discuss adherence and side effects • If applicable, provide nutrition counseling and support • Provide counseling, support, and referrals based on psychosocial assessment and needs

✓	Steps
	6. Agree on an action plan
	<ul style="list-style-type: none"> • Agree on key action steps from history and physical examination
	<ul style="list-style-type: none"> • Discuss when to seek medical care; for example, with unexpected illness or side effects
	<ul style="list-style-type: none"> • Reiterate agreed upon plan to support adherence to medications
	<ul style="list-style-type: none"> • Discuss steps to live positively and prevent further HIV infections
	<ul style="list-style-type: none"> • Agree on key action steps based on psychosocial assessment (e.g., reduce alcohol intake, discuss HIV-status with friend, join support group)
	<ul style="list-style-type: none"> • Provide referrals, including name of person/agency, address, and contact information of referral point. If possible, contact referral and make appointment on behalf of ALHIV
	<ul style="list-style-type: none"> • Schedule next visit as per national guidelines: <ul style="list-style-type: none"> • If pre-ART: every 3–6 months, with more frequent visits if CD4 is approaching treatment criteria • If on ART: every 3 months, with more frequent visits if clinically unwell or CD4 is declining • Schedule earlier appointment if required for follow-up of problems identified during the visit or if adolescent is ill • Encourage ALHIV to drop in (without an appointment) if a problem arises and to participate in other clinic activities, such as support groups

Table 3.4: Key steps — follow-up visit, clients NOT on ART



✓	Steps
	1. Take history
	<ul style="list-style-type: none"> • Review interim medical history • Review concomitant medication (e.g., CTX, oral contraceptives, traditional therapies) • Conduct psychosocial assessment and provide counseling, referrals, and support • Re-assess other practical needs, such as legal support, housing, school/career, and financial
	2. Conduct physical exam
	<ul style="list-style-type: none"> • Assess growth and nutrition (weight, height, and BMI), as appropriate for age • Assess development and neurodevelopment, as appropriate for age • Conduct physical examination, including Tanner staging • Conduct skin exam (tattoos, bruises, acne) and scoliosis evaluation • Screen for STIs in adolescents who are sexually active • Screen for pregnancy in sexually active adolescent females • Screen for TB; screen for other OIs and other concomitant conditions, diarrhea, malaria • Discuss findings from physical examination with ALHIV and his or her caregivers
	3. Make laboratory assessment plan
	<ul style="list-style-type: none"> • Conduct laboratory tests according to local resources and guidelines
	4. Make assessments
	<ul style="list-style-type: none"> • Review clinical findings at this visit and laboratory findings (including CD4 cell count) from recent visits; consider eligibility for ART • Assess WHO clinical stage; consider eligibility for ART • If on CTX, provide refill; monitor and discuss adherence. If not on CTX, re-assess eligibility • If on IPT, provide refill; monitor and discuss adherence. If not on IPT, re-assess eligibility
	5. Make decisions
	<ul style="list-style-type: none"> • If applicable, discuss prevention of STIs, positive prevention, and prevention of unintended pregnancy; provide condoms and contraceptive counseling and methods • For those eligible for ART, initiate adherence preparation • Discuss treatment of current illnesses identified in physical examination • If applicable, provide nutrition counseling and support • Discuss disclosure to the adolescent (if perinatally infected) or disclosure to others • Discuss positive living and positive prevention • Provide counseling, support, and referrals based on psychosocial assessment and needs • Provide education, care, and support for family members and/or partner • Provide support for clients who are switching providers or transitioning into adult care
	6. Agree on an action plan
	<ul style="list-style-type: none"> • Agree on key action steps from history and physical examination • Discuss when to seek medical care, for example, with unexpected illness or side effects • Reiterate agreed upon plan to support adherence to medications • Agree on key action steps based on psychosocial assessment • Provide referrals and, if possible, contact referral to make appointment on client's behalf • Schedule next visit as per national guidelines: <ul style="list-style-type: none"> • If pre ART: every 3–6 months • If initiating ART at this visit: schedule appointment for weeks 2, 4, 8, 12, and then every 3 months once the adolescent has stabilized on ART • Schedule earlier appointment if required for follow-up of problems identified during the visit or if adolescent is ill • Encourage ALHIV to drop in (without an appointment) if a problem arises and to participate in other clinic activities, such as support groups


Table 3.5: Key steps — follow-up visit, clients on ART

✓	Steps
	1. Take history
	<ul style="list-style-type: none"> • Review interim medical history • Review concomitant medication (e.g., CTX, oral contraceptives, traditional therapies) • Conduct psychosocial assessment and provide counseling, referrals, and support • Re-assess other practical needs, such as legal support, housing, school/career, and financial
	2. Conduct physical exam
	<ul style="list-style-type: none"> • Assess growth and nutrition (weight, height, and BMI), as appropriate for age • Assess development and neurodevelopment, as appropriate for age • Conduct physical examination, including Tanner staging • Conduct skin exam (tattoos, bruises, acne) and scoliosis evaluation • Screen for STIs in adolescents who are sexually active • Screen for pregnancy in sexually active adolescent females • Screen for TB; screen for other OIs and other concomitant conditions, diarrhea, malaria • Discuss findings from physical examination with ALHIV and his or her caregivers
	3. Make laboratory assessment plan
	<ul style="list-style-type: none"> • Conduct laboratory tests according to local resources and guidelines
	4. Make assessments
	<ul style="list-style-type: none"> • Review clinical findings at this visit and laboratory findings (including CD4 cell count) from recent visits • Assess WHO clinical stage; determine if there are any new stage 3 or 4 events; assess CD4 cell count to check response to treatment; determine if treatment failure has occurred. • Provide ART refills; monitor and discuss adherence and side effects • If on CTX, provide refill; monitor and discuss adherence. Consider discontinuation • If on IPT, provide refill; monitor and discuss adherence. If not on IPT, re-assess eligibility
	5. Make decisions
	<ul style="list-style-type: none"> • If applicable, discuss prevention of STIs, positive prevention, and prevention of unintended pregnancy; provide condoms and contraceptive counseling and methods • Discuss treatment of current illnesses identified in physical examination • If applicable, provide nutrition counseling and support • Discuss disclosure to the adolescent (if perinatally infected) or disclosure to others • Discuss positive living and positive prevention • Provide counseling, support, and referrals based on psychosocial assessment and needs • Provide education, care, and support for family members and/or partner • Provide support for clients who are switching providers or transitioning into adult care
	6. Agree on an action plan
	<ul style="list-style-type: none"> • Agree on key action steps from history and physical examination • Discuss when to seek medical care, for example, with unexpected illness or side effects • Reiterate agreed upon plan to support adherence to medications • Agree on key action steps based on psychosocial assessment • Provide referrals and, if possible, contact referral to make appointment on client's behalf • Schedule next visit as per national guidelines: <ul style="list-style-type: none"> • If ART was recently initiated: schedule appointment for weeks 2, 4, 8, 12 • If stable on ART: schedule appointment every 3 months (and refills more frequently) • Schedule earlier appointment if required for follow-up of problems identified during the visit or if adolescent is ill • Encourage ALHIV to drop in (without an appointment) if a problem arises and to participate in other clinic activities, such as support groups

Remember: Always follow your most recent national guidelines.

Further guidance can also be found in WHO's *Antiretroviral Therapy for HIV Infection in Adults and Adolescents. Recommendations for a Public Health Approach, 2010 revision* and *Antiretroviral Therapy for HIV Infection in Infants and Children: Towards Universal Access, Recommendations for a public health approach, 2010 revision*.

	Trainer Instructions Slides 39-41
Step 10:	Provide an overview of important laboratory assessments, using the content below and in the slides. Refer participants to <i>Appendix 3A: Laboratory Monitoring Before, During, and After Initiating ART</i> .
	(optional) Ask the adolescent co-trainer to share more about his or her laboratory monitoring schedule, including how he or she remembers to attend these appointments.

	Make These Points
	<ul style="list-style-type: none">• Where available, CD4 cell count should be measured at time of diagnosis and at least every 6 months thereafter, regardless of whether the ALHIV is on ART or not. Measure CD4 more often if the client's CD4 cell count is approaching the threshold for starting ART, if the client is about to start ART, or if a new clinical staging event develops.• The unavailability of laboratory monitoring, including CD4 and chemistries, should NOT prevent adolescents from receiving ART.

Laboratory Monitoring

Every patient consultation starts with a history (or interim history) and then a physical examination. If available, laboratory results can support the findings from the history and examination. Laboratory assessments should be conducted at enrollment (that is, entry into HIV care) and as indicated in *Appendix 3A: Laboratory Monitoring Before, During, and After Initiating ART*.

Guiding principles²

1. Laboratory monitoring is not a prerequisite for the initiation of ART.
2. **CD4:** although not required for initiating and monitoring ART, CD4 cell count is strongly recommended. Use of clinical criteria alone tends to under-diagnose eligibility for ART — a 2007 study from Uganda found that clinical criteria missed half the patients who would have been eligible for ART had CD4 cell measurements been used.³
3. **Hemoglobin:** desirable test at initiation of ART if AZT-containing regimen will be used

4. **Viral load testing** can be used to monitor ART and to diagnose treatment failure. If resources permit, measure viral load every 6 months with the objective of detecting failure earlier. If resources are not available, use immunological and/or clinical criteria alone to define failure or prioritize the use of viral load testing to confirm suspected treatment failure. Always follow national guidelines.
5. Symptom-directed laboratory monitoring for safety and toxicity is recommended for those on ART.

The unavailability of laboratory monitoring, including CD4 and chemistries, should NOT prevent adolescents from receiving ART.

CD4 should be measured at the time of diagnosis AND:

- **For adolescents not yet eligible for ART:** monitor every 6 months and, as CD4 cell count approaches threshold for starting ART, every 3 months
- **For adolescents on ART:** measure just prior to starting ART (if previous CD4 was measured more than 3 months ago) and at least every 6 months thereafter
- **For all adolescents:** measure CD4 if a new clinical staging event develops, including growth faltering and neurodevelopmental delays



Trainer Instructions

Slides 42-46

Step 11:

Provide an overview of CTX. Engage participants by asking:

- *When is CTX initiated in newly diagnosed adolescent clients?*
- *When would you discontinue CTX?*

Summarize the contraindications and dosing for CTX using the content below and in the slides.



Make These Points

- Initiate CTX when CD4 count is $<350\text{cells}/\text{mm}^3$, regardless of clinical stage, or, if CD4 count is unavailable, start when adolescent is in clinical stage 2, 3, or 4.
- CTX may be discontinued in an adolescent on ART if he or she shows evidence of sustained immune recovery of CD4 $>350\text{cells}/\text{mm}^3$ after at least 6 months of treatment.

Cotrimoxazole (CTX)^{2,4}

CTX prophylaxis, often referred to simply as CTX, is a well-tolerated, cost-effective, and life-saving intervention for people living with HIV. It should be implemented as an integral component of chronic care for ALHIV who are symptomatic.

WHO criteria for initiating CTX

Indications for CTX:

- **Clinical criteria:** Start CTX when adolescent is symptomatic (WHO clinical stage 2, 3, or 4)
- **Immunologic criteria:** When CD4 testing is available, start CTX when CD4 count is <350 cells/mm³, regardless of clinical stage, or according to national guidelines

Discontinuing CTX

- CTX can be discontinued in an adolescent on ART if he or she shows evidence of sustained immune recovery of CD4 >350 cells/mm³ after at least 6 months of treatment.
- In situations where CD4 is not available, CTX can be discontinued when there is evidence of good clinical response to ART (absence of clinical symptoms after at least 1 year of therapy), good adherence, and secure access to ART.
- If CTX is discontinued, it should be restarted if the client's CD4 count falls below 350 cells/mm³ or if he or she has a new or recurrent WHO clinical stage 2, 3, or 4 condition.
- Always follow national guidelines when initiating and discontinuing CTX.

