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Ministry of Health

National Guideline

For the Prevention of

Mother-to-Child Transmission of HIV,

Syphilis and Hepatitis B

6th Edition

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ABBREVIATIONS AND ACRONYMS

3TC	Lamivudine
ABC	Abacavir
ACM	Active Case Management
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral drug
AZT	Azidothymidine
B-IACM	Boosted-Integrated Active Case Management
BS	Birth spacing
CBO	Community-based organization
CBPCS	Community based prevention care and support
CD4	Cluster of differentiation 4 (a type of white blood cell)
CHAI	Clinton Health Access Initiative
CHB	Chronic Hepatitis B
CK	Creatnine Kinase
CMC	Case Management Coordinator
CMP	Case Management Provider
CMS	Case Management Supporter
CMS	Central Medical Supply
CMA	Case Management Assistant
CNS	Central nervous system
CoC	Continuum of Care
COC	Combined Oral Contraceptive
CoPCT	Continuum of prevention, care and treatment
CSO	Community support organization
DBS	Dried blood spot
DNA	Deoxyribonucleic acid
DTG	Dolutegravir
EFV	Efavirenz
ELISA	Enzyme Linked Immunosorbent Assay
eMTCT	Elimination of Mother-to-child Transmission
EW	Entertainment Worker
FDC	Fixed Dose combination
FP	Family Planning
FTC	Emitricitabine
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
Hb	Hemoglobin
HBC	Home-based care
HBeAg	Hepatitis “e” antigen
HBsAg	Hepatitis B surface antigen
HBV	Hepatitis B
HIV	Human Immunodeficiency Virus

HTC	HIV Testing and Counseling
HTN	Hypertension
IUD	Intrauterine Device
IEC	Information, Education and Communication
IMCI	Integrated management of childhood illness
IRIR	Intensify Reach Intensify Retain
KP	Key Population
LR	Linked Response
MCH	Maternal and Child Health
MMM	Mondul Mith Chuoy Mith (HIV/AIDS support group)
MNCH	Maternal, Newborn and Child Health
MSM	Men who have sex with Men
MoH	Ministry of Health
MPA	Minimum package of activities
MTCT	Mother-to-Child Transmission (of HIV/Syphilis)
NCHADS	National Centre for HIV/AIDS, Dermatology and STD
NIPH	National Institute of Public Health
NMCHC	National Maternal and Child Health Centre
NNRTI	Non-nucleoside reverse-transcriptase inhibitor
NVP	Nevirapine
OD	Operational District
OI	Opportunistic Infection
PAC	Pediatric AIDS Care
PASP	Provincial AIDS and STI Program
PCR	Polymerase Chain Reaction
PEP	Post-Exposure Prophylaxis
PHD	Provincial Health Department
PI	Protease Inhibitor
PLHIV	People Living with HIV
PMTCT	Prevention of Mother-to-Child Transmission (of HIV)
POP	Progestin-only Pill
PrEP	Pre-Exposure Prohylaxis
PWID	People Who Inject Drugs
PWUD	People Who Use Drugs
Rep H	Reproductive Health
RH	Referral Hospital
RMNCH	Reproductive, Maternal, Newborn and Child Health
SD	Single dose
SEI	Syphilis-Exposed Infant
SOP	Standard Operating Procedure
STI	Sexually Transmitted Infection
TB	Tuberculosis
TDF	Tenofovir
TG	Transgender
TM/SMX	Trimethoprin/sulfamethoxazole (Co-trimaxazole)

TWG	Technical Working Group
UA	Universal Access
UNAIDS	Joint United Nations Program on HIV/AIDS
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
US-CDC	United States Centers for Disease Control and Prevention
VAC	Vitamin A Capsule
VCCT	Voluntary Confidential Counseling and Testing
VHSG	Village Health Support Group
VL	Viral Load
WHO	World Health Organization
ZDV	Zidovudine

FOREWORD

While the HIV epidemic in Cambodia was initially one of the most serious in Asia, the National HIV program in Cambodia has been successful in reducing the HIV prevalence among general population aged 15+ from 1.5% in 1998 to 0.6% in 2019[1]For such achievements in reversing the HIV prevalence trend, and achieving universal access to HIV treatment, the country received a United Nations millennium development goal award in 2010. The HIV epidemic has now become concentrated in high-risk sub-population groups. However, men infected through commercial sex still might transmit HIV to their spouses and regular female partners. In addition, syphilis prevalence has recently increased in high risk groups and in pregnant women, and Hepatitis B is highly endemic. HIV, syphilis and Hepatitis B can all be transmitted from a pregnant woman to her infant.

