

Module 1

Course Introduction



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Session 1.1: Welcome and Introductory Activity

Session Objectives

During this session, participants will:

- Introduce themselves and be introduced to the trainer(s)
- Discuss expectations for the training

Exercise 1

Exercise 1: Getting to know each other: Large group discussion and individual reflection	
Purpose	<ul style="list-style-type: none"> • To provide an opportunity to get to know one another better • To create a comfortable learning environment • To discuss participants' personal and professional strengths, their concerns about infant testing, and their expectations for the training
Activities	<p>Introductions</p> <ol style="list-style-type: none"> 1. The trainer will ask you to take 1 minute to introduce yourself to the group. You will be asked to state your: <ul style="list-style-type: none"> • Name • Place of employment/job title • Number of years of professional experience • Favourite aspect of working with parents and infants or what you're excited about learning from this training <p>Individual reflection</p> <ol style="list-style-type: none"> 2. Think about the following questions, the trainer will facilitate a discussion. Record your thoughts on paper. <ul style="list-style-type: none"> • Strengths: <i>What is 1 personal strength that helps you—or will help you—work effectively with parents and their HIV-exposed infants?</i> • Concerns: <i>What concerns or worries do you have about providing care to parents and HIV-exposed infants?</i> • Expectations: <i>What do you hope to learn during this training course?</i> 3. Note: Save the document on which you wrote your strengths, concerns, and expectations because we will discuss them again on the last day of training.

Adapted from: ICAP. Module 1: Introduction and Course Overview. Adolescent HIV Care and Treatment: A Training Curriculum for Health Workers, Trainer Manual (1)

Session 1.2: Training Objectives, Agenda, and Ground Rules

Session Objectives

During this session, participants will:

- Gain an understanding of the training objectives
- Review the training agenda
- Establish training “ground rules”

Exercise 2

Exercise 2: Setting ground rules and introducing daily activities: Large group discussion	
Purpose	<ul style="list-style-type: none"> • To develop and agree on a set of rules that will create an environment that facilitates learning • To introduce the “<i>Anonymous Question Bowl</i>” as a safe space for asking questions • To introduce the “<i>Morning Rounds</i>” as a way to start each day of the training • To introduce the “<i>How Did it Go</i>” daily evaluation activity as a way of giving feedback to the trainers so they can make adjustments DURING the training course
Activities	<p>Ground rules</p> <ol style="list-style-type: none"> 1. You will be invited to discuss the ground rules that will help you feel comfortable contributing to group discussions. <p>“Anonymous Question Bowl”</p> <ol style="list-style-type: none"> 2. The trainer will point out and explain the purpose of the “<i>Anonymous Question Bowl</i>”. Questions submitted to the “<i>Anonymous Question Bowl</i>” can be technical or personal. It will be checked after the end of each training day and answers provided the next morning. <p>“Morning Rounds”</p> <ol style="list-style-type: none"> 3. We will conduct “<i>Morning Rounds</i>” at the beginning of each training day. This is a time to check in with each other, to recap, answer any questions from the previous day, and to review the agenda for the day. <p>“How Did it Go?”</p> <ol style="list-style-type: none"> 4. At the end of each training day, the you will be asked to write on a piece of paper 1 thing that was good about the day and 1 thing you did not like or needed improvement. You will not put your name on this feedback sheet.

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Session 1.3: Training Pre-Test



Total Session Time: 25 minutes

Session Objective

During this session, participants will:

- Complete the training pre-test

Session 1.4: Paediatric HIV Overview: Global Progress and Goals

Session Objectives

After completing this session, participants will be able to:

- Discuss the status of HIV infections in children
- Discuss approaches and programmatic interventions to reduce mother-to-child HIV transmission
- Discuss approaches and programmatic interventions to ensure that children who are HIV-infected are rapidly identified and initiated on antiretroviral therapy (ART)