Discontinuation of CTX due to adverse events

CTX is very well tolerated by the vast majority of clients and adverse reactions are rare ($<2\%$ per person-year). CTX should be discontinued if the adolescent experiences drug-related adverse events, such as extensive exfoliative rash, Stevens-Johnson syndrome, severe anemia, or pancytopenia. Remember that such drug-related adverse events are unusual.

Contraindications to CTX


Contraindications of CTX include:

- Adolescents with a history of severe and life-threatening adverse reactions — grade 3 or 4 to CTX or other sulfa drugs — should not be prescribed CTX. Dapsone 100 mg/day should be given as an alternative.
- See WHO's *Guidelines on Co-trimoxazole Prophylaxis for HIV-related Infections among Children, Adolescents and Adults, Recommendations for a Public Health Approach* for additional information, including guidance on de-sensitizing those with a history of grade 1, 2, or 3 reaction to CTX.
- Severe liver insufficiency
- Severe renal insufficiency

Table 3.6: Dosing for CTX

Recommended once daily dose by age	Suspension	Child tablet (100mg/20mg)	Single strength adult tablet (400mg/80mg)	Double strength adult tablet (800mg/160mg)
10–14 years (or 15–30 kg) 400 mg sulfamethoxazole/ 80 mg trimethoprim	10 ml	4 tablets	1 tablet	½ tablet
>14 years (or >30 kg) 800 mg sulfamethoxazole/ 160 mg trimethoprim	N/A	N/A	2 tablets	1 tablet
Frequency — once a day				
CTX can be safely continued or initiated during pregnancy (regardless of stage of pregnancy) and breastfeeding.				


Source: WHO. (2006). *Guidelines on co-trimoxazole prophylaxis for HIV-related infections among children, adolescents and adults, Recommendations for a public health approach*, p. 15 and 21. Geneva: WHO.



Trainer Instructions
Slides 47-49

Step 12: Provide a brief summary of HPV vaccination using the content below and in the slides. Initiate the discussion by asking:

- *What is human papillomavirus, or HPV?*
- *Is anyone familiar with HPV vaccination? How is it used?*



Make These Points

- HPV is prevented in the same ways that HIV is prevented: through abstinence, being faithful, and consistent and correct condom use.
- Unlike HIV, however, HPV can also be prevented through vaccination.

HPV

Genital human papillomavirus (HPV) is the most common STI. Most people who are infected with HPV do not know they have it. In most cases (9 out of 10), the body's immune system clears HPV naturally within 2 years. However, some of the more than 40 different types of HPV can cause genital warts and others can cause normal cells in the body to turn abnormal, which can lead to cervical and other cancers over time.

Reducing HPV risk through vaccination⁵

HPV is prevented in the same ways that HIV is prevented: through abstinence, being faithful, and consistent and correct condom use. Unlike HIV, however, HPV can also be prevented through vaccination.

HPV vaccination

There is now a vaccine that can lower a person's risk of getting HPV. In countries where it is available, HPV vaccination can be initiated between the ages of 9–26 years, but is typically recommended at the age of 11 or 12. Vaccination requires a total of 3 shots over 6 months. The best way a person can get the most benefit from HPV vaccination is to complete all 3 doses before beginning sexual activity.



Trainer Instructions

Slides 50-56

Step 13:

Transition to a discussion on ART. Start by providing a brief overview of the benefits of ART for ALHIV and then discuss eligibility criteria, using the content below and in the slides. Start the discussion by asking participants:

- *What are some of the benefits of ART that you have seen in your adolescent clients?*
- *What are the immunological and clinical criteria to start ART?*
- *What are some of the other issues that need to be considered before starting ART?*

Step 14:

Remind participants that adherence to both care and medications is crucial for ALHIV. Review key considerations for supporting ALHIV with adherence, using the content below and in the slides.

Note that adherence preparation and providing ongoing support is discussed in detail in Module 8.



Make These Points

- The decision to initiate ART is based on immunological and clinical criteria (CD4 \leq 350 or WHO stage 3 or 4) and is also informed by other considerations, such as laboratory results, opportunistic infection screening, and readiness of the individual to adhere to the ART regimen.

When to Start ALHIV on ART

ART helps preserve and enhance the immune systems of people living with HIV. ART reduces the risk of OIs, restores growth, improves mental functioning, and improves the client's overall quality of life. By adolescence, most clients with perinatally-acquired HIV will already be on CTX and many will be on ART. The decision to start ART in an adolescent who is newly infected or perinatally infected and recently diagnosed or eligible relies on clinical and immunological criteria as well as an assessment of other issues.

Immunological and clinical criteria to start ART

The criteria to initiate ART is the same in all adolescent and adult patients:

- **CD4 \leq 350 or**
- **WHO stage 3 or 4** (regardless of CD4 count) **or**
- **Active TB disease or**
- **HIV/HBV-coinfection**, if HBV infection (chronic active hepatitis) requires treatment, irrespective of CD4 cell count or WHO clinical stage **or**
- For asymptomatic or mildly symptomatic adolescents (i.e. those in stages 1 and 2), **when immunological values fall near the threshold values**. A drop below threshold values should be avoided.
 - Consider treatment in serodiscordant couples in stable, long-term relationships if index partner has **CD4 $>$ 350**.⁶

Other issues to consider before initiating ART

Before initiating ART, health workers should help ALHIV understand that they are starting lifelong therapy and prepare them (and caregivers) to adhere to their HIV care plan and ART regimen.

Adherence preparation should help the adolescent (and caregivers) to:

- Understand what HIV is
- Understand what ART is and that it is a lifelong commitment
- Understand how the ART is to be taken
- Understand the challenges of adherence
- Develop an individual adherence plan
- Seek family and peer support for adherence

Adherence preparation can take 1, 2, 3, or more visits, depending on the individual adolescent, his or her health status, the health worker(s) involved, and the time available. At times, there may be more urgency to initiate ART quickly, especially with very sick children/adolescents. In these cases, health workers can minimize adherence preparation and increase post-ART initiation adherence support. There is more information on adherence preparation and support in Module 8.

Prior to initiating ART, it is recommended that, in addition to providing adherence preparation counseling and support:

- Minimum enrollment laboratories have been completed (see *Appendix 3A: Laboratory Monitoring Before, During, and After Initiating ART*):
 - Recommended: CD4
 - Desirable: Hb if using AZT; ALT if using NVP; creatinine clearance if using TDF; pregnancy test for sexually adolescent females initiating EFV
- Other necessary laboratory tests have been conducted, based on history and physical exam
- CTX has been initiated
- The adolescent has been screened for TB
- The adolescent has been tested for Hepatitis B
- Adolescents with perinatally-acquired HIV know their HIV-status (i.e, have been disclosed to). Keep in mind that this is a recommendation and not a requirement to initiate ART. There may be times when the disclosure process cannot occur entirely before initiation.
- Adolescents who know their status have disclosed to someone they trust. Again, this is a recommendation and should not be a requirement to initiate ART.

For more information, see *Appendix 3A: Laboratory Monitoring Before, During, and After Initiating ART*; *Appendix 3C: WHO Clinical Staging of HIV Disease in Children with Established HIV Infection*; and *Appendix 3D: WHO Clinical Staging of HIV Disease in Adults and Adolescents*.



Trainer Instructions

Slides 57-61

Step 15:

Provide an overview of the recommended 1st line ARV regimens for ALHIV using your national guidelines and the information below and in the slides.

To encourage discussion, ask participants:

- *What is the 1st line ART regimen for younger adolescents?*
- *How does the 1st line ART regimen differ for older adolescents?*

Note that pediatric guidelines should be followed with younger adolescents (Tanner stages I, II, and III) and that adult guidelines should be followed with older adolescents (Tanner stages IV and V).

Step 16:

Refer participants to Tables 3.7 and 3.8 in the Participant Manual. After discussing the key content of each table, ask participants to volunteer to read the notes underneath that Table (although these notes are NOT included in the slides, they contain important information).

Remind participants that they should always follow national guidelines when prescribing any ART regimen.



(optional) Ask the adolescent co-trainer to share his or her ART regimen, including dosing, side effects, challenges, etc.



Make These Points

- The recommended 1st line ART regimen depends on whether the ALHIV is considered a younger (Tanner stages I, II, and III) or older (usually Tanner stages IV and V) adolescent. For younger adolescents, the 1st line regimen is **AZT + 3TC + NVP** or **EFV**. For older adolescents, it is **AZT** or **TDF + 3TC** or **FTC + NVP** or **EFV**.
- Specific regimens are indicated in national guidelines. Always check national guidelines before prescribing an ART regimen.

Recommended 1st Line ART Regimens for ALHIV

Introduction to ART regimens

As a general rule, those who acquire HIV during their adolescent years, regardless of Tanner stage, are treated according to adult ART guidelines.

WHO recommends basing the choice of ART regimen and dosage for adolescents on their sexual maturity rating (see *Appendix 2A: Tanner Staging System*):

- Adolescents who are at **Tanner stages I, II, and III** should be started on the pediatric schedule and monitored with particular care. This is because they are undergoing pubertal changes associated with rapid growth.
- Adolescents who are at **Tanner stages IV and V** are considered to be adults. The same recommendations and special considerations that apply to adults apply to these adolescents.

Younger adolescents

For younger adolescents (Tanner stage I, II, or III), 1st line ART regimens contain NVP or EFV, plus a “backbone” consisting of 2 NRTIs. See Table 3.7 for WHO preferred and alternative 1st line regimens. Note: specific regimens are indicated in national guidelines. Always check national guidelines before prescribing an ART regimen.

Table 3.7: Regimens for children and younger adolescents (Tanner stages I, II, or III)

	Regimen	
	NRTI backbone	NNRTI component
Preferred 1 st line	AZT + 3TC	NVP ¹ or EFV ^{2, 3, 4}
Alternative 1 st line ⁵	ABC + 3TC	NVP ¹ or EFV ^{2, 3, 4}
2 nd Alternative 1 st line	d4T + 3TC	NVP ¹ or EFV ^{2, 3}
<p>1 Symptomatic NVP-associated hepatotoxicity or serious rash, while uncommon, is more frequent in females than in males, and is more likely to be seen in ARV-naïve females with higher absolute CD4 cell counts (>250 cells/mm³). If used in adolescent girls with absolute CD4 counts between 250 and 350 cells/mm³, careful monitoring, preferably including liver enzymes, is needed during the first 12 weeks of therapy.</p> <p>2 The preferred regimen for adolescents with tuberculosis is EFV + the 2 NRTI backbone.</p> <p>3 The use of EFV should be avoided in adolescent girls who are at risk of becoming pregnant (i.e., are sexually active and not using adequate contraception) or those in the 1st trimester of pregnancy. If possible, adolescent girls taking EFV should be switched to a NVP-based or other regimen, or counseled on and provided with a contraceptive method.</p> <p>4 In situations where both EFV and NVP are contraindicated in 1st line regimens for adolescent girls, the use of a triple NRTI regimen may be indicated.</p> <p>5 Use the alternative 1st line regimen only if there are contraindications to AZT (for example, severe anemia, <8g/dl; or neutropenia, <500 cells/mm³) or AZT availability cannot be assured.</p>		

Additional notes and references:

- Preferred 2nd line ART options are listed in *Appendix 3E: Preferred 2nd line ART Options*.
- Specific regimens are indicated in national guidelines — always check your national guidelines before prescribing an ART regimen.
- See also *Appendix 3F: ARV Dosages*.
- For additional information, see WHO’s *Antiretroviral Therapy for HIV Infection in Adults and Adolescents. Recommendations for a Public Health Approach, 2010 revision* or consult an HIV specialist for guidance on transitioning to the 2010 recommendations.
- Note that the 2010 WHO guidelines call for the **phasing out of d4T-containing regimens** for adults and adolescents, unless AZT or ABC are contraindicated or not assured. Refer to WHO’s *Antiretroviral Therapy for HIV Infection in Adults and Adolescents. Recommendations for a Public Health Approach, 2010 revision* and your national guidelines for advice on drug substitution for adolescents currently on d4T.