The National Maternal and Child Health Centre (NMCHC), under the Ministry of Health (MoH) of Cambodia, in collaboration with the National Centre for HIV/AIDS, Dermatology and STD (NCHADS) and local and international organizations has responded to the needs of pregnant women and their partners. The Prevention of Mother-to-Child Transmission (PMTCT) Programme is integrated into the existing health system and not only aims to prevent Mother-to-Child Transmission (MTCT) of infection, but also to improve the overall quality of health services. The first National PMTCT Strategy, 2008 – 2015, focused on MTCT of HIV. Thanks to these efforts, MTCT of HIV has declined from an estimated 21.0% in 2010 to an estimated 8.8% in 2019.[2]However, increased efforts are needed to achieve the goal of eliminating MTCT of HIV by 2025.

The second National PMTCT Strategy 2016 – 2020 expanded the focus on prevention of HIV to include screening and treatment of syphilis in pregnancy to prevent congenital syphilis, and the Guidelines were updated accordingly. By 2019, 80% of ANC clients were screened for syphilis.[3]However, increased efforts are needed to ensure that all pregnant women reactive for syphilis and their infants receive appropriate treatment.

The second PMTCT Strategy also included some preliminary studies on measures to curb MTCT of Hepatitis B (HBV). Since then, Cambodia has ratified the WHO Regional Framework for the Triple Elimination of Mother-to-Child Transmission of HIV, Hepatitis B and Syphilis in Asia, and the time is thus right to integrate screening and treatment of pregnant women at risk of perinatal transmission of HBV into PMTCT services.

This Guideline replaces the previous National *Guideline for Prevention of Mother-to-Child Transmission of HIV and Syphilis* 5th edition 2017. This document provides guidance for health care providers on how to initiate, implement, monitor and evaluate HIV/syphilis/HBV PMTCT services at health facilities. It will be updated by the PMTCT Technical Working Group on a regular basis, as new scientific evidence is made available.

Phnom Penh……
Minister of Ministry of Health

[1] Cambodia HIV Estimates 2020.
[2]ibid
[3] NMCH PMTCT database 2019

CHAPTER 1: INTRODUCTION and BACKGROUND

1.1 Introduction

The national guidelines which follow provide the basis for achieving elimination of Mother-to-Child Transmission (eMTCT) of HIV and Syphilis by 2025 and of Hepatitis B (HBV) by 2030. These guidelines aim to equip personnel working in all health facilities providing health services to women, particularly those serving pregnant women, with essential knowledge and detailed guidance on counselling, testing, drug regimens, obstetric care, infant feeding, birth spacing, and PMTCT programme management and monitoring. It is based on experience gained in Cambodia and international recommendations.

1.2 Background

1.2.1 HIV in Cambodia

HIV was first detected in Cambodia in 1991, and the first AIDS patient was diagnosed in 1993. Transmission was primarily through female sex workers to their clients. HIV prevalence declined in the wake of an aggressive 100% condom use policy, decreased prevalence of high-risk behaviors, and ART treatment for PLHIV. In 2019, the prevalence of HIV in the general adult population aged 15-49 years was estimated to be only 0.5%, with most cases being long-standing infections in persons stabilized on antiretroviral therapy (ART). As of the end of 2019, an estimated 84% of Cambodian persons living with HIV (PLHIV) were on ART. Given these successes, the Royal Government of Cambodia has embarked upon an ambitious goal of reducing new HIV infections to less than 250 annually by 2025.

The HIV epidemic in Cambodia is primarily driven through sexual transmission, from sex workers to their clients. Male clients in turn often subsequently infect their wives. Almost all pediatric HIV infections are acquired from HIV-infected mothers, during pregnancy, labor, delivery or the breastfeeding period. The most current estimate of HIV MTCT in Cambodia is 8.8% in 2019[4]. Cambodia has committed to the goal of reducing this below 5% by 2025.

1.2.2 Syphilis in Cambodia

Currently about 0.11% of pregnant women have syphilis.[5] However rates of treatment are low, resulting in a modeled estimate of over 50 cases of congenital syphilis per 100,000 births in 2019[6]. Cambodia has committed to achieving elimination of MTCT of syphilis (defined as fewer than 50 cases/100,000 live births) by 2025. Like HIV, syphilis transmission in Cambodia is primarily driven through sexual transmission from sex workers to their clients, and male clients often infect their wives. Untreated primary and secondary syphilis infections in pregnancy often result in severe adverse pregnancy outcomes, including fetal deaths in a substantial proportion of cases. The burden of morbidity and mortality due to congenital syphilis is high. There is also

[4]Cambodia HIV Estimates 2020a
[5] NMCH PMTCT database 2019. Excludes women reactive on rapid TPHA test but without detectable RPR titer.
[6]Spectrum Estimate, UNAIDs/Cambodia

an increased risk of mother-to-child transmission of HIV among pregnant women co-infected with syphilis and HIV.

