Strengthening Interprofessional Education for HIV

Module 4

Preventing Vertical Transmission & Care for the Pregnant Woman with HIV

Learner Guide

OVERVIEW

Goal

The goal of this module is to prepare learners to manage the care of pregnant women, new mothers, and newborns living with HIV using an integrated approach to service delivery in order to prevent mother-to-child HIV transmission (PMTCT).

Objectives

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

1. Recognize the risks of HIV acquisition during pregnancy and breastfeeding
2. Identify appropriate ART options during pregnancy, delivery and breastfeeding
3. Identify strategies to prevent mother-to-child transmission (PMTCT) in a mother presenting late in pregnancy with a high viral load, including ART prophylaxis for exposed infants
4. Explain the importance of early infant diagnosis (EID)
5. Illustrate factors leading to low EID rates using a fishbone diagram (QI)
6. Discuss the unique needs of mothers and newborns related to HIV (IPE)

PEPFAR

HRSA Health Resources & Services Administration

UCSF Institute for Global Health Sciences

AFREhealth African Forum for Research and Education in Health

Workshop Roadmap

Duration: 120 minutes

Duration	Activity	Content
5 min.	Introduction	
10 min.	1. Discussion	Risks of HIV acquisition during pregnancy and breastfeeding
10 min.	2. Table	ART options during pregnancy, delivery and breastfeeding
20 min.	3. Discussion	Peri-partum ART management for mothers and infants
10 min.	4. Discussion	EID
20 min.	5. Diagram	Fishbone analysis for low EID rates
15 min.	6. Discussion	Psychosocial effects
5 min.	Conclusion	

Workshop Setup

Additional learner materials

- Use country-specific PMTCT guidelines if available
- Annex 4 Algorithm from the 2018 WHO Guidelines or HIV diagnosis and ARV use in HIV-exposed infants: a programmatic update
- Can be accessed on learners' laptops or print a few copies per table

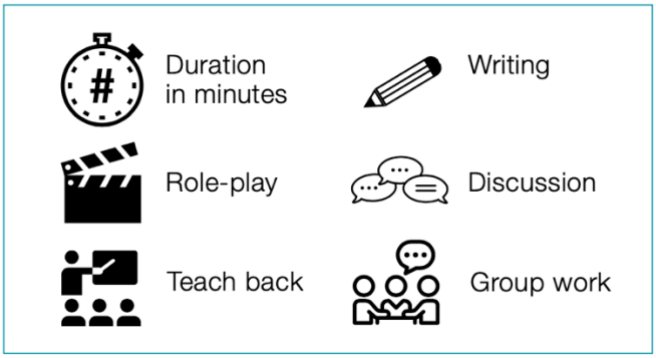
Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-retroviral therapy
ARV	Anti-retrovirals
AZT	Zidovudine (also sometimes abbreviated ZDV)
DTG	Dolutegravir
EFV	Efavirenz
EID	Early infant diagnosis
ePNP	enhanced post-natal prophylaxis
HEU	HIV exposed but uninfected infant
HIV	Human Immunodeficiency Virus
HIV-1 DNA PCR	HIV-1 deoxyribonucleic acid polymerase chain reaction
HIV-1 RNA PCR	HIV-1 ribonucleic acid polymerase chain reaction (or HIV viral load)
INSTI	Integrase Strand Transferase Inhibitor
NRTI	Nucleoside Reverse Transcriptase Inhibitor
NNRTI	Non-nucleoside Reverse Transcriptase Inhibitor
NVP	Nevirapine
PI	Protease inhibitor
PMTCT	Prevention of mother-to-child transmission
RAL	Raltegravir
QI	Quality Improvement
WHO	World Health Organization

CONTENT WITH OBJECTIVES

Introduction

Case: In this case, we will discuss Ruth, a 24-year-old pregnant woman who presented for a prenatal visit late in the 1st trimester and tested negative for HIV and syphilis. She came back during her 3rd trimester, and the repeat HIV test was positive. She was prescribed and initially started ART, but is not seen again until she is in labor. She had stopped her ART and was found to have a detectable HIV RNA.



ACTIVITY 1

Recognize the risks of HIV acquisition during pregnancy and breastfeeding.

Ruth acquired HIV during pregnancy. It is important to understand a pregnant woman's risk for acquiring HIV, as well as her need for HIV testing, and strategies for an HIV negative woman to remain negative.

1. How often should a pregnant woman be seen during the pregnancy?

2. It has been found that HIV-positive mothers are at increasing risk of acquiring HIV during pregnancy, with the greatest risk during the 3rd trimester, post-partum period, and during breastfeeding. Discuss why this might be.

3. Who are the different healthcare workers that are important for caring for pregnant women, and how can they play a role in identifying those at highest risk for acquiring HIV and/or caring for those women living with HIV?

ACTIVITY 2

Identify appropriate ART options for mothers during pregnancy, delivery and breastfeeding.