Dosing in younger adolescents is usually based on either weight or body surface area. As these change with growth, drug doses must be adjusted at each visit to avoid the risk of under-dosing. For additional information on dosing and regimens for specific scenarios (for example, patients with hepatitis), see Annex E in WHO’s *Antiretroviral Therapy for HIV Infection in Infants and Children: Towards Universal Access, Recommendations for a public health approach, 2010 revision*.

Older adolescents and adults

WHO preferred ART regimens for ART-naïve older adolescents (Tanner stage IV and V) and adults are listed in Table 3.8. The regimens were selected based on safety profile, suitability for use in most patient groups, cost, treatment durability, and the benefits of using fixed-dose combinations.

Table 3.8: Regimens for older adolescents (Tanner stage IV and V) and adults

	Regimen	
	NRTI backbone	NNRTI component
Preferred 1 st line	AZT ⁴ or TDF ³ + 3TC or FTC	NVP ¹ or EFV ²
Pregnant women	AZT ⁴ + 3TC	NVP ¹ or EFV ²
HIV/TB co-infection	AZT ⁴ or TDF ³ + 3TC or FTC	EFV ²
HIV/HBV co-infection	TDF ³ + 3TC or FTC	NVP ¹ or EFV ²
<p>1 Avoid use of NNRTI component in women who have had exposure to sdNVP without NRTI tail for 7 days within the last 12 months (for PMTCT); instead substitute LPV/r. If unsure whether tail coverage for sdNVP was provided, then use LPV/r. If NVP is initiated in women with a CD4 cell count of 250–350 cells/mm³, monitor hepatic enzymes at weeks 2, 4, and 12 after initiation (if possible).</p> <p>2 Women who are planning to become pregnant or who may become pregnant should use a regimen that does not include EFV in order to avoid the highest risk period of exposure in utero (conception to day 28 of gestation). If a woman is diagnosed as pregnant before 28 days of gestation, EFV should be stopped and substituted with NVP or a PI. If a woman is diagnosed as pregnant after 28 days of gestation, EFV should be continued.</p> <p>3 TDF: Because of its association with renal toxicity, monitor patients for creatinine clearance before initiation and every 6 months. The inability to perform creatinine clearance is not a barrier to TDF use. Creatinine clearance monitoring is recommended in those with underlying renal disease, of older age groups, and with low body weight or other renal risk factors, such as diabetes or hypertension. Avoid TDF or adjust dose if CrCl <50 ml/min.</p> <p>4 Measure hemoglobin (Hb) before the initiation of AZT and then as indicated by signs/symptoms. Patients receiving AZT-containing regimens who have low body weight and/or low CD4 cell counts are at greater risk of anemia. These patients should have routine Hb monitoring 1 month after initiating AZT and then at least every 3 months. AZT should not be given if Hb is <7 g/dl.</p>		

Additional notes and references:

- Preferred 2nd line ART options are listed in *Appendix 3E: Preferred 2nd line ART Options*.
- Specific regimens are indicated in national guidelines. Always check national guidelines before prescribing an ART regimen.
- See also *Appendix 3F: ARV Dosages for Older Adolescents and Adults*.
- For additional information, see WHO's *Antiretroviral Therapy for HIV Infection in Adults and Adolescents. Recommendations for a Public Health Approach, 2010 revision* or consult an HIV specialist for guidance on transitioning to the 2010 recommendations.



Trainer Instructions

Slides 62-66

Step 17:

Remind participants that the first 6 months after ART initiation are critical.

To encourage discussion, ask participants:

- *What are the key signs that an adolescent is responding to ART?*
- *What are some of the possible events that health workers should look for during the initial 6 months that a client is on ART?*

Fill in using the content below and in the slides.



(optional) Ask the adolescent co-trainer to share experiences about his or her first 6 months on ART (if they can remember).



Make These Points

- The first 6 months on ART are critical. During this time, most adolescents will show improvement in growth or weight gain and decreased frequency of infections, along with a rise in CD4 cell count.
- Complications during the first few weeks after ART initiation are more common in clients with severe immunodeficiency.
- Health workers should be aware of and look out for possible events after ART initiation. It is important to allow at least 6 months before judging a regimen's effectiveness.

Possible events during the first 6 months on ART

The first 6 months on ART are critical. In most adolescents, CD4 cell counts rise with the initiation of ART, increase over the course of the first year of treatment, reach a plateau, and then continue to rise further during the second year. Some adolescents, however, fail to respond as expected or may even exhibit clinical deterioration.

- Complications during the first few weeks following ART initiation are seen most commonly in those with severe immunodeficiency.

- Apparent failure to improve in an adolescent with advanced HIV disease does not necessarily reflect a poor response to ART — it takes time for HIV viral replication to be controlled by ART and for the client’s immune system to recover. It may, however, reflect inadequate adherence.
- As an adolescent with advanced disease recovers immune function, there is risk of immune reconstitution inflammatory syndrome (IRIS). IRIS, which most often occurs within the first weeks to months after ART initiation, is a complication caused by reactivation of the immune system. IRIS can present as a flare-up of symptoms when the recovering immune system begins to respond to an existing infection, for example, TB. The response is not due to failure of ART, but rather its success—and the resulting immune reconstitution. When IRIS is suspected, consult a clinician experienced in managing ALHIV.
- Allow sufficient time (at least 6 months on therapy) before judging the effectiveness of a regimen. Switching the ART regimen during the first 6 months on therapy is usually inappropriate and supporting adherence during this period is critical.
- Persistent failure to see a CD4 response should alert the health worker to potential adherence problems or non-response to ART. In such cases, viral load determination can be useful as well as consultation with a clinician experienced in managing ALHIV.

Key signs of an adolescent’s response to ART include:

- Improvement in growth or weight gain in adolescents who have been failing to grow
- Decreased frequency of infections (bacterial infections, oral thrush, and/or other OIs)



Trainer Instructions

Slides 67-69

Step 18:

Briefly discuss the importance of supporting ALHIV’s adherence to HIV care and treatment, noting that this topic will be discussed further in Module 8.

Step 19:

Next, discuss the frequency of clinical monitoring/timing of follow-up visits. Ask participants:

- *How often do adolescents on ART need to return to the clinic after starting ART?*
- *How often do adolescents not yet eligible for ART need to return to the clinic?*

Fill in using the content below and in the slides.



Make These Points

- The frequency of clinical monitoring depends on whether or not the ALHIV is on ART:
 - **Adolescents on ART:** After starting ART, follow-up visits should occur at a minimum at weeks 2, 4, 8, 12, and then every 3 months.
 - **Adolescents not yet eligible for ART:** Visits should occur every 3 to 6 months.

Supporting Adherence to Care and Treatment among ALHIV

Adherence to both care and medicines is the cornerstone of effective and successful HIV care. Adolescents often face unique challenges with adherence—challenges that are different from those of pediatric or adult clients. Adherence preparation, assessment, counseling, and support for ALHIV is discussed in detail in Module 8.

Frequency of clinical monitoring

- **Adolescents on ART:** The frequency of clinical monitoring will depend on response to ART (and national guidelines). After starting ART, *follow-up visits should occur at a minimum at weeks 2, 4, 8, 12, and then every 3 months* (once the adolescent has stabilized on ART).
- **Adolescents not yet eligible for ART:** As a general rule, follow-up visits should occur every 3 months if the client's CD4 cell count is between 350–500 and every 3–6 months if the client's CD4 cell count is greater than 500. However, schedule the next visit sooner if required for follow-up of problems identified during the visit.



Trainer Instructions

Slides 70-71

Step 20:

Provide a brief overview of toxicities to ART, using the content below and in the slides, and referring participants to their national ART guidelines for additional information.

Note that the potential for an adverse reaction to ART is possible and should be mentioned during pre-ART adherence counseling.



(optional) Invite the adolescent co-trainer to discuss any experience that he or she has had with toxicities.



Make These Points

- Severe, life-threatening toxicities require discontinuation of all ARV drugs whereas those that are mild or moderate often do not require discontinuation (but may require drug substitution).

Toxicities

Toxicity can be monitored clinically, based on adolescent/caregiver reporting and physical examination. It can also be assessed by a limited number of laboratory tests. Drug toxicities generally fall into 1 of the following 3 categories:

- **Mild toxicities** do not require discontinuation of therapy or drug substitution, and symptomatic treatment may be given (for example, antihistamines for a mild rash).
- **Moderate or severe toxicities** may require substitution with a drug in the same ARV class but with a different toxicity profile (or with a drug in a different class), but they do not require discontinuation of all ART.
- **Severe life-threatening toxicities** require discontinuation of all ARVs and the initiation of appropriate supportive therapy until the patient is stabilized and the toxicity is resolved.
 - NNRTIs have a longer half-life than NRTIs and stopping all 1st line drugs simultaneously may result in exposure to sub-therapeutic levels of the NNRTI and, subsequently, to the development of NNRTI resistance.
 - Nonetheless, if an adolescent has a life-threatening toxicity, all ARVs should be stopped simultaneously until the patient is stabilized.

For additional information about dealing with toxicities, refer to national guidelines, WHO's *Antiretroviral Therapy for HIV Infection in Adults and Adolescents. Recommendations for a Public Health Approach, 2010 revision* and *Antiretroviral Therapy for HIV Infection in Infants and Children: Towards Universal Access, Recommendations for a Public Health Approach, 2010 revision*, or a local HIV specialist.

Considerations for adherence

Regardless of their severity, adverse reactions may affect adherence to therapy. A proactive approach to managing toxicity is recommended:

- Before initiating ART, discuss potential side effects.
- During the early stages of treatment, offer support during minor and moderate adverse reactions.

Remember: Many ARV drug toxicities are time-limited and resolve spontaneously, even when the same ART regimen is continued.



Trainer Instructions

Slides 72-76

Step 21:

Briefly discuss treatment failure, using the content below and in the slides. Start the discussion by asking participants:

- *What is the definition of treatment failure?*
- *What are the 5 things that need to be verified before concluding that treatment has failed?*
- *How is suspected treatment failure confirmed?*



(optional) Invite the adolescent co-trainer to discuss any experience that he or she has had with treatment failure.



Make These Points

- Treatment failure is when ART stops controlling an individual's virus and he or she starts getting sicker.
- There are 5 things that should be verified before concluding that treatment has failed.
- There are 3 criteria for treatment failure: clinical, immunologic, and virologic.
- It is important to allow time to provide counseling and support, including on adherence, when switching a client's regimen.

Treatment Failure

Treatment failure is when ART stops controlling an individual's virus and he or she starts getting sicker. Treatment failure needs to be confirmed in a timely manner. If diagnosed prematurely, clients are often switched to expensive 2nd line ART regimens unnecessarily. If diagnosed late, the result could be disease progression or even death.

When treatment failure is suspected, verify these 5 things:

- The adolescent has been on ART for at least 24 weeks.
- The adolescent has been adherent (in other words, he or she has taken all medicines exactly as prescribed). If adherence has not been optimal, the first course of action is to keep the adolescent on the same regimen and to provide adherence counseling and support.
- Any inter-current infection or major clinical event has been treated and resolved.
- IRIS has been excluded.
- The adolescent is receiving adequate nutrition (if considering a change in treatment because of growth failure).