Congenital syphilis is preventable, however, and eMTCT of syphilis can be achieved through implementation of effective early screening and treatment strategies for syphilis in pregnant women. The fetus can be easily cured with treatment, and the risk of adverse outcomes to the fetus is minimal if the mother receives adequate treatment during early pregnancy – ideally before the second trimester.

1.2.3 Hepatitis B (HBV) in Cambodia

The risk of mother-to-child transmission of Hepatitis B is high among infants born to pregnant women who are HBV infected with high HBV viral load (≥200,000IU/mL); in some cases, MTCT is as much as 90% in the absence of interventions. A WHO-sponsored study in 2017 found that HBsAg seroprevalence was 4.39% among mothers of young children in Cambodia, 0.56% among children aged 5 years old and 10% among children born from HBV-infected women[7].

Cambodia has committed to the WHO Western Pacific Region Regional Framework for the Triple Elimination of Mother-to-Child Transmission of human HIV, Hepatitis B and Syphilis in Asia and the Pacific 2018–2030 which calls for elimination of MTCT of HBV by 2030, defined as a ≤0.1% prevalence of hepatitis B surface antigen (HBsAg) among children aged under 5 years. Until now the only intervention to reduce MTCT of HBV in Cambodia has been vaccination at birth followed by three booster doses, which is only partially effective if maternal viral loads are high. The addition of routine testing of pregnant women, and antiviral treatment of mothers with high viral loads, along with continued/accelerated efforts to ensure timely birth dose of the vaccine, will be needed to achieve the hepatitis B elimination target by 2030.WHO recently recommended that pregnant women testing positive for HBV infection with an HBV DNA ≥ 5.3 log10 IU/mL receive tenofovir prophylaxis from the 28th week of pregnancy until at least birth, and, based on research conducted in Cambodia, endorsed the use of HB "envelope" antigen (HBeAg) testing to determine eligibility for tenofovir prophylaxis in settings in which antenatal HBV DNA testing is not available[8].

1.2.4 Maternal Health Care in Cambodia

Antenatal care (ANC), safe delivery services, and post-natal care are provided in the public health systems through a large network community-based Health Centers, Health Posts and hospitals. The Safe Motherhood Guidelines lay out the services and standards for ANC, PNC and delivery care. All pregnant women are recommended to have at least 4 ANC visits starting from the first trimester of pregnancy. Coverage for any ANC was 95% in 2014 (population based survey) and is estimated at 98%. in 2020. Coverage for 4 or more ANC was 75.6% in 2014, with 79% of women having had their first ANC before 4 months gestation.[9][10]

[7]Ork V, Woodring J, ShafiqulHossain M, Wasley A, Nagashima S, Yamamoto C, et al. Hepatitis B surface antigen seroprevalence among pre- and post-vaccine cohorts in Cambodia, 2017. Vaccine. 2019 14;37(35):5059–66.
[8] Prevention of Mother-to-Child Transmission of Hepatitis B Virus:Guidelines on Antiviral Prophylaxis In Pregnancy. WHO 2020.
[9] Cambodia Demographic and Health Survey 2014.
[10] MoH Health Information System 2020, NMCHC PMTCT Database 2020 and Ministry of Planning Population Projections 2013 -2023. Numerator (Reported ANC1 cases) adjusted for likely double counting due to women attending more than one facility. Denominator (estimated births) adjusted for stillbirth/abortions.

CHAPTER 2: Overview of the PMTCT Program

Prevention and care activities for PMTCT are integrated into existing health services, in order to facilitate access to health services for women and their families and to reduce stigmatization and discrimination. The package of PMTCT activities is based on the following four prongs:

1. Primary prevention of HIV and syphilis among women and their partners
2. Prevention of unintended pregnancy among women infected with HIV, syphilis or HBV
3. PMTCT through a package of services which include provision of:
    - HIV, Syphilis and HBV testing
    - Antiretroviral drugs for HIV and HBV
    - Antibiotic treatment of syphilis
    - Safe delivery practices
    - Timely birth dose of Hepatitis B vaccine followed by 3 booster doses
    - Counselling and support for safe infant feeding practices
    - Early infant diagnosis for HIV-exposed infants
4. Access to HIV/AIDS care and support for HIV-infected women, their infants and family.