Children and HIV: Where We Are Now

Despite the fact that new diagnoses in infants and children under the age of 15 years have fallen dramatically with the scale up of PMTCT services, infants and children are still becoming HIV-infected. In 2018:

- 160,000 children age 0–14 years (down from 423,000 in 2000) became infected with HIV
- 1.7 million children were living with HIV (2)
- 100,000 children died of HIV-related causes (3)

HIV Epidemic Today

Since the beginning of the epidemic to the end of 2018, about 74.9 million people have been infected with HIV and about 32 million people have died of HIV. As of the end of 2018:

- 37.9 million adults were living with HIV
- In 2018 alone, about 770,000 people died of an AIDS-related illness (2)

Sub-Saharan Africa remains most severely affected, with nearly 1 in every 25 adults (4.2%) living with HIV and accounting for nearly two-thirds of the people living with HIV worldwide (4).

Sustainable Development Goals

The Millennium Development Goals (MDGs) expired in September 2015 and were replaced by a Post-2015 Development Framework that included the new Sustainable Development Goals (SDGs).

In this framework, the HIV/AIDS, TB, malaria and other related child- and adult-health goals were replaced by one overarching health goal: Goal 3—Ensure healthy lives and promote wellbeing for all at all ages. This new goal includes a number of ambitious targets related to HIV:

- By 2030, end the AIDS epidemic
- By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning
- Support the research and development of vaccines and medicines

- Substantially increase health financing and the recruitment, development, training and retention of the health workforce (5).

Global Progress in Reducing HIV Infection in Children

Most children with HIV acquired the virus through mother-to-child transmission (MTCT). HIV-infected women can transmit HIV to their infants during pregnancy, labour and delivery, and through breastfeeding. However, MTCT is almost entirely preventable where services are accessible and utilized.

Since 2010 there has been a 41% decline in new HIV infections among children age 0–14 years of age globally (2). PMTCT services, including universal HIV testing for pregnant and breastfeeding women and the provision of ARV drugs, have reduced MTCT rates from approximately 30–45% in breastfeeding populations to less than 2% in some countries.

Infants who are HIV-infected are at high risk for disease progression in the first year of life. In fact, without treatment, one third of infants with HIV die before they reach one year of age and over 50% die by the 2 years (6). As such, it is critical to initiate HIV-infected infants on ART as early as possible. The key to early access to treatment is early diagnosis, highlighting the importance of testing HIV-exposed infants for HIV infection as early as possible and regular testing for HIV-exposed infants according to the national infant testing algorithm, until final HIV status determination the end of breastfeeding.

Areas for improvement:

- Infant HIV testing: in 2018 only 54.9% of HIV-exposed infants were tested for HIV within the recommended first 2 months of life (7). Even fewer are retained in care and tested at 18 months of age or after the end of breastfeeding.
- Paediatric HIV diagnosis and provision of ART: Only 54% of the 1.7 million children living with HIV around the world received ART (2).

Exercise 3

Exercise 3: Large group discussion about HIV in infants and children	
Purpose	<ul style="list-style-type: none"> • To brainstorm potential solutions to challenges in paediatric HIV programmes
Activities	<p>This is an activity that will allow us to brainstorm ways that we can more effectively prevent and treat HIV in children.</p> <ul style="list-style-type: none"> • Question 1: New HIV infections in children have decreased in recent years, but the number of new paediatric HIV infections (160,000 in 2018) is still higher than we want it to be. (2) What do you think needs to be done to reduce the number of children infected with HIV? • Question 2: In 2018, 100,000 infants and children (age 0–14 years) died of HIV globally (3). What do you think needs to be done to lower the infant and child death rate from HIV?

Module 1: Key Points

- This module provided an opportunity for participants to articulate their strengths, concerns about providing testing and care to HIV-exposed infants, and expectations of this training.
- Participants should now have a clear idea of what to expect from the training and hopefully are getting to know their fellow trainees.
- In order to meet development goals and improve the lives of children, it is critical that countries strengthen PMTCT programmes, improve the coverage of infant HIV testing services, support comprehensive care for HIV-exposed infants, and ensure that infants diagnosed with HIV are provided with the HIV-related treatment that they need, including ART.