Criteria for treatment failure

There are 3 criteria for treatment failure (see Table 3.9):

- Clinical
- Immunologic
- Virologic

Although virological failure is the most accurate method of diagnosing and confirming treatment failure, if viral load is not available, use immunological criteria to confirm clinical failure (i.e. CD4 cell count).

Table 3.9: WHO definition and criteria for switching ART in adults and adolescents

Failure	Definition	Comments
Clinical failure	<ul style="list-style-type: none"> New or recurrent WHO stage 4 condition 	<ul style="list-style-type: none"> Condition must be differentiated from immune reconstitution inflammatory syndrome (IRIS) Certain WHO clinical stage 3 conditions (e.g. pulmonary TB, severe bacterial infections) may be an indication of treatment failure
Immunological failure¹	<ul style="list-style-type: none"> Fall of CD4 count to baseline (or below) OR 50% fall from on-treatment peak value OR Persistent CD4 levels below 100 cells/mm³ 	<ul style="list-style-type: none"> Without concomitant infection to cause transient CD4 cell decrease
Virological failure²	<ul style="list-style-type: none"> Plasma viral load above 5000 copies/ml 	<ul style="list-style-type: none"> The optimal viral load threshold for defining virological failure has not been determined. Values of >5,000 copies/ml are associated with clinical progression and a decline in CD4 cell count. See <i>Appendix 3F</i>.
<p>1 Note: Immunological failure is not a good predictor of virological failure — 8–40% of individuals who present with evidence of immunological failure actually have virological suppression.</p> <p>2 Viral load measurement is considered a better indicator of treatment failure than clinical or immunological indicators. Depending on availability, viral load may be used:</p> <ul style="list-style-type: none"> Targeted strategy: To confirm clinical/immunological failure or, occasionally, to assess adherence within 4–6 months of ART initiation in at-risk clients Routine strategy: To detect viral replication every 6 months 		

For additional information on treatment failure, see WHO's *Antiretroviral Therapy for HIV Infection in Adults and Adolescents. Recommendations for a Public Health Approach, 2010 revision* and *Antiretroviral Therapy for HIV Infection in Infants and Children: Towards Universal Access, Recommendations for a Public Health Approach, 2010 revision*.

Once treatment failure has been detected, select a new regimen using national guidelines or after consulting an HIV specialist. See *Appendix 3E: Preferred 2nd line ART Options* for WHO-recommended 2nd line ART regimens. The patient should be switched to a new regimen within 1 month of confirming treatment failure.

Whenever an ALHIV is switched to a new regimen:

- Counsel him or her on reasons for the change in regimen, differences in drug types, dosages, and timing of administration.
- Review with the adolescent and his or her caregiver possible side effects of the new regimen.
- Re-assess for social issues that could negatively influence adherence and review the importance of adhering to the clinic visit schedule as well as to the regimen.
- Provide ongoing adherence counseling and support (see Module 8).



Trainer Instructions

Slides 77-82

Step 22:

Introduce TB screening, prevention, and treatment. Start the discussion by asking:

- *Why do you think it is important to discuss TB as part of this training?*
- *How often should you screen ALHIV for TB?*
- *How should you screen ALHIV for TB?*

Provide a brief overview of TB screening and diagnosis in ALHIV using the content below and in the slides. Take some time to review Figure 3.1 (the algorithm for TB screening).

Also review the TB screening tools in *Appendices 3G: TB Screening Tool for Children and Younger Adolescents* and *3H: TB Screening Tool for Older Adolescents and Adults*.



(optional) Ask the adolescent co-trainer to share with the group any experiences he or she has had with TB screening.



Make These Points

- PLHIV, including ALHIV, are at risk of developing TB, regardless of their CD4 count.
- TB is responsible for more than one quarter of deaths among PLHIV.
- There are many steps that can be taken to prevent, screen, and provide early treatment for TB. Excellent TB prevention and early treatment can prevent unnecessary illness and death in PLHIV.
- TB guidelines often vary by country; national guidelines should always be followed.
- All ALHIV should be screened for active TB, contact with a TB source case, and current TB symptoms at every visit to a health facility.

Tuberculosis Screening

People living with HIV, including adolescents, are at risk of developing TB — regardless of CD4 count. HIV is the strongest risk factor for TB. Co-infection with HIV/TB is a major public health threat for PLHIV and TB is responsible for more than one-quarter of all deaths among PLHIV. TB threatens the significant health benefits achieved with the scale-up of HIV care and treatment.

Therefore, all ALHIV should be screened for active TB at each visit.

- If found to be co-infected, they should be started on anti-TB medications immediately. If they are not already on ART, they should be started on ART soon thereafter.
- All ALHIV who do not have any signs of active TB should be offered isoniazid preventive therapy (IPT) as part of the comprehensive package of care — for at least 6 months.

- ALHIV who have had a significant TB contact should be screened for TB and, if no active TB is found, should be offered IPT for 6 months.
- Recent studies show that PLHIV who have been treated for TB can benefit from IPT and should be offered secondary prophylaxis after completing TB treatment.

Screening for TB⁷

All ALHIV should be evaluated at every visit to a health facility for contact with a TB source case and for current TB symptoms, regardless of immunologic status, HIV treatment status (whether currently on ART), or whether currently receiving Isoniazid (INH). See Figure 3.1.

Screen for contact with a TB source by asking if the client:

- Has had close contact with someone (someone in the same household or with whom the client has frequent contact) who has been diagnosed with TB
- Has had close contact with someone who has a chronic cough, fever, or who has lost a lot of weight

If client has had contact with a TB source, exclude active TB disease per national guidelines and, if there is no evidence of active TB, offer IPT.

Screen for symptoms of TB – always follow national guidelines

For younger adolescents, ask about:

- Current cough
- Fever
- Weight loss or poor weight gain

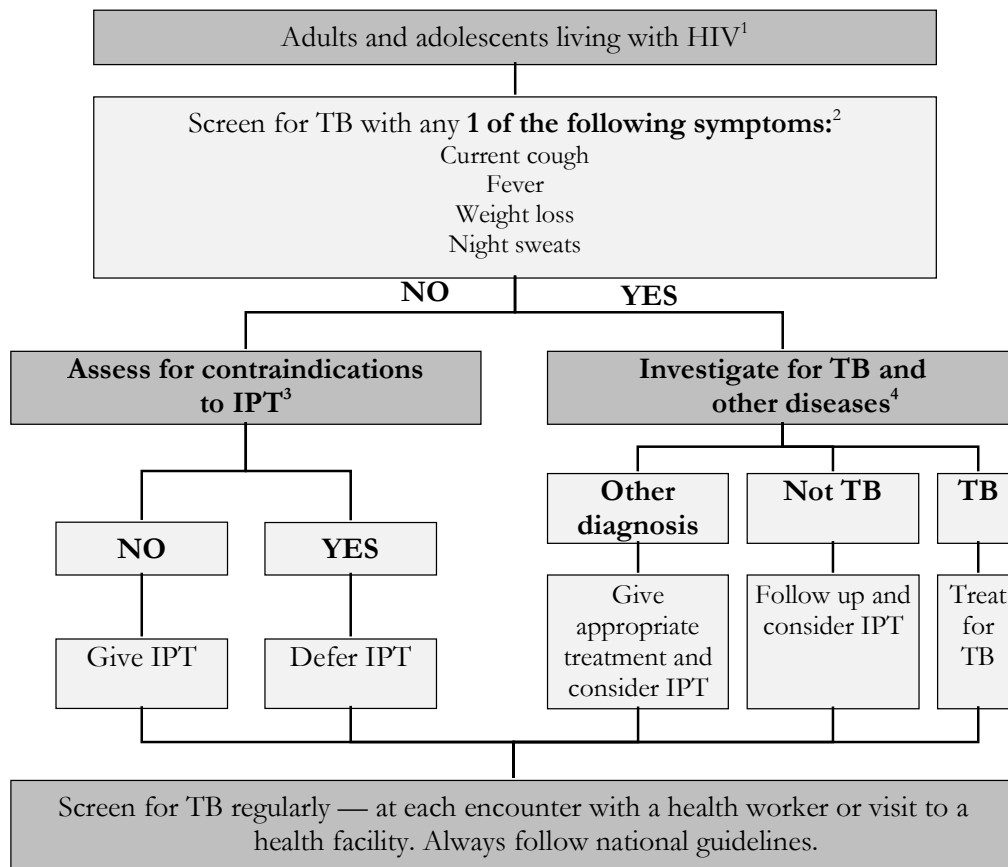
For older adolescents, ask about:

- Current cough
- Fever
- Night sweats
- Weight loss

If the client has **none of the above symptoms**, active TB disease is unlikely and they should be offered IPT (see below).

If the client has **1 or more of the above symptoms**, evaluate for active TB disease per national guidelines. Sample TB screening tools are included as *Appendix 3G: TB Screening Tool for Children and Younger Adolescents* and *Appendix 3H: TB Screening Tool for Older Adolescents and Adults*.

Figure 3.1: Algorithm for TB screening in adults and adolescents living with HIV in HIV-prevalent and resource-constrained settings



Footnotes:

- 1 Every adult and adolescent should be evaluated for eligibility to receive ART. Infection control measures should be prioritized to reduce *M. tuberculosis* transmission in all settings that provide care.
- 2 Chest radiography can be done if available, but is not required to classify patients into TB and non-TB groups. In high HIV-prevalence settings with a high TB prevalence among people living with HIV (e.g. greater than 10%), strong consideration must be given to adding other sensitive investigations.
- 3 Contraindications include: active hepatitis (acute or chronic), regular and heavy alcohol consumption, and symptoms of peripheral neuropathy. Past history of TB and current pregnancy should not be contraindications for starting IPT. Although not a requirement for initiating IPT, TST may be done as a part of eligibility screening in some settings.
- 4 Investigations for TB should be done in accordance with existing national guidelines.

Source: WHO, Department of HIV/AIDS and Stop TB Department. (2011). *Guidelines for intensified tuberculosis case-finding and isoniazid preventive therapy for people living with HIV in resource-constrained settings.*



Trainer Instructions

Slides 83-91

Step 23:

Discuss TB prevention with IPT, using the questions below to guide the discussion and filling in, as needed, using the content below and in the slides.

- *Who should receive isoniazid preventive therapy (IPT)?*
- *What is the isoniazid (INH) dosing for adolescents?*

Step 24:

Finally, discuss treatment considerations for ALHIV with TB, as well as adherence support, using the content below and in the slides.



(optional) Ask the adolescent co-trainer to share with the group any experiences he or she has had with TB prevention or treatment.



Make These Points

- All HIV-infected adolescents with no evidence of active TB disease and no contraindications to IPT should begin IPT as part of a comprehensive package of HIV care.
- Any adolescent with active TB disease should begin TB treatment immediately and should also start ART, regardless of CD4 cell count, as soon as possible — within 2-8 weeks.
- ART should continue in ALHIV who are already on a 1st line ARV regimen and who are subsequently diagnosed with TB. However, the ARV regimen should be reviewed and may need adjustment to ensure optimal treatment of both TB and HIV, and to decrease the potential for toxicities and drug-drug interactions.

Prevention of TB with IPT^{5,8}

Provision of IPT is part of the **WHO's "3 I's" strategy** to improve TB case finding and prevent TB. The 3 I's are: Isoniazid preventive treatment, intensified case finding for active TB, and TB infection control.