- The full package of PMTCT activities includes:
- For all women and their partners:
    - Primary prevention education and information, especially for high-risk individuals.
    - Access to family planning (FP) services.
- For all pregnant women and their infants:
        - Standard antenatal, delivery and postnatal care, following the Safe Motherhood Protocol.
        - Voluntary Confidential Counselling and Testing for HIV, syphilis and HBV.
        - Screening for anemia by hemoglobin testing.
        - In malaria-endemic areas, screening for malaria, access to information about the risks of malaria in pregnancy, and counselling in use of insecticide-treated bed nets.
        - Symptomatic screening for TB.
        - Screening for proteinuria.
        - Facility-based delivery by a skilled birth attendant.
        - Nutrition and infant feeding counselling.
        - Post-delivery birth spacing counselling and referral to birth spacing services.
        - Routine infant immunizations including HBV vaccine within 24 hours of birth.
- For HIV-infected pregnant women and their infants:
        - ART (option B+) to all HIV-infected women.
        - Delivery at a Hospital with co-located ART services.
        - Infant HIV-DNA PCR testing at birth.
        - ARV prophylaxis to the HIV-exposed infant.

- Routine infant immunizations including timely birth dose of HBV vaccine.
- Counselling and support for safe infant feeding practices and maternal health.
- HIV-exposed infant follow-up:
    - Cotrimoxazole Prophylaxis Therapy (CPT) for the infant from 6 weeks of age
    - Early Infant Diagnosis by HIV-DNA PCR testing at birth and at 6 weeks of age. Additional PCR test 6 weeks after totally stopping breastfeeding, and HIV antibody testing at age 18 months and above.
- Immediate lifelong ART for all HIV-infected infants, irrespective of CD4 count.
- Referral to treatment, care and support services.

- For syphilis-infected pregnant women, their partners and their infants:
    - Treatment for the mother (and fetus; maternal treatment will also treat the unborn baby) with benzathine penicillin to eradicate the infection, preferably before the second trimester of pregnancy to minimize fetal loss.
    - Presumptive treatment of the mother's partner(s) to avoid reinfection.
    - Monitoring (RPR titers) to ensure treatment of the mother and her partner was successful.
    - Counselling on preventive measures to avoid new infection including condom use.
    - Screening for HIV and HBV if not already done.
    - Antibiotic treatment for the infant if the mother was not adequately treated during pregnancy.
    - Routine infant immunizations, including birth dose of the HBV vaccine.
    - Counselling and support for safe infant feeding practices and maternal health.
- For pregnant women positive for the HBV surface antigen and their infants:
    - Further testing to assess risk of perinatal transmission (HBV DNA viral load if available, otherwise HBeAg and ALT).
    - If HBV DNA is > 5.3 Log $_{10}$ IU/mL or(in absence of HBV DNA) the HBeAg is positive or the HBeAg is negative but ALT level is elevated (> 40 U/L), antiviral prophylactic treatment (Tenofovir 300 mg a day) starting from the 24th-28th week of pregnancy[11] and continuing until at least 6 weeks postpartum. (Women with signs of impaired liver function will need to continue lifelong.)
    - If the HBV Viral load is <5.3 Log $_{10}$ IU/mL or (in the absence of HBV DNA test) the HBeAg is negative and the ALT is normal, continued monitoring during and after pregnancy.
    - HBsAg Testing of partners and household members and vaccination if negative for HBsAg, otherwise monitor/treat infected partners/household members as per National HBV guidelines if positive.
    - Counsel on measures to avoid infecting others, including condom use, avoidance of sharing of razors, toothbrushes, or other personal care items; avoid donating blood, and following standard universal precautions with open cuts or bleeding.

[11] WHO recommends starting at the 28th week. However, as estimation of gestation may not be exact and it may also be difficult to ensure follow up at exactly 28 weeks, ARV may be started anytime from the 24th week onward. Every effort should be made to start not later than 28 weeks, but if for some reason this was not possible, it may be started as soon as possible after that time.