WHO guidelines recommend routine HIV testing for pregnant women both at the initial antenatal visit and at delivery. In light of the increased risk for HIV acquisition late in pregnancy, extra HIV testing can be obtained if the patient is symptomatic and considered if asymptomatic. In addition, the WHO recommends rapid initiation of life-long ART for HIV-positive pregnant women and breastfeeding women.

What are acceptable ART options during pregnancy, and what is the first-line regimen used in your country?

ART Class*	List which meds in each class are recommended during pregnancy
NRTI	
NNRTI	
INSTI	
PI	
Preferred First-Line Regimen	
Alternate First-Line Regimen	

***See Appendix A: "Clinicians' & Pharmacists' Corner" for additional evidence related to this activity.**

What are recommended ART options for mothers during delivery and breastfeeding?

Women often stop ARVs after giving birth – what might be the reasons, and how could all health professionals counsel women to encourage them to stay on ART?

ACTIVITY 3

Explain strategies to prevent mother-to-child transmission (PMTCT) in a mother presenting late in pregnancy with a high viral load, including ART prophylaxis for exposed infants.

In your small groups, you will be assigned to answer one of the following questions and report your answer and reasoning back to the group:

1. What scenarios are considered highest risk for perinatal acquisition of HIV (i.e. mother-to-child transmission, MTCT)? Use the annex 4 algorithm in Additional Learner Materials as a resource.

2. If a mother presents to care 5 weeks before going into labor, what ART would you recommend for her? What ART would you recommend the infant receives following delivery if the mother has been on ART for 5 weeks before delivery? Use the annex 4 algorithm in Additional Learner Materials as a resource.

3. If the mother has a detectable HIV RNA > 1000 copies/mL at the time of labor, as in Ruth's case, what ART do you recommend the infant receives following delivery? Use the annex 4 algorithm in Additional Learner Materials as a resource.

ACTIVITY 4

10

Explain the importance of early infant diagnosis (EID).

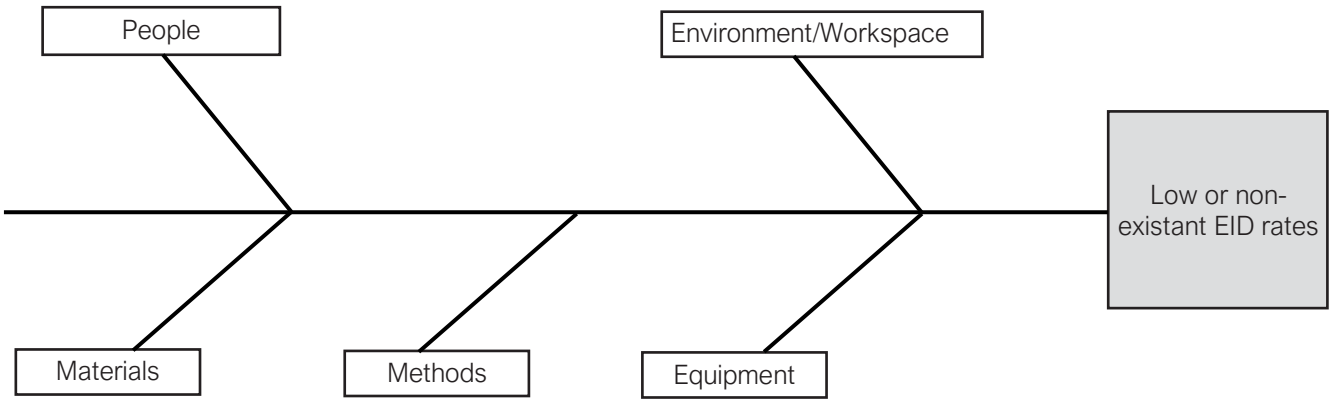
Ruth's baby will have been exposed to HIV in utero and during labor as well. What is early infant diagnosis, and why is it important? What is the protocol for assessing the infant's HIV status?

ACTIVITY 5

20

Illustrate factors leading to low EID rates using a fishbone diagram (QI).

A large proportion of infants are not diagnosed with HIV in a timely fashion. Imagine you are in charge of a clinic or hospital and you have very low EID rates. Use a fishbone diagram to illustrate why EID is not occurring at your clinic site.



ACTIVITY 6

Discuss the unique needs of mothers and newborns related to HIV (IPE).

In your small group, discuss the common challenges that women face when going home with a new infant and a new HIV diagnosis.

1. Have you cared for an HIV positive mother who has delivered a baby? What difficulties might she encounter due to her HIV status?

2. What are possible solutions to these issues or barriers? Within the scope of your own profession, how might you be able to address these barriers? What community resources might address these barriers?

Conclusion

Advance to slide 8 and review the learning objectives as a group. Ask learners to briefly summarize what they learned for each objective with a focus on any particularly challenging areas of the training.