The following should receive IPT:

- All HIV-infected adolescents with no evidence of active TB disease and no contraindications to IPT should begin IPT as part of a comprehensive package of HIV care. IPT should be given to ALHIV irrespective of the degree of immunosuppression and should also be given to those on ART, those who have been previously treated for TB, and those who are pregnant.
- ALHIV who do not have any of the symptoms listed in the symptom screen should be offered IPT for at least 6 months.

- ALHIV who have been successfully treated for TB disease should be offered IPT for 6 months. Note that there is no evidence for IPT after treatment of multi-drug-resistant (MDR) or extremely drug-resistant (XDR) TB, so secondary prophylaxis should not be provided.
- ALHIV who have had contact with a TB case and do not have active disease should be offered IPT for 6 months

The recommended dose of isoniazid (INH) for preventive therapy in HIV co-infection among most adolescents is 1 adult tablet (300mg) daily or 3 100mg tablets (if pill size or formulation is limited). For adolescents weighing less than 25kg, follow the dosing schedule in Table 3.10 below. Also give vitamin B6 with INH at a dose of 25 mg daily.

Table 3.10: Simplified dosing schedule for INH

Weight range (kg)	Number of 100 mg tablets of INH to be administered per dose (total dose 10 mg/kg/day)	Dose given (mg)
10–13.9	1 ½ 100mg tablets	150
14–19.9	2 100mg tablets	200
20–24.9	2 ½ 100mg tablets	250
> 25 (most adolescents)	3 100mg tablets or 1 adult 300mg tablet	300
Give vitamin B6 with INH at a dose of 25 mg daily.		

Source: WHO, Department of HIV/AIDS and Stop TB Department. (2011). *Guidelines for intensified tuberculosis case-finding and isoniazid preventive therapy for people living with HIV in resource-constrained settings.*

Treatment considerations in adolescents with TB and HIV:

- Prompt treatment is especially important for co-infected adolescents.
- Any ALHIV with active TB disease should begin TB treatment immediately and should start ART, regardless of CD4 cell count, as soon as possible — within 2-8 weeks.²
- The co-management of TB and HIV is complicated by drug interactions, particularly between rifampicin and the PI classes of ARVs. These drugs have similar routes of metabolism and co-administration may result in sub-therapeutic drug levels. EFV is the preferred NNRTI in patients starting ART while on TB treatment.
- Ensure all household contacts and anyone else with whom the client has had regular contact is referred to the clinic for screening and, if needed, treatment.

For information on the treatment of TB and HIV, see your national TB/HIV guidelines and WHO's *Guidance for National Tuberculosis and HIV Programmes on the Management of Tuberculosis in HIV-infected Children: Recommendations for a Public Health Approach*, 2010 (for younger adolescents) and *Antiretroviral Therapy for HIV Infection in Adults and Adolescents: Recommendations for a Public Health Approach*, 2010 (for older adolescents).

Recommended ART regimens for adolescents with TB/HIV co-infection are included in Tables 3.7 and 3.8.

Adherence support:

- Provide ALHIV and caregivers with adherence counseling and monitoring at every clinic visit.
- Adherence support for IPT or anti-TB therapy can be included in the ART adherence discussion.

ART switching for ALHIV who develop TB while on 1st line ART:

- ART should continue in ALHIV already on a 1st line ART regimen who are subsequently diagnosed with TB. However, the ART regimen should be reviewed and may need adjustment to ensure optimal treatment of both TB and HIV, and to decrease the potential for toxicities and drug-drug interactions.
- In ALHIV on a standard NNRTI-based 1st line regimen who develop TB, make adjustments to their ART regimen as follows:
 - If on a regimen of 2 NRTI + NVP, switch NVP with EFV.
 - If the ALHIV is on a PI regimen, consult an expert for guidance.
- **Note:** Where TB is being considered as a sign of treatment failure of the 1st line regimen, consider switching to a 2nd line regimen if the adolescent has taken ART for more than 24 weeks, has initially responded to it, and has not responded to anti-TB treatment. Consult an HIV expert for the construction of a 2nd line regimen.



Trainer Instructions

Slides 92-95

Step 25:

Explain that health workers should also be aware of the possibility of neurocognitive and developmental disorders in their adolescent clients.

Take a moment to provide an overview of neurocognitive and developmental disorders, which can affect ALHIV — particularly those infected perinatally. Encourage discussion by asking participants:

- *What are some of the signs and symptoms of neurocognitive and developmental disorders?*
- *What can health workers do to support clients with neurocognitive and developmental disorders and their families?*

Fill in as needed using the content below and in the slides.



Make These Points

- Adolescents who experienced severe immunodeficiency and illness as children are most at risk of developing neurocognitive and developmental disorders.
- It is important to routinely assess clients' developmental and neurocognitive status.
- Signs of neurocognitive and developmental disorders include: slowed psychomotor speed, delayed expressive language skills, memory deficits, poor attention, developmental impairment, and difficulty learning social behaviors.
- Ensure that adolescent clients are on an adequate ART regimen to prevent, or slow further progression of, neurocognitive impairment. Health workers can also provide supportive counseling and referrals to facility- and community-based resources.

Neurocognitive and Developmental Disorders

HIV in children, particularly those infected perinatally, is associated with developmental delays and cognitive impairments. Cognitive impairments can include language, motor, and behavioral impairments. Some children living with HIV have normal development, some have mild impairment, and others have severe impairment. Factors that affect the degree of impairment include the timing of HIV infection and the use of ART.

Assessment of neurocognitive and developmental status should be routinely incorporated into the care of all children and adolescents with HIV infection.

Signs and symptoms of neurocognitive and developmental disorders:

- Slowed psychomotor speed (taking longer than normal to understand what someone else is saying and then respond)
- Delayed expressive language skills (problems expressing oneself with language)
- Memory deficits (experiencing a loss of memory)
- Poor attention (difficulty concentrating or paying attention)
- Developmental impairment (failure to achieve developmental milestones); developmental impairment is most common among children who experienced severe immunodeficiency during the first few years of life. However, even children and youth with less advanced HIV disease can have mild to moderate developmental impairments related to HIV infection.
- Difficulty learning social behaviors and/or self-care

Management and treatment for neurocognitive and developmental disorders:

- Provide client and family with tailored supportive counseling that meets the unique strengths, disabilities, and needs of the adolescent
- Encourage caregivers to follow this general principle: reward effort, not results
- Ensure that the adolescent is on an adequate ART regimen to prevent or slow further progression of neurocognitive impairment
- Refer the client for neuropsychological testing
- Link client and family to specialized care and community-based resources for children and adolescents with intellectual and developmental disabilities, if available
- Provide the caregivers of older, stronger adolescents who are severely impaired with assistance and support, including through linkages to community resources



Trainer Instructions

Slides 96–102

Step 26:

Lead participants through Exercise 1, which provides them with an opportunity to apply their knowledge of adolescent clinical care to specific case studies using the 5 “A’s” as a way of communicating clinical information.

Exercise 1: The Adolescent Package of Care: Case studies in small groups and large group discussion	
Purpose	To review clinical care and treatment of ALHIV according to national guidelines
Duration	60 minutes
Advance Preparation	Review the case studies and suggested answers.
Introduction	We will now break into small groups to work through case studies and apply our clinical care skills for adolescents living with HIV. Remember to use the 5 “A’s” as you discuss your case, keeping in mind the likely needs and challenges of the adolescent client.
Activities	<p>Case Studies in Small Groups</p> <ol style="list-style-type: none"> 1. Break participants into 4 small, multidisciplinary groups. 2. Ask each group to assign a facilitator and a notetaker. Give each small group flip chart paper and markers. 3. The notetaker should write “ASSESS,” “ADVISE,” “AGREE,” “ASSIST,” and “ARRANGE” along the left margin of the flip chart paper. 4. Refer participants to the case studies written in the Participant Manual and assign 1 case study to each small group. 5. Give the small groups about 20 minutes to read and come up with answers to their case study, writing on the flip chart page: <ul style="list-style-type: none"> • Assess: Key points inferred from the assessment (participants may have to make inferences from the case study) • Advise: How the client should be advised • Agree: Key points that should be negotiated with the client • Assist: How the client should be assisted • Arrange: What services or follow-up appointments need to be arranged, and what should be recorded in the notes <p>Remind participants to refer to Table 3.2: “Using the 5 ‘A’s’” to guide their case study discussions. If small groups have extra time, they may move onto other case studies.</p> <p>Report Back and Large Group Discussion</p> <ol style="list-style-type: none"> 6. Bring the large group back together and ask each small group to briefly present their case study and the key points of their discussion (give groups 5-7 minutes each). 7. Allow time for the large group to comment on each case study. Make any additions or corrections as needed. 8. (optional) Be sure to engage the adolescent co-trainer in the small group discussions as well as in the large group presentations of the case studies. He or she should be encouraged to reflect on personal experiences and to contribute to the discussions, paying special attention to any adherence or psychosocial issues that participants may have left out.



Debriefing	<ul style="list-style-type: none"> • It is important to conduct a thorough clinical assessment focusing on clinical, laboratory, social, developmental, growth, and emotional factors each time an ALHIV visits the clinic. • It is always important to stay up-to-date on and follow national guidelines. • HIV-related care must be family-centered, as the key to resolving a client’s problems often lies in working with his or her caregivers or other family members. • We must also ensure that the care provided to clients is multidisciplinary — each member of the care team will know and understand a different aspect of each client’s case and, when these perspectives are shared, a well-informed care plan can be developed.
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Exercise 1: The Adolescent Package of Care: Case studies in small groups and large group discussion

Case Study 1:
 K___ recently tested HIV-positive at the district hospital. Today is her 1st visit to your clinic. Although she is 14 years old, you think that she acquired HIV through MTCT because she has never had sex and has no history of abuse. The fact that K___’s mother died of a disease described as TB when she was 16 months old has further supported your suspicion. Although she is relatively healthy, you notice that she takes longer than most 14-year-olds to understand what you are saying, she becomes impatient quickly with the clinic processes, and her auntie (her primary caregiver) complains that she doesn’t do well in school and has difficulty concentrating. You can’t help but notice that she looks more like a 10-year-old than a 14-year-old. *How do you proceed with K___?*

Key points for trainers: K___

Assess:

- As today is K___’s first visit, her visit should be guided by Table 3.3: “Key steps — enrollment visit.” Given K___’s impatience, you may not be able to complete all of the steps today.
- Based on what you’ve seen in the clinic and heard from K___’s auntie, it is quite possible that K___ has been experiencing neurocognitive and developmental delays. Review her history, physical examination, WHO staging, and CD4 test results once they are available. Even if her CD4 is above 350, she may qualify for ART because of her small stature (malnutrition or stunting). ART may prevent or slow further progression of neurocognitive impairment.
- If available, consider a full evaluation of her developmental and intellectual capacity.

Advise and Agree:

- Provide K___ and her auntie with tailored supportive counseling that meets K___’s unique strengths, disabilities, and needs.
- As the concept of chronic care may be new to K___, her auntie, and other family, take some time to explain how the clinic works, what you expect to do for K___, and when you need her to return again. K___ and her auntie may need outreach support to ensure that they return to the clinic for their next visit.

Assist and Arrange:

- Link K___ and her auntie to specialized care and community-based resources for children and adolescents with intellectual and developmental disabilities (if available). Make appointment to see K___ and her auntie in 2 weeks, by which time her enrollment lab results should be available.

Case Study 2:

S___ is 17 years old and was diagnosed with HIV at the STI clinic about 2 months ago. This is her 2nd visit to the HIV clinic. After being screened for TB at her enrollment visit 1 month ago, she was started on both IPT and CTX. You just received her lab work and her CD4 cell count is 325 (even though she is clinical stage 2) and her Hb is 12 g/dl. *How do you proceed with S___?*

Key points for trainers: S___

Assess:

- Review the clinical notes from her enrollment visit. Complete any steps that were left incomplete during her 1st visit (see Table 3.3: “Key steps — enrollment visit”).
- Follow the steps in Table 3.4: “Key steps — follow-up visit, clients NOT on ART.”