- Delivery at maternity service of a Referral Hospital
- Ensure immediate administration of Hepatitis B vaccine to the infant after delivery, preferentially *within 2 hours of delivery and at least within 24 hours* followed by boosters at 6, 10 and 14 weeks along with all other routine infant immunizations.
- Counselling and support for safe infant feeding practices and maternal health.
- Follow-up check of mother at 6 weeks post-partum including ALT and calculation of APRI score; continued ARV if clinical evidence of compensated or decompensated cirrhosis is present or there APRI score is more than 2 or there are persistently abnormal ALT levels or there is a family history of liver cancer, otherwise ARV may be stopped.
- Follow-up check of the HBV exposed infant at age 7-12 months[12] with test for HBsAg.

[12] The infant follow up needs to be at least 1 month after completing the full series of 3 HBV booster vaccines.

CHAPTER 3: COUNSELLING, TESTING AND EDUCATION

All pregnant women are encouraged to have at least 4 ANC visits starting from the first trimester, and to deliver in a health facility. This section focuses on content specific to PMTCT; please see the Safe Motherhood Guidelines for Health Centers and Hospitals for the full range of counselling to be provided to pregnant and postpartum women.

3.1 HIV, Syphilis and HBV Test Counselling of Pregnant Women

All pregnant women have the right to know their HIV, HBV and syphilis status in order to be able to access PMTCT services on time if they are infected. **Counselling and testing should be available at all settings**, including health centers, health posts, hospital gynecological ward, maternity wards, outpatient medical and surgical wards, TB services, Family Health Clinics (FHC), community and mobile testing sites.

- **All women receiving antenatal care (ANC) should be offered voluntary confidential counselling and testing for HIV, Syphilis and HBV** as part of the standard antenatal care package initiated by health care provider. They may, however, decline these tests if they do not consent.
- **HIV, HBV and Syphilis testing and counselling of pregnant women should be voluntary** and adhere to the WHO 5 C's: consent, confidentiality, counselling, correct test results and connections to care, treatment and prevention services. Quality assurance of both tests and counselling are essential in all approaches to HIV, Syphilis and HBV testing and counselling as is treating all clients with respect and compassion.
- **Counsellors should encourage the partners of HIV/syphilis positive pregnant women and pregnant women found have other STIs, or a history of high-risk behaviors,** to participate in voluntary counselling and confidential testing.

To enable identification of women whose status is unknown, HIV, HBV and syphilis testing information should be included in the mother's maternal health record.

When to test:

- All pregnant women should be screened for HIV, HBV and syphilis at the first antenatal care (ANC1) visit, ideally within the first times. If for any reason this was not done at the first ANC visit, it should be done at the next possible opportunity.

- All pregnant women, whose HIV and syphilis status at delivery is still unknown, should systematically be offered voluntary counselling and testing during or after labor.

- Re-testing for HIV and Syphilis
    - Pregnant women are recommended to repeat test at the third trimester for HIV/Syphilis, if they are assessed as high risk of HIV/Syphilis transmission (from a key population, have HIV+ partner or partner known to have high risk behavior)
    - Retesting during pregnancy is not recommended otherwise

- The syphilis status of all women with a spontaneous abortion occurring at 20 weeks or more gestation, or a stillbirth, should be checked and if the woman was not already tested for

syphilis during that same pregnancy, testing should be offered. Second trimester miscarriage and stillbirth are frequent complications of syphilis in pregnancy.

Women who already know they are HIV positive and are followed at an ART clinic should receive:

- At least one viral load (VL) test during pregnancy. If the woman has just started ART, check the VL after 3 months. If she is already on ART, check the VL early in the pregnancy, then follow the usual VL algorithm as described in the NCHADs HIV Management Guidelines.
- Counselling on the importance of ANC and referral to ANC services for on-going antenatal care throughout pregnancy, ideally at the same RH as the ART site or a Health Centre located near it. They should be supported to come to the RH maternity ward for safe delivery and proper ARV prophylaxis for their infants to prevent MTCT, with pre-registration at the RH maternity ward to keep track between ANC and delivery.
- Testing for syphilis and HBV during ANC, as well as all other basic ANC services as detailed in the Safe Motherhood Guidelines.
- ART adherence counselling should be regularly reinforced during pregnancy to ensure VL suppression at least four weeks before delivery.

Women who are HIV-negative but have an HIV+ partner (serodiscordant couple) and are followed at an ART clinic for Pre-Exposure Prophylaxis (PrEP) should likewise be referred to an ANC site. They should be tested for HIV, syphilis and HBV and receive all other basic ANC services. Adherence to the PrEP regiment should be stressed and the woman assured that the drugs are safe in pregnancy.