Appendix 1A: Sample Training Agenda

As this curriculum is modular, the training agenda is flexible. Although the classroom component of the curriculum can be completed in 3 consecutive days, the content may be taught over a longer period of time, for example Monday and Tuesday afternoon, the full day on Wednesday and then Thursday and Friday afternoon. Teaching the content over a longer period of time may minimize disruptions to clinical services. The 3-day classroom experience is complemented with a 2-day practicum; total time for the full course is 5 days.

5-day schedule

Day 1	
Morning Session	<ul style="list-style-type: none"> Registration Module 1: Course Introduction (2 hours, 25 minutes) Module 2: Testing of HIV-exposed infants (2 hours, 5 minutes)
LUNCH	
Afternoon Session	<ul style="list-style-type: none"> Module 2 (continued) Module 3: Comprehensive Care for HIV-exposed Infants (2 hours, 25 minutes) "How Did it Go?"
Day 2	
Morning Session	<ul style="list-style-type: none"> Recap and "Morning Rounds" Module 3 (continued) Module 4: Pre-test Information and DBS Collection for Infant Virological Testing (4 hours, 10 minutes)
LUNCH	
Afternoon Session	<ul style="list-style-type: none"> Module 4 (continued) "How Did it Go?"
Day 3	
Morning Session	<ul style="list-style-type: none"> Recap and "Morning Rounds" Module 5: Post-test Counselling for Infant HIV Testing (4 hours, 5 minutes)
LUNCH	
Afternoon Session	<ul style="list-style-type: none"> Module 5 (continued) Module 6: Course Summary, Practicum and Wrap Up, Session 6.1 only (20 minutes) Optional visit to Practicum sites to meet mentors
Day 4	
Morning Session	<ul style="list-style-type: none"> Clinic-based Practicum
LUNCH	
Afternoon Session	<ul style="list-style-type: none"> Clinic-based Practicum
Day 5	
Morning Session	<ul style="list-style-type: none"> Clinic-based Practicum
LUNCH	
Afternoon Session	<ul style="list-style-type: none"> Module 6: Course Summary, Practicum and Wrap Up, Sessions 6.2, 6.3, and 6.4 (3 hours, 25 minutes)

Appendix 1B. Infant HIV Testing Training Objectives

By the end of this training, participants will be able to:

1. Understand the importance of infant HIV testing
 - List the WHO recommendations for HIV testing of HIV-exposed and sick infants and children
2. Identify the infants that need testing and which test to use
 - Decide—based on age and HIV-exposure status—which HIV testing procedure to use to diagnose HIV in an HIV-exposed or sick infant or child
 - Understand the meaning of a positive and negative HIV virological nucleic acid testing (NAT) or serological test result
 - Understand the importance of re-testing to confirm HIV-positive test results
3. Provide care for HIV-exposed infants and their families from birth through the end of breastfeeding
 - Describe the key components of care for HIV-exposed infants (identification of HIV-exposed infants, preventive care such as ARV prophylaxis and cotrimoxazole prophylaxis, routine infant care including growth monitoring, family care and support, community linkages/referrals)
 - Discuss strategies to support caregivers/parents of HIV-exposed children on adherence to their own ART regimen(s) and to their child’s medication regimens
 - Describe the signs and symptoms suggestive of HIV infection in infants
 - Be able to counsel caregivers on the importance of bringing HIV-exposed infants promptly to clinic if they are ill to prevent morbidity and mortality
 - Understand the importance of infant retention in care from birth through the end of breastfeeding and final HIV test
 - Discuss ways to improve retention in care for HIV-exposed infants
4. Provide HIV testing
 - Conduct the HIV pre-test information session for any HIV-exposed infant scenario
 - Obtain the infant blood sample by heel, toe or finger prick and collect on filter paper
 - Dry, pack and store DBS blood samples
 - Conduct the post-test counselling session for caregivers of infants and children who have an HIV-negative test result and those with an HIV-positive test result
 - Discuss systems for maintaining database/registers and records with activities related to the care and testing of HIV-exposed infants
5. Recognize the importance of immediately initiating infants diagnosed with HIV on ART and timely linkages to other care services