Advise and Agree:

- Ask about adherence to CTX and IPT and also about side effects.
- As S___ is eligible for ART, initiate a discussion on adherence to ART. Based on that discussion, her clinical status and the urgency to start treatment, as well as the other medications S___ is currently taking, decide when to start her on ART. If you feel she is ready and committed to excellent adherence, you may start her on ART today.
- If S___ is currently sexually active, ensure that she is using a contraceptive method and that she is empowered to negotiate safer sex.
- When ART is initiated, she should be started on the 1st line regimen, probably AZT or TDF + 3TC or FTC + NVP or EFV. As her Hb levels are normal, there is no contraindication to AZT. The choice of 3TC versus FTC usually depends on country protocol and availability. Be sure to inquire about pregnancy intention and contraception use before considering prescribing EFV.

Assist and Arrange:

- Summarize the agreed upon next steps and provide S___ with the support she needs to follow through with these steps. Schedule a follow-up appointment for S___ — the timing will depend on her specific care and treatment plan. If she will be starting ART today, she should return in 2 weeks.

Case Study 3:

T___ is 17 years old and was diagnosed with HIV 1 year ago. T___ is quite healthy; at her last visit, her CD4 cell count was 500 and she was a clinical stage 1. The only reason she was tested last year was because she had heard through a friend that her old boyfriend was rumored to have HIV. Today, however, T___ looks thin and tired — much different from the way she looked the last time you saw her just 6 months ago. When she comes into the exam room, you realize that she has also been coughing. *How do you proceed with T___?*

Key points for trainers: T___

Assess:

- Follow the steps in Table 3.4: “Key steps — follow-up visit, clients NOT on ART.”
- A key issue is the apparent decline in T___’s health. Ensure that T___’s physical exam and interim history are thorough. Inquire about any alcohol or drug use, pregnancy and STIs, and any changes in her living situation or economic status.
- As she is experiencing weight loss and coughing, make sure that T___ is screened for TB, even if she was put on IPT at the last visit.
- Request a CD4 cell count. If she does have TB, she will be eligible for ART based on clinical criteria.

Advise and Agree:

- Find out what T___ defines as her key issues for today’s visit. Undertake a thorough psychosocial assessment. Keep in mind that T___’s underlying issue may be psychosocial rather than physical (for example, a recent break up with a boyfriend, arguments with her parents, failing grades at school, etc.). Also, substance abuse including excessive alcohol use, can lead to these changes/symptoms, so it is important to ask her about these things.
- Keep in mind that, if T___ does have TB, she must be started on TB medications first and then on ART within 8 weeks. Nonetheless, if you think that she will be eligible for ART, using either immunological criteria (CD4 cell count) or clinical criteria (for example, if the TB screen is positive), initiate adherence preparation (see Module 8).
- If T___ is currently sexually active, ensure that she is using a contraceptive method; give her condoms and make sure she knows how to use them; and discuss how she can best negotiate safer sex. Also ask her about symptoms of STIs.

Assist and Arrange:

- Summarize the agreed upon next steps and provide T___ with the support she needs to follow through with these steps. Schedule a follow-up appointment for T___— the timing will depend on her specific care and treatment plan. If she will be starting ART today, she should return in 2 weeks.

Case Study 4:

A___ is 13 years old and acquired HIV perinatally. He is at the clinic today for his routine appointment. A___ has been on AZT + 3TC + EFV since he was 5 years old. He remains on this same regimen and was just discharged from the inpatient unit with bacterial pneumonia. When you examine A___ today, you realize that he has lost 4 kg since his last visit. His CD4 cell count is currently 350, when previously it was over 500. *How do you proceed with A___?*

Key points for trainers: A___

Assess:

- Follow the checklist in Table 3.5: “Key steps — follow-up visit, clients on ART.”
- As A___ has developed a new infection (even though bacterial pneumonia is not considered a stage 4 condition), his CD4 has dropped, and he has lost weight, he may have treatment failure.

- Assess and discuss adherence with A___ and his caregiver and ensure that A___ has been adherent to his ART regimen. As A___ is now 13 years old and in adolescence, he and his caregiver may be facing new adherence challenges that are different from when A___ was a child. Also ask about any major changes going on in A___'s life that could affect adherence, such as changes in the home, at school, with friends, etc.
- Ask about disclosure — if A___ has not been fully disclosed to or if he has questions about his health status or medications that have not been answered, this may contribute to adherence challenges.
- Repeat CD4 testing to confirm the decline in CD4 (and ensure that the CD4 is done after inter-current illness, e.g., after his bacterial pneumonia has been treated). Even though his CD4 count is not extremely low, it has still dropped considerably and A___ needs to be evaluated for treatment failure (and he may need a drug change). If available, check viral load to confirm if treatment failure has occurred.
- If A___ was not previously taking CTX because his CD4 count was high, enquire if he started taking CTX during the recent hospital admission.

Advise and Agree:

- Discuss adherence with A___ and his caregiver and address any new adherence challenges. Remind A___'s caregiver that adherence challenges change over time and, even if A___ took his ART and CTX with no problems as a child, there may be new challenges now that he is an adolescent.
- Discuss disclosure. At age 13, A___ should be fully disclosed to. Ensure that A___ has a chance to talk about any questions or concerns he has about living with HIV, his care, or his medications.
- Consider starting A___ on CTX if this was not already done during his recent hospital admission.

Assist and Arrange:

- Provide any referrals as suggested by the physical exam and counseling session. If available, link A___ to an adolescent peer educator and support group for ongoing support.
- Ask A___ and his caregiver to return in 2 weeks, by which time you should have lab results available to make a decision.
- If treatment failure is confirmed and adherence has been good, the multidisciplinary team should discuss the pros and cons of starting a 2nd line regimen. Then, you will likely need to work as a team to prepare A___ (and his caregiver) to start a 2nd line regimen.



Trainer Instructions

Slide 103

Step 27:

Allow 5 minutes for questions and answers on this session.



Trainer Instructions

Slides 104–107

Step 28:

Ask participants what they think the key points of the module are. What information will they take away from this module?

Summarize the key points of the module, using participant feedback and the content below.

Step 29:

Ask if there are any questions or clarifications.



Module 3: Key Points

- Some ALHIV will have acquired HIV perinatally, while others will have acquired HIV later in childhood or adolescence. Although their histories, experiences, and needs may differ significantly, there are also many similarities between these 2 groups of ALHIV.
- HIV programs for adolescents should include a broad package of services and support, including much more than just the provision of ART.
- Adolescent services should be age- and developmentally-appropriate and should be responsive to the needs of both perinatally and behaviorally infected clients.
- Providing “1-stop shopping,” youth-friendly services, and family-focused care will better help meet the needs of adolescent clients.
- Health workers can use the 5 “A’s” when providing clinical and psychosocial care and support to adolescent clients (and caregivers).
- Always refer to national guidelines and training packages for specific details and guidance on adolescent HIV care and treatment.
- The clinical assessment for a client with HIV needs to be thorough and should focus on clinical, laboratory, psychosocial, nutrition, and social parameters. It is also important to routinely assess clients’ developmental and neurocognitive status.
- Where available, CD4 cell count should be measured at time of diagnosis and at least every 6 months thereafter, regardless of whether the ALHIV is on ART or not.
- The unavailability of laboratory monitoring, including CD4 and chemistries, should NOT prevent adolescents from receiving ART.
- Initiate CTX when CD4 count is $<350\text{cells}/\text{mm}^3$, regardless of clinical stage, or, if CD4 count is unavailable, start when adolescent is in clinical stage 2, 3, or 4.
- The decision to initiate ART is based on immunological and clinical criteria ($\text{CD4} \leq 350$ or WHO stage 3 or 4) and is also informed by other considerations, such as laboratory results, opportunistic infection screening, and adherence readiness. Always follow national guidelines.
- Health workers should be aware of and look out for possible events after ART initiation. It is important to allow at least 6 months before judging a regimen’s effectiveness.
- After starting ART, clinical monitoring visits should occur at minimum at weeks 2, 4, 8, and 12, and then every 3 months. ALHIV not eligible for ART should visit the clinic every 3-6 months.
- Treatment failure is when ART stops controlling an individual’s virus and he or she starts getting sicker. There are 3 criteria for treatment failure: clinical, immunologic, and virologic.
- All ALHIV should be screened for active TB, contact with a TB source case, and current TB symptoms at every visit to a health facility.
- All ALHIV with no evidence of active TB disease and no contraindications to IPT should begin IPT. ALHIV with active TB disease should begin TB treatment immediately and should also start ART as soon as possible. Always follow national TB guidelines.

Appendix 3A: Laboratory Monitoring Before, During, and After Initiating ART

Phase of HIV management	Recommended test	Desirable test
At HIV diagnosis	CD4	HBsAg
Pre-ART	CD4	
At start of ART	CD4	Hb for AZT ¹ Creatinine clearance for TDF ² ALT for NVP ³ Pregnancy test for sexually active adolescent females prior to initiating EFV
On ART	CD4	Hb for AZT ¹ Creatinine clearance for TDF ² ALT for NVP ³
At clinical failure	CD4	Viral load
At immunological failure	Viral load	
Women exposed to PMCT interventions with sd-NVP with a tail within 12 months and without a tail within 6 months of initiating ART	Viral load 6 months after initiation of ART	
<p>1 Recommended test in patients with high risk of adverse events associated with AZT (low CD4 or low BMI). For children and young adolescents, measure hemoglobin at week 8 after initiation of AZT-containing regimens, or more frequently if symptoms indicate.</p> <p>2 Recommended test in patients with high risk of adverse events associated with TDF (underlying renal disease, older age group, low BMI, diabetes, hypertension, and concomitant use of a boosted PI or nephrotoxic drugs).</p> <p>3 Recommended test in patients with high risk of adverse events associated with NVP (ART-naive HIV+ women with CD4 of >250 cells/mm³, HCV coinfection).</p> <p>Patients who are not yet eligible for ART should have CD4 count measurement every 6 months and more frequently as they approach the threshold to initiate ART. If feasible, HBsAg should be performed to identify people with HIV/HBV coinfection and who, therefore, should initiate TDF-containing ART.</p>		

Source: WHO. (2010). *Antiretroviral therapy for HIV infection in adults and adolescents. Recommendations for a public health approach, 2010 revision*. Geneva: WHO.