Women who are already known to have chronic Hepatitis B (CHB) who become pregnant should be informed about the risk of transmission to the baby and the importance of prompt infant vaccination at birth to reduce it.

- Women with CHB who are already on antiviral treatment should be counselled on the importance of adherence.
- Women with CHB who are not on antivirals should be closely monitored during the pregnancy and started on it by the 28th week of pregnancy if HBV DNA is > 5.3 Log 10 IU/mL or, in absence of HBV DNA, if HBeAg is positive or if HBeAg negative but ALT is> 40 U/L.
- All women should be referred to ANC service for on-going antenatal care throughout pregnancy, ideally at the same RH where they receive HBV services or a HC near it. They should be encouraged to come to the RH maternity ward for safe delivery to ensure that the infant receives HBV vaccine immediately after birth.
- All women should be offered HIV and syphilis testing during ANC, as well as all other basic ANC services as detailed in the Safe Motherhood Guidelines.

3.1.1 Pre-test Counselling

- Pre-test Counselling should be included in the routine health information and education talks given to women and their partners during the **mothers' class** at ANC services.
- If there are not enough pregnant women to hold a mothers' class, **individual or couple pre-test counselling** should be conducted.

- Information about PMTCT of HIV, HBV and Syphilis should be presented and HIV, HBV and syphilis tests should be offered routinely at ANC services.
- Women can specifically decline the tests if they wish. However, screening about her or her partner's risk behavior(s) should be conducted if they agree.
- If a pregnant woman or her partner(s) asks to receive individualized pre-test counselling, this should be facilitated.

Pre-test counselling provides women and their partners with basic HIV/AIDS, HBV and Syphilis information, informs them about the testing process, helps them to understand personal risk behaviors and provides key messages on how to remain negative.

The following topics should be covered during pre-test counselling:

- Basic HIV/AIDS, HBV and Syphilis information, including transmission and prevention.
- Advantages of routine HIV, HBV and Syphilis testing and the benefits of knowing the HIV, HBV and syphilis status during pregnancy.
- Risks of contracting of HIV, HBV and Syphilis and risk reduction options including condom use and avoidance of intravenous drug use (IDU).
- Confidentiality of HIV, HBV and Syphilis testing.
- Implications of the HIV test result including the process of confirmatory test and the "window period" if the test is found negative.
- Implications of the HBsAg test including the need for further testing if positive to determine if there is a high risk of perinatal transmission.
- The risk of MTCT and available options for prevention, including antiviral (HIV/HBV) and antibiotic (syphilis) treatments and immediate HBV vaccination at birth.
- Availability of treatments for the woman herself: lifelong ART for HIV, antibiotics to cure syphilis, monitoring and, if needed, antivirals for HBV.
- Risk Assessment: Risk Assessment for individuals is very important in concentrated HIV epidemic. This should be performed with confidentiality and privacy, and in a respectful and empathetic manner. Below are the main risk behaviors to be assessed:

Table 1 : Risk Assessment

Pregnant women	Partners
Has Multiple sexual partners	Has Multiple sexual partners
Belongs to KP group(s): EW, PWID, PWUD	Belongs or have partners of KP group(s): MSM, TG, EW, PWID, PWUD
Has a past history/current STIs or history of hepatitis	Has a past history/current STIs or HIV infection or hepatitis
Belongs to migrant population	Belongs to migrant population

- Source: HTC national training curriculum 2014

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Box 1: Special considerations in managing pregnant adolescent women (Including HIV-infected adolescent female)

When working with an adolescent, whether married or unmarried, it is particularly important to remember the following:

- Build good communication with the woman and her companion by supporting her in understanding options and making decisions best suited to her needs.
- At any examination or before any procedure, seek permission and inform about what you are doing.
- Do not be judgmental but be aware of and overcome your own discomfort with adolescent sexuality.
- Encourage the girl to ask questions and tell her that all topics can be discussed
- Repeat and guarantee confidentiality
- Understand adolescent difficulties in communicating about topics related to sexuality (fear of parental discovery, adult disapproval, social stigma, etc.).

3.1.2 Post-test Counselling

Post-test counselling should be provided to all clients individually or as a couple if requested, regardless of HIV, HBV and Syphilis test results. Post-test counselling should be provided in a room that ensures confidentiality and privacy. The results should be delivered by a trained provider in a respectful and empathetic manner.