Appendix 1C: Pre- and Post- Test

Participant identification number: _____ Score: ____/20

- 1) True or False: New HIV infections in infants and children under the age of 15 years have fallen dramatically since 2000.
 - a) True
 - b) False

- 2) True or False: Birth testing (using nucleic acid testing, or NAT) accurately diagnoses HIV in infants who acquired the infection during childbirth.
 - a) True
 - b) False

- 3) The World Health Organization (WHO) recommends final testing of HIV-exposed infants at least how many weeks/months after breastfeeding has ended?
 - a) 3 weeks
 - b) 6 weeks
 - c) 3 months (12 weeks)
 - d) 4 months (16 weeks)

- 4) Baby H, who is 6 months old, is brought to your outpatient clinic by her mother for diarrhoea. The mother reports that she and her baby have never been tested for HIV. You find no record of HIV testing on the antenatal card or child health card. What do you do to find out if the child is HIV-exposed?
 - a) Test Baby H after complete cessation of breastfeeding
 - b) Test Baby H using rapid diagnostic testing (RDT)
 - c) Test the mother using RDT
 - d) Test the infant by virological testing using NAT technology

- 5) Because of declining levels of maternal HIV antibody in the infant, rapid diagnostic testing (RDT) cannot reliably be used to determine HIV-exposure in infants/children in what age group?
 - a) At birth
 - b) From birth to 8 weeks of age
 - c) 2–4 months of age
 - d) 4–18 months of age

- 6) When would you provide HIV testing for an infant, even if the mother tests HIV-negative?
 - a) If the infant shows signs of HIV disease
 - b) There is no need to test an infant whose mother tests HIV-negative
 - c) At 6 weeks of age
 - d) If the mother is healthy

- 7) According to World Health Organization (WHO) guidelines, the following infants are at increased risk of acquiring HIV infection:
- Infants of mothers who received less than 4 weeks of ART at time of delivery,
 - Infants of mothers who have a viral load (VL) >1000 copies/mL in the 4 weeks before delivery,
 - Infants whose mothers are identified as HIV-infected during the breastfeeding period
 - All the above
- 8) Baby A tests HIV-positive by nucleic acid testing (NAT) at his 6 week visit. How do you interpret this test result?
- Baby A is HIV-exposed
 - Baby A is likely HIV-infected; start ART right away and send a confirmatory NAT
 - Baby A is likely HIV-infected; wait for the results of confirmatory NAT before starting ART
 - Baby A is in the window period
- 9) Baby B is a 9-month old HIV-exposed infant and is still breastfeeding. Her 9-month nucleic acid test (NAT) result was negative. How do you interpret this result?
- Baby B is HIV-exposed and final HIV status is HIV-negative
 - Baby B is HIV-exposed and final HIV status is unknown
 - Baby B is not HIV-exposed
 - Baby B is HIV-infected
- 10) Baby C is 20 months old and tests HIV-positive by rapid diagnostic testing (RDT). How do you interpret this result?
- Baby C is HIV-exposed
 - Baby C is HIV-infected
 - Baby C is not HIV-exposed
 - Baby C is not HIV-infected
- 11) Baby D is 2 months old and admitted to the hospital. His mother has died and his mother's HIV status is unknown. Baby D tests HIV-negative by RDT. How do you interpret this result?
- Baby D is HIV-exposed
 - Baby D is HIV-infected
 - Baby D is not HIV-exposed
 - Baby D is not HIV-infected
- 12) The infant ARV prophylaxis regimen for the breastfed infant whose mother started antiretroviral therapy (ART) during her second trimester of pregnancy and has an undetectable viral load is:
- Twice daily AZT + once daily NVP for 6 weeks
 - Twice daily AZT for 12 weeks
 - Once daily NVP for 6 weeks
 - Once daily NVP for 12 weeks
- 13) At what age should HIV-exposed infants be started on co-trimoxazole prophylaxis?