Appendix 3B: HEADSS Interview Questions

✓	Topic and key points
	1. Home and environment
	<ul style="list-style-type: none"> Where do you live and who lives there with you?
	<ul style="list-style-type: none"> How many brothers and sisters do you have and what are their ages? Are your brothers and sisters healthy?
	<ul style="list-style-type: none"> Are there any new people living in your home?
	<ul style="list-style-type: none"> What are the rules like in your home?
	<ul style="list-style-type: none"> How do you get along with your parents? Your siblings? What kinds of things do you and your family argue about the most? What happens when there is a disagreement?
	<ul style="list-style-type: none"> Is there anything you would like to change about your family?
	2. Education and employment
	<ul style="list-style-type: none"> Are you in school? What are you good at in school? What is hard for you? What grades do you get?
	<ul style="list-style-type: none"> Which school do you go to? Any recent changes in schools?
	<ul style="list-style-type: none"> What do you like best and least about school? Favorite subjects? Worst subjects?
	<ul style="list-style-type: none"> What were your most recent grades? Are these the same or different from past grades?
	<ul style="list-style-type: none"> How many hours of homework do you do every day?
	<ul style="list-style-type: none"> How much school did you miss last/this year?
	<ul style="list-style-type: none"> What do you want to do when you finish school? Any future plans/goals?
	<ul style="list-style-type: none"> Do you work now? How much? Have you worked in the past?
	<ul style="list-style-type: none"> How do you get along with teachers? Employers?
	3. Activities
	<ul style="list-style-type: none"> What do you do for fun? What things do you do with friends? What do you do with your free time?
	<ul style="list-style-type: none"> Are most of your friends from school or somewhere else? Are they the same age as you?
	<ul style="list-style-type: none"> Do you hang out with mainly people of your same sex or with a mixed crowd?
	<ul style="list-style-type: none"> Do you have 1 best friend or a few friends? Do you have a lot of friends?
	<ul style="list-style-type: none"> Do you spend time with your family? What do you do with your family?
	<ul style="list-style-type: none"> Do you see your friends at school and on weekends? Are there a lot of parties?
	<ul style="list-style-type: none"> Do you do any regular sport or exercise? What are your hobbies or interests?
	<ul style="list-style-type: none"> Do you have a religious affiliation, belong to a church/temple/mosque/synagogue, or practice some kind of spiritual belief?
	<ul style="list-style-type: none"> Do you read for fun? What do you read?
	<ul style="list-style-type: none"> What is your favorite music?

✓	Topic and key points
	4. Drugs
	<ul style="list-style-type: none"> • Many young people experiment with drugs, alcohol, or cigarettes. Have you or your friends ever tried them? What have you tried?
	<ul style="list-style-type: none"> • When you go out with your friends or to a party, do most of the people you hang out with drink or smoke? Do you? How much and how often?
	<ul style="list-style-type: none"> • Does anyone in your family drink, smoke, or use other drugs? If so, how do you feel about this — is it a problem for you?
	<ul style="list-style-type: none"> • Have you or your friends ever tried any other drugs? Which drugs specifically? Have you ever used a needle?
	<ul style="list-style-type: none"> • Do you regularly use other drugs? How much and how often?
	<ul style="list-style-type: none"> • Have you ever been in a car accident or in trouble with the law? Were any of these related to drinking or using drugs?
	<ul style="list-style-type: none"> • How do you pay for your cigarettes, alcohol, or drugs?
	5. Sexuality
	<ul style="list-style-type: none"> • Are you involved in a relationship? Have you been involved in a relationship in the past? How was that experience for you?
	<ul style="list-style-type: none"> • How would you describe your feelings towards boys or girls?
	<ul style="list-style-type: none"> • How do you see yourself in terms of sexual preference, i.e. gay, straight, or bisexual?
	<ul style="list-style-type: none"> • Have you had sex? Was it a good experience? Are you comfortable with sexual activity? How many partners have you had?
	<ul style="list-style-type: none"> • Are you using contraception? What type and how often (10%, 50%, or 70% of the time)?
	<ul style="list-style-type: none"> • Have you ever been pregnant or had an abortion? For males, Ask: has a partner of yours ever been pregnant?
	<ul style="list-style-type: none"> • Have you ever had a discharge or sore that you are concerned about? What do you know about STDs and prevention?
	<ul style="list-style-type: none"> • Have you ever had a pap smear?
	<ul style="list-style-type: none"> • Have you had an experience in the past where someone did something to you that you did not feel comfortable with or that made you feel disrespected?
	<ul style="list-style-type: none"> • If someone abused you, who would you talk to about this? How do you think you would react to this?
	<ul style="list-style-type: none"> • For females: Ask about menarche, last menstrual period (LMP), and menstrual cycles. Also inquire about breast self examination (BSE) practices.
	<ul style="list-style-type: none"> • For males: Ask about testicular self-examination (TSE) practices.
	6. Depression/suicide
	See <i>Appendix 6B: Sample Screening Tools for Depression and Suicide</i> .

Adapted from: H.E.A.D.S.S. — *A Psychosocial Interview For Adolescents*. Available at: http://search.phsa.ca/cgi-bin/MsmGo.exe?grab_id=0&page_id=8144&query=HEADSS

Appendix 3C: WHO Clinical Staging of HIV Disease in Children with Established HIV Infection

Use this clinical staging for adolescents younger than 15 years of age.

Clinical Stages	
Clinical Stage 1	
<ul style="list-style-type: none"> Asymptomatic 	<ul style="list-style-type: none"> Persistent generalized lymphadenopathy
Clinical Stage 2	
<ul style="list-style-type: none"> Unexplained persistent hepatosplenomegaly Papular pruritic eruptions Extensive wart virus infection Extensive molluscum contagiosum Unexplained persistent parotid enlargement 	<ul style="list-style-type: none"> Recurrent oral ulcerations Lineal gingival erythema Herpes zoster Recurrent or chronic upper respiratory tract infection (otitis media, otorrhea, sinusitis, tonsillitis) Fungal nail infections
Clinical Stage 3	
<ul style="list-style-type: none"> Unexplained moderate malnutrition not adequately responding to standard therapy Unexplained persistent diarrhea (14 days or more) Unexplained persistent fever (above 37.5°C, intermittent or constant, for longer than 1 month) Persistent oral Candidiasis (after first 6 weeks of life) Oral hairy leukoplakia Acute necrotizing ulcerative gingivitis/periodontitis 	<ul style="list-style-type: none"> Lymph node TB Pulmonary TB Severe recurrent bacterial pneumonia Symptomatic lymphoid interstitial pneumonitis Chronic HIV-associated lung disease including bronchiectasis Unexplained anemia (<8.0 g/dl), neutropenia (<0.5x10⁹/L³) or chronic thrombocytopenia (<50 x 10⁹/L³)
Clinical Stage 4	
<ul style="list-style-type: none"> Unexplained severe wasting, stunting, or severe malnutrition not responding to standard therapy Pneumocystis pneumonia Recurrent severe bacterial infections (e.g. empyema, pyomyositis, bone or joint infection, meningitis, but excluding pneumonia) Chronic herpes simplex infection (orolabial or cutaneous of more than 1 month's duration, or visceral at any site) Extrapulmonary TB Kaposi sarcoma Oesophageal candidiasis (or candidiasis of trachea, bronchi, or lungs) Central nervous system toxoplasmosis (after the neonatal period) 	<ul style="list-style-type: none"> HIV encephalopathy Cytomegalovirus (CMV) infection; retinitis or CMV infection affecting another organ, with onset at age more than 1 month Extrapulmonary cryptococcosis, including meningitis Disseminated endemic mycosis (extrapulmonary histoplasmosis, coccidioidomycosis, penicilliosis) Chronic cryptosporidiosis (with diarrhea) Chronic isosporiasis Disseminated non-tuberculous mycobacterial infection Cerebral or B cell non-Hodgkin lymphoma Progressive multifocal leukoencephalopathy HIV-associated cardiomyopathy or nephropathy
<p>Some additional specific conditions can be included in regional classifications (e.g. penicilliosis in Asia, HIV-associated rectovaginal fistula in Southern Africa, reactivation of trypanosomiasis in Latin America), see national guidelines.</p>	

Source: WHO. (2010). *Antiretroviral therapy for HIV infection in infants and children: Towards universal access, recommendations for a public health approach, 2010 revision*. Geneva: WHO.

Appendix 3D: WHO Clinical Staging of HIV Disease in Adults and Adolescents

Use this clinical staging for adolescents age 15 years or older.

Clinical Stages	
Clinical Stage 1	
<ul style="list-style-type: none"> Asymptomatic 	<ul style="list-style-type: none"> Persistent generalized lymphadenopathy
Clinical Stage 2	
<ul style="list-style-type: none"> Moderate unexplained weight loss (under 10% of presumed or measured body weight) Recurrent respiratory tract infections (sinusitis, tonsillitis, otitis media, pharyngitis) Herpes zoster 	<ul style="list-style-type: none"> Angular cheilitis Recurrent oral ulceration Papular pruritic eruptions Seborrhoeic dermatitis Fungal nail infections
Clinical Stage 3	
<ul style="list-style-type: none"> Unexplained severe weight loss (over 10% of presumed or measured body weight) Unexplained chronic diarrhea for longer than 1 month Unexplained persistent fever (intermittent or constant for longer than 1 month) Persistent oral candidiasis Oral hairy leukoplakia Pulmonary tuberculosis 	<ul style="list-style-type: none"> Severe bacterial infections (e.g. pneumonia, empyema, meningitis, pyomyositis, bone, or joint infection, bacteraemia, severe pelvic inflammatory disease) Acute necrotizing ulcerative stomatitis, gingivitis, or periodontitis Unexplained anemia (below 8 g/dl), neutropenia (below $0.5 \times 10^9/l$), and/or chronic thrombocytopenia (below $50 \times 10^9/l$)
Clinical Stage 4	
<ul style="list-style-type: none"> HIV wasting syndrome <i>Pneumocystis jiroveci</i> pneumonia Recurrent severe bacterial pneumonia Chronic herpes simplex infection (orolabial, genital, or anorectal of more than 1 month's duration or visceral at any site) Oesophageal candidiasis (or candidiasis of trachea, bronchi, or lungs) Extrapulmonary tuberculosis Kaposi sarcoma Cytomegalovirus disease (retinitis or infection of other organs, excluding liver, spleen, and lymph nodes) Central nervous system toxoplasmosis HIV encephalopathy 	<ul style="list-style-type: none"> Extrapulmonary cryptococcosis, including meningitis Disseminated nontuberculous mycobacteria infection Progressive multifocal leukoencephalopathy Chronic cryptosporidiosis Chronic isosporiasis Disseminated mycosis (histoplasmosis, coccidiomycosis) Recurrent septicaemia (including nontyphoidal <i>Salmonella</i>) Lymphoma (cerebral or B cell non-Hodgkin) Invasive cervical carcinoma Atypical disseminated leishmaniasis Symptomatic HIV-associated nephropathy or HIV-associated cardiomyopathy

Source: WHO. (2006). *Revised WHO clinical staging and immunological classification of HIV and case definition of HIV for surveillance*. Geneva: WHO.

Appendix 3E: Preferred 2nd line ART Options

Recommended 2nd line regimens for adolescents younger than 15 years of age in the event of treatment failure of 1st line regimens

Recommended 2 nd Line: Boosted PI component + 2 NRTI components					
Preferred 2 nd line regimen					
1 st line regimen at failure	RTI components (NRTI/NNRTI) ^a		PI component	Strength of recommendation	Quality of evidence
2 NRTIs + 1 NNRTI: AZT- or d4T- containing	ABC + 3TC OR ABC + ddI	PLUS	LPV/r ^d	Strong	Moderate
OR ABC-containing	AZT + 3TC OR AZT + ddI		LPV/r ^d	Strong	High
Triple NRTI	ddI ^b + EFV ^c OR NVP		LPV/r ^d	Strong	High

^a Continuation of 3TC in 2nd line regimens may be considered.

^b ddI may not need to be taken on an empty stomach in children.

^c EFV is currently not recommended for children <3 years of age, and should be avoided in post-pubertal adolescent girls who are either in the 1st trimester of pregnancy or are sexually active and not using adequate contraception.

^d LPV/r is available as solid and liquid co-formulations.

Source: WHO. (2010). *Antiretroviral therapy for HIV infection in infants and children: Towards universal access*. Geneva: WHO.