Box 2: The goals of post-test counselling are to:

- Provide the client with his/her HIV, HBV and Syphilis test results.
- Ensure the client understands the meaning of the results.
- Ensure the clients understand the process of confirmatory testing if an HIV reactive case is identified through finger prick testing.
- Ensure the client understands the need for further tests and possible treatment if the HBsAg is positive.
- Ensure the client understands the need for prompt treatment if syphilis reactive.
- Ensure the client understands the importance of continued antenatal care throughout pregnancy.
- Encourage risk- behaviour reduction and partner testing.
- Provide appropriate PMTCT information.
- Offer support, information and referral to other services including maternity, ART, FHC, RH or National Hospital for HBV care, PAC and STI services where appropriate.

Adapted from: Prevention of Mother-to-Child Transmission of HIV Generic Training Package WHO/CDC. 2008.

Negative HIV, Syphilis and HBV Test Result:

During post-test counseling for women who are non-reactive to all three tests, the counselor should:

- Ensure the client understands the "window period" for HIV testing and advise repeat testing after 4 months if there has been recent or on-going high-risk exposure.
- Review the client's plans for risk reduction, including how to prevent possible future HIV, HBV and syphilis infection.
- Explore the woman's perceptions of her husband or partner's behaviors and his HIV, HBV and STI status. If the woman thinks that her husband or partner may have HIV, HBV or an STI or has high risk behaviors, husband or partner's testing should be advised with an explanation of the benefits they will get from the service.
- If the woman has a partner who is known to be HIV+ (serodiscordant couple), she should be referred to an ART site for counselling and possible Pre-Exposure Prophylaxis (PrEP).
- Explain the dual advantages of condom use, especially for women who think their husband or partner may have high risk behavior.
- Explain the importance of immediate HBV vaccine for all babies within 24 hours of birth.
- Inform the client that further counselling is available if needed.

Reactive HIV Test Result following finger prick testing:

During post-test counselling for HIV-reactive women, the counsellor should:

- Discuss the meaning of the test result and understand initial feelings and emotions.
- Emphasize the need to perform confirmatory test the same day at the VCCT collocated with the ART clinic and the benefits of early ART enrolment if the confirmatory test is positive.
- Clarify the referring process (including transportation) and contact persons at related services in coordination with the Active Case Management Assistant/Case Management Coordinator/Case Management Supporters.
- Refer the client along with referral form including the PMTCT code number and specifying the expected delivery date.
- Discuss the need for continued routine ANC check-up, other tests, and prevention measures.
- Further counselling could be offered and scheduled if necessary.
- The ANC provider should follow up and make sure the woman received a confirmatory test and record the result in the ANC register. The Active Case Management Assistant (CMA)/Case Management Coordinator (CMC) or OD/PH M|PMTCT Coordinators should be informed at once of any case that is lost to follow up i.e. did not receive a confirmatory test.

Positive confirmatory HIV Test Result at VCCT:

The VCCT counsellor plays an important role to refer and enroll HIV-infected pregnant women at ART clinics. VCCT counsellors trained on specific counselling regarding PMTCT should:

- Explain the result of confirmatory tests and provide emotional support to the woman.

- Answer any questions or concerns the client may have regarding the test result.
- Counsel the client on possible ways to deal with immediate problems and/or concerns.
- Seek her consent to perform a rapid test for recent infect (RTRI) with the remaining blood to measure if she acquired the infection within the last 12 month or longer. This information could help further track her sexual partner (s) and biological children for testing (recent infections have a higher probability of ongoing transmission[13])
- Review PMTCT interventions and provide information about ART and PMTCT services.
- Explain the importance of safe delivery and help the client to identify the maternity service at the RH for her safe delivery
- Provide information about safe abortion services and facilitate referral if desired.
- Discuss the benefits and risks of disclosure and encourage all partners and children to received testing and counselling. HIV self-testing may be offered if the partner is unable or unwilling to come to a health facility.
- Provide counselling on living and coping with HIV (psychosocial support).
- Provide information on how to prevent transmission of HIV to partners through the provision of condoms and guidance on their use (to prevent both HIV transmission and re-infection).
- Clearly explain infant feeding options and emphasize the required services for HIV-exposed infants such as ARV prophylaxis, Early Infant Diagnosis (PCR test at birth, 6 months after stopped breastfeeding and final diagnostic test), Cotrimoxazole prophylaxis and early ARV treatment if the HIV-Exposed Infant (HEI) is found infected.
- Accompany the women to register at the ART clinic and to urgently start ART (Same Day ART).
- Pre-register her at the maternity ward with expected delivery date for safe delivery and further tracking.
- Inform CMC/CMA/community Action Approach (ACC) team for further follow-up through B-IACM cascade.