CLINICIAN'S CORNER

For pregnant women ART selection may change based on the trimester of pregnancy in which the woman is starting ART. This domain is confusing because of early evidence from Botswana that DTG may be unsafe in pregnancy. Initial studies had highlighted a possible link between DTG and neural tube defects (birth defects of the brain and spinal cord that cause conditions such as spina bifida) in infants born to women using the drug at the time of conception. This potential safety concern was reported in May 2018 from a study in Botswana that found 4 cases of neural tube defects out of 426 women who became pregnant while taking DTG. Based on these preliminary findings, many countries advised pregnant women and women of childbearing potential to take efavirenz (EFV) instead.

However, data from two large clinical trials comparing the efficacy and safety of DTG and EFV in Africa have now expanded the evidence base and updated data from the Botswana cohort has also been reassuring. The risks of neural tube defects are significantly lower than what the initial studies suggested. The latest updates (through 2022) in the Botswana group demonstrated a rate of neural tube defects of ~1/1000 pregnancies when the pregnant woman was taking dolutegravir. This rate of neural tube defects is similar to the rate seen in women taking other ART regimens. Consequently, dolutegravir is an appropriate drug for any stage of pregnancy and its use has advantages of tolerability, a rapid decline in HIV viral load, and few drug-drug interactions. Lastly, due to physiologic changes associated with pregnancy, ART dose adjustment may be necessary during pregnancy. Note that in the PI-based regimens, cobicistat is not recommended during pregnancy and should be avoided, though ritonavir is permissible.

References/Resources

1. Bianchi F, Cohn J, Sacks E, et al. Evaluation of a routine point-of-care intervention for early infant diagnosis of HIV: an observational study in eight African countries. Lancet HIV. 2019; 6(6):e373-e381.
2. Kintu K et al. RCT of Dolutegravir vs Efavirenz-based therapy initiated in late pregnancy: DOLPHIN-2. CROI. 2019. Abstract #40.
3. Panel on treatment of HIV-infected pregnant women and prevention of perinatal transmission. Recommendations for use of antiretroviral drugs in pregnant HIV-1 infected women for maternal health and interventions to reduce perinatal HIV transmission in the United States. Available at https://aidsinfo.nih.gov/guidelines/brief-html/3/perinatal/0. Accessed July 13, 2019.
4. Patient Safety Essentials Toolkit. Institute for Healthcare Improvement. Available at http://www.ihi.org/resources/Pages/Tools/Patient-Safety-Essentials-Toolkit.aspx. Accessed June 17, 2019.
5. Prevention of Mother-to-Child Transmission (MTCT) of HIV. Avert. Accessed June 30, 2019 at https://www.avert.org/professionals/hiv-programming/prevention/prevention-mother-child.
6. Slosgrove AL et al. Surviving and Thriving – Shifting the Public Health Response to HIV-Exposed Uninfected Children: Report of the 3rd HIV-Exposed Uninfected Child Workshop. Frontiers in Pediatrics. 2018. https://doi.org/10.3389/fped.2018.00157
7. Tenthani L et al. Retention in care under universal antiretroviral therapy for HIV-infected pregnant and breastfeeding women ("Option B+") in Malawi. AIDS. 2014;28(4): 589-598.
8. Thomson KA et al. Increased risk of HIV acquisition among women throughout pregnancy and during the postpartum period: a prospective percoital-act analysis among women with HIV-infected partners. Journal of Infectious Diseases. 2018; 218(1):16-25.

9. UNAIDS. Miles to go: global AIDS update. 2018.
10. UNAIDS. Start Free Stay Free AIDS Free: 2017 progress report.
11. WHO. HIV diagnosis and ARV use in HIV-exposed infants: a programmatic update. 2018. Available at: https://www.who.int/hiv/pub/paediatric/diagnosis-arv-infants/en/. Accessed July 17, 2019.
12. WHO. Update of recommendations on first and second-line antiretroviral regimens. 2019. Available at: https://apps.who.int/iris/bitstream/handle/10665/325892/WHO-CDS-HIV-19.15-eng.pdf?ua=1. Accessed September 4, 2019.
13. WHO. Updated recommendations on first-line and second-line antiretroviral regimens and post-exposure prophylaxis and recommendations on early infant diagnosis of HIV. 2018. Available at: https://www.who.int/hiv/pub/guidelines/ARV2018update/en/. Accessed July 16, 2019.
14. WHO. Updates on HIV and infant feeding. 2016. Available at: https://www.who.int/maternal_child_adolescent/documents/hiv-infant-feeding-2016/en/. Accessed July 16, 2019.
15. Zash R et al. Comparative safety of dolutegravir-based or efavirenz-based antiretroviral treatment started during pregnancy in Botswana: an observational study. The Lancet Global Health. 2018 Jul 1;6(7):e804-10.
16. Zash, et. al. Update on neural tube defects with antiretroviral exposure in the Tsepamo Study, Botswana. AIDS 2022. Available from https://programme.aids2022.org/Abstract/Abstract/?abstractid=12759. Accessed April 5, 2023.