- a) Birth-2 weeks of age
 - b) 4–6 weeks of age
 - c) 6–8 weeks of age
 - d) 10–12 weeks of age
- 14) Which of the following infants have signs or symptoms suggestive of HIV infection and should be tested for HIV?
- a) Infants who are malnourished, underweight, failing to thrive
 - b) Infants who are have delayed developmental milestones (rolling over, sitting, babbling)
 - c) Infants who are diagnosed with TB
 - d) All the above
- 15) Which of the following best summarizes the World Health Organization (WHO) recommendation on the duration of breastfeeding for HIV-exposed infants if mother is on ART with adherence support?
- a) Women with HIV should breastfeed for at least 12 months, but up to 24 months or longer
 - b) Women with HIV should wean fully by 12 months of age
 - c) Women with HIV should wean fully by 8 months of age.
 - d) Women with HIV should formula feed for the first 12 months of life.
- 16) True or False: The HIV pre-test counselling session for early infant diagnosis (delivered by the healthcare provider to the HIV-infected mother) would normally include a discussion of how HIV is transmitted between adults.
- a) True
 - b) False
- 17) If you were pricking an infant to obtain a blood sample for nucleic acid testing (NAT), where would you prick the infant who is 6 weeks old?
- a) Heel
 - b) Big toe
 - c) Finger
 - d) Vein in antecubital area of the arm
- 18) If you were pricking an infant to obtain a blood sample for nucleic acid testing (NAT), where would you prick the infant who is 9 months old?
- a) Heel
 - b) Big toe
 - c) Finger
 - d) Vein in antecubital area of the arm
- 19) The 2016 WHO guidelines strongly recommend that test results from infant virological testing should be returned to the clinic and caregiver within what time period?
- a) 2 weeks
 - b) 4 weeks
 - c) 6 weeks

d) 8 weeks

20) What is the criteria for ART initiation in an infant or child <18mo of age who tests HIV-positive by nucleic acid testing (NAT)?

- a) Low CD4 percentage (less than 15%)
- b) WHO Clinical Stage 2, 3, or 4
- c) High viral load at time of diagnosis (more than 100,000 copies)
- d) Any infant or child testing HIV-positive by NAT should be started on ART immediately regardless of WHO stage or CD4 count

References



1. ICAP. Module 1: Introduction and Course Overview. Adolescent HIV Care and Treatment: A Training Curriculum for Health Workers, Trainer Manual. https://icap.columbia.edu/tools_resources/adolescent-hiv-care-and-treatment-a-training-curriculum-for-health-workers/2012.
2. UNAIDS. Global HIV & AIDS statistics — 2019 fact sheet. [Available from: <https://www.unaids.org/en/resources/fact-sheet>]
3. WHO. Summary of the global HIV epidemic (2018). [Available from: <https://www.who.int/hiv/data/en/>]
4. WHO. Global Health Observatory Data: HIV/AIDS 2017. [Available from: <http://www.who.int/gho/hiv/en/>]
5. United Nations. Sustainable Development Goals, 17 Goals to Transform our World 2016 [Available from: <http://www.un.org/sustainabledevelopment/health/>].
6. Newell ML, Coovadia H, Cortina-Borja M, Rollins N, Gaillard P, Dabis F, et al. Mortality of infected and uninfected infants born to HIV-infected mothers in Africa: a pooled analysis. *Lancet*. 2004;364(9441):1236-43.
7. UNICEF. UNICEF Data. Global and Regional Trends. July 2019. <https://data.unicef.org/topic/hivaids/global-regional-trends/>.