Recommended 2nd line ARV therapy for adolescents and adults 15 years of age or older in the event of treatment failure of 1st line regimens

Target population		Preferred options	Comments
Adults and adolescents (including pregnant women)	If d4T or AZT used in 1 st line therapy	TDF + 3TC or FTC + ATV/r or LPV/r	NRTI sequencing based on availability of FDCs and potential for retained antiviral activity, considering early and late switch scenarios ATV/r and LPVr are comparable and available as heat-stable FDCs or co-package formulations
	If TDF used in 1 st line therapy	AZT + 3TC + ATV/r or LPVr	
TB/HIV coinfection	If rifabutin available	Same regimens as recommended above for adults and adolescents	No difference in efficacy between rifabutin and rifampicin Rifabutin has significantly less drug interaction with bPIs, permitting standard bPI dosing
	If rifabutin not available	Same NRTI backbones as recommended for adults and adolescents plus LPVr or SQV/r with superboosted dosing of RTV (LPV/r 400 mg/400 mg twice daily or LPV/r 800 mg/200 mg twice daily or SQV/r 400 mg/400 mg twice daily)	Rifampicin significantly reduces the levels of bPIs, limiting the effective options. Use of extra doses of ritonavir with selected bPIs (LPV and SQV) can overcome this effect but with increased rates of toxicity
Hepatitis B coinfection		AZT + TDF + 3TC or FTC + ATV/r or LPVr	In case of ART failure, TDF + 3TC or FTC should be maintained for anti-HBV activity and the 2 nd line regimen should include other drugs with anti-HIV activity

Source: WHO. (2010). *Antiretroviral therapy for HIV infection in adults and adolescents: recommendations for a public health approach, 2010 revision*. Geneva: WHO.

Appendix 3F: ARV Dosages for Older Adolescents and Adults

Generic Name	Dose
Nucleoside reverse transcriptase inhibitors (NRTIs)	
Abacavir (ABC)	300 mg twice daily or 600 mg once daily
Didanosine (ddI)	400 mg once daily (>60 kg) 250 mg once daily (≤60 kg)
Emtricitabine (FTC)	200 mg once daily
Lamivudine (3TC)	150 mg twice daily or 300 mg twice daily
Stavudine (d4T)	30 mg twice daily
Zidovudine (AZT)	250-300 mg twice daily
Nucleotide reverse transcriptase inhibitors (NtRTIs)	
Tenofovir (TDF)	300 mg once daily ¹
Non-nucleoside reverse transcriptase inhibitors (NNRTIs)	
Efavirenz (EFV)	600 mg once daily
Etravirine (ETV)	200 mg twice daily
Nevirapine (NVP)	200 mg once daily for 14 days, followed by 200 mg twice daily ²
Proteases inhibitors (PIs)	
Atazanavir + ritonavir (ATV/r)	300 mg + 100 mg once daily
Darunavir + ritonavir (DRV/r)	600 mg + 100 mg twice daily
Fos-amprenavir + ritonavir (FPV/r)	700 mg + 100 mg twice daily
Indinavir + ritonavir (IDV/r)	800 mg + 100 mg twice daily
Lopinavir/ritonavir (LPV/r)	Fixed Dose Combination tablets (LPV 200 mg/RTV 50 mg) Two tablets (400 mg/100 mg) twice daily ³
	Considerations for individuals on TB therapy: <ul style="list-style-type: none"> In the presence of rifabutin, no dose adjustment required In the presence of rifampicin, use ritonavir superboosting (LPV 400 mg + RTV 400 mg twice daily) or LPV 800 mg + RTV 200 MG twice daily, with close clinical and hepatic enzyme monitoring
Saquinavir + ritonavir (SQV/r)	1000 mg + 100 mg twice daily
	Considerations for individual on TB therapy: <ul style="list-style-type: none"> In the presence of rifabutin, no dose adjustment required In the presence of rifampicin, use ritonavir superboosting (SQ 400 mg + RTV 400 mg twice daily) with close clinical and hepatic enzyme monitoring
Integrase strand transfer inhibitors (INSTIs)	
Raltegravir (RAL)	400 mg twice daily

¹ TDF dosage adjustment for individual with altered creatinine clearance can be reconsidered (using Cockcroft-Gault formula). Creatinine clearance ≥50ml/min. 300 mg once daily.

Creatinine clearance 30-49 ml/min. 300 mg every 48 hours.

Creatinine clearance 10-29 ml/min (or dialysis). 300 mg once every 72-96 hours.

Cockcroft-Gault formula: $GFR = (140 - age) \times (Wt \text{ in kg}) \times (0.85 \text{ if female}) / (72 \times Cr)$

² In the presence of rifampicin, or when patients switch from EFC to NVP, no need for lead-in dose of NVP.

³ LPV/r can be administered as 4 tablets once daily (i.e. LPV 800 mg + RTV 200 mg once daily) in patients with less than three LPV resistance-associated mutations on genotypic testing. Once-daily dosing is not recommended in pregnant women or patients with more than three LPV resistance-associated mutations.

Source: WHO. (2010). *Antiretroviral therapy for HIV infection in adults and adolescents. Recommendations for a public health approach, 2010 revision*. Geneva: WHO.

For information on serious, acute, and chronic toxicities, see: WHO's *Antiretroviral Therapy for HIV Infection in Adults and Adolescents. Recommendations for a Public Health Approach, 2010 Revision*. Available at: <http://www.who.int/hiv/pub/arv/adult2010/en/index.html>

For more information on pediatric ARV dosing, including simplified dosing charts, refer to your national pediatric ART guidelines and WHO (2010) *Antiretroviral Therapy for HIV Infection in Infants and Children: Towards Universal Access*. Geneva: WHO. Look for *ANNEX E: Prescribing Information and Weight-based Dosing of Available ARV Formulations for Infants and Children*, which starts on page 101. Available at: <http://www.who.int/hiv/pub/paediatric/infants2010/en/index.html>

Appendix 3G: TB Screening Tool for Children and Younger Adolescents

Name: _____ ART#: _____ Gender: M F Date of Birth: ___/___/___

Date of Screening:	/ /	/ /	/ /	/ /	/ /	/ /
Age:						
1. Is child currently receiving anti-TB medications? (Yes or No) If Yes, STOP Screen. Rescreen after completion of TB Treatment. If No, answer questions below.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Is child currently receiving Isoniazid Prophylactic Therapy (IPT)? (Yes or No)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. TB Exposure History: Close contact with a person diagnosed with pulmonary TB in the past 12 months? (Yes or No)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. TB Symptom Screen: Does the child currently have any of the following TB symptoms? (Yes or No)						
A. Does child currently have cough?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
B. Does child have documented weight loss or failure to thrive during the past 3 months, not responding to nutritional rehabilitation?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
C. Does child have fever?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Screening Results: (A through C above) Positive = presence of one or more of symptoms Negative = absence of all symptoms	<input type="checkbox"/> Positive <input type="checkbox"/> Negative	<input type="checkbox"/> Positive <input type="checkbox"/> Negative	<input type="checkbox"/> Positive <input type="checkbox"/> Negative	<input type="checkbox"/> Positive <input type="checkbox"/> Negative	<input type="checkbox"/> Positive <input type="checkbox"/> Negative	<input type="checkbox"/> Positive <input type="checkbox"/> Negative
5. Follow up:						
A. Child Has No Exposure to TB and TB Symptom Screen is Negative: Re-screen in 6 months. Write date for next screen.	/ /	/ /	/ /	/ /	/ /	/ /
B. Child Has Exposure to TB and /or Positive Symptom Screen: Child is a TB Suspect and needs to be evaluated for TB disease. This includes physical exam, CXR, sputum for AFB, gastric aspirate, or Induced sputum	<input type="checkbox"/> CXR <input type="checkbox"/> AFB Smear	<input type="checkbox"/> CXR <input type="checkbox"/> AFB Smear	<input type="checkbox"/> CXR <input type="checkbox"/> AFB Smear	<input type="checkbox"/> CXR <input type="checkbox"/> AFB Smear	<input type="checkbox"/> CXR <input type="checkbox"/> AFB Smear	<input type="checkbox"/> CXR <input type="checkbox"/> AFB Smear
6. Nurse Initial/Signature:						

Instructions

- **For new forms:** Record the **Patient's Name, ART Number, Gender, and Date of Birth** at the top of the form.
- **For previously used forms:** Review the notes about the previous visit screen before starting.
- **Screening date:** Record the day (**DD**), month (**MM**), and year (**YY**) screening was performed.
- **Age:** Record the child's age.

1) Is child currently receiving anti-TB medications? Ask the caregiver if child is currently on anti-TB treatment? (**Yes**) If yes, stop screen. Rescreen after completion of anti-TB treatment. (**No**) Continue TB screen by asking questions below.

2) Is child currently on Isoniazid Prophylactic therapy (IPT)? Yes (Y) or No (N). Children on IPT should be screened carefully for signs and symptoms of TB.

3) TB Exposure History: Ask the parent or caregiver if the child has been in close contact (living in the same household or in frequent contact) with any person who was diagnosed with pulmonary TB in the past 12 months. Write (**Yes**) if the child has a close contact with pulmonary TB and (**No**) if there is no history of TB contact.

4) TB Symptom Screen: Complete TB screening by asking the caregiver if the child currently has any of the TB symptoms. Write (Yes) or (No) in the appropriate column.

- A. Does child currently have a cough?
- B. Documented weight loss or failure to thrive, clear deviation from previous growth trajectory, and/or documented crossing of percentile lines during the past 3 months, not responding to nutritional rehabilitation. For growth assessment, please look at the growth chart to ascertain if there has been growth failure.
- C. Does child have fever?

TB Screening Outcome:

Presence of any symptom = **Positive**

Absence of all symptoms = **Negative**

Tick the appropriate box

5) Follow-up:

- A. Child Has No Exposure to TB and TB Symptom Screen is Negative:** Rescreen the child in 6 months. Record the date of the next screen in the space provided.
- B. Child Has Exposure to TB and/or Positive Symptom Screen:** Child is a TB suspect. Child needs full diagnostic work-up for TB. This includes physical exam, CXR, sputum for AFB smear, gastric lavage, etc.

6) Nurse Initial/Signature

Appendix 3H: TB Screening Tool for Older Adolescents and Adults

Patient's Name: _____

Follow-up Visits

Adult & adolescents TB screening questions		Date: ___/___/___ Screening result: Yes/No	Date: ___/___/___ Screening result: Yes/No	Date: ___/___/___ Screening result: Yes/No	Date: ___/___/___ Screening result: Yes/No	Date: ___/___/___ Screening result: Yes/No
1. Current cough		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Fever		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. Weight loss		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Night sweats		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Evaluate for TB if "yes" to anyone of the above (positive TB screening)						
Bacteriology: Sputum for AFB(+/_induced)	Done = <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Result (AFB +, -ve, unknown)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Radiology: CxR, etc.	Done = <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Result (Suggestive, inconclusive, other dx, unknown etc.)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
FNA, Culture, Ultrasound, etc.	Done = <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	If done result	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
TB diagnosed	<input type="checkbox"/> Yes (write type of TB) <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is patient eligible for IPT	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Contraindications for IPT: Active hepatitis (acute or chronic), regular and heavy alcohol consumption or symptoms of peripheral neuropathy						
IPT start date:						
Date INH collected	TB Symptoms [cough, fever, weight loss] (Yes/No)	Hepatotoxicity [abd pain, nausea, jaundice, vomiting, abnormal LFT] (Yes/No)	Neurologic Sx [numbness, tingling, paresthesia] (Yes/No)	Rash (Yes/No)	Adherence (≥90% =good; 80-90%= Fair <80%=Poor)	Remarks
/ /						
/ /						
/ /						
/ /						

Outcome of IPT(Date):

Completed: ___/___/___ Defaulted: ___/___/___ Died: ___/___/___ Pt stopped: ___/___/___ Provider stopped: ___/___/___ Transferred out: ___/___/___

Drafted by ICAP-Ethiopia.

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