All patient documents, including HIV test results, must be kept in a confidential and secure place at all times and should only be accessed by health care providers directly involved in providing care to the patient. Do not label records as HIV-infected. Be sure to treat the woman with respect and empathy at all times and provide complete privacy during discussions.

- ANC providers should also follow up to make sure women who were reactive at ANC receive a confirmatory test and, if positive, enroll in ART and pre-register at the maternity ward in the same hospital. In each subsequent ANC contact, ANC providers should stress ART adherence and advise the woman to deliver at the RH maternity ward co-located with their ART service so that appropriate care (ARV, birth DNA PCR) can be provided to their baby.

Positive Syphilis Test Result from finger prick test:

- Explain that untreated syphilis is very dangerous to both her and the baby, but the disease can be easily cured with treatment. Provide emotional support.

[13]Tracking with Recency Assay to Control the HIV Epidemic (TRACE) Training Curriculum, 2019

- Stress the need for immediate treatment to protect the baby.
- Explain the need for her husband/partner to be treated as well to avoid reinfection of herself and the baby. Provide an opportunity for the woman to discuss any concerns regarding partner notification.
- Refer the woman and her partner to the closest site where treatment is available, which might be a RH maternity ward or FHC. Treatment can be given at once at a RH without RPR test.
- After treatment the woman and her partner should be referred to the Family Health Clinic for RPR test to assess the effectiveness of treatment and provide further treatment if indicated. In some cases, the FHC is located within the VCCT compound.
- The midwife at ANC and other services should inform the HIV and MCH district coordinators or CMA of all syphilis reactive cases to ensure they receive a full course of treatment and follow-up.
- Providers should note in the mother's health record book the syphilis test result and any treatment received for mother, partner and baby. Follow up is necessary to make sure treatment is received.
- The Active Case Management Assistant/Case Management Coordinator or OD/PHD PMTCT Coordinators should be informed at once of any case that is lost to follow up i.e. did not receive a full course of treatment.
- Pre-register for delivery at a RH maternity ward, preferably co-located with ART services.

Positive HBsAg Test Result:

- Explain the natural history of HBV infection and the additional tests that are needed to determine if she needs treatment for herself and/or to protect the baby. Provide emotional support.
- Assure her that if she is at high risk for transmitting infection to the baby, medication can be given to reduce this. If so, it will be very important to take the medication regularly as prescribed. Reassure that the medication is safe in pregnancy. An evaluation will be done postpartum to decide if she needs to continue the medication or if she can stop.
- Explain that regardless of whether she needs medication now, she will need regular monitoring for her own health, even after delivery.
- Explain that she needs to be careful with potential liver toxicity of some medications (e.g. paracetamol) and avoid traditional medicine and alcohol consumption
- Stress the importance of an immediate birth dose of HBV vaccine for the baby followed by 3 boosters. Stress that the birth dose needs to be given preferentially within 2 hours and at least 24 hours of delivery, and advise to deliver in a RH.
- Refer to the nearest hospital for further testing and, if indicated, ARV.
- Advise that Partners and household members should accompany her to the hospital and be tested for HBsAg.
- Counsel on measures to avoid infecting others, including condom use, avoidance of sharing of razors, toothbrushes, or other personal care items; avoid donating blood, and following standard universal precautions with open cuts or bleeding.

- Providers should note in mother's health record book the HBV test result and any treatment received for mother, partner and baby. Follow up as necessary to make sure the woman

attended the hospital and received additional tests (HBeAg and ALT). The Active Case Management Assistant/Case Management Coordinator or OD/PHD PMTCT Coordinators should be informed at once of any case that is lost to follow up i.e. did not go the hospital for additional testing.

3.2 HIV, HBV and Syphilis Testing Procedure

3.2.1 HIV, HBV and Syphilis Testing during Pregnancy

HIV, HBV and Syphilis testing is available at all ANC services as two finger prick rapid tests: a combined HIV/syphilis test and a separate HBsAg test. HIV, HBV and Syphilis testing may only be conducted by appropriately trained providers. All staff responsible for conducting HIV and syphilis tests must have completed the HIV syphilis testing training course and follow the Ministry of Health's Policy, Strategy and Guidelines for HIV, Syphilis Testing and Counselling, using MoH approved test kits and algorithms.

The following recommendations for HIV, HBV and Syphilis testing of pregnant women by ANC service staff should be followed:

1. All pregnant women accessing ANC service at a health facility should be offered HIV, HBV and Syphilis counselling and testing at the first ANC visit. If for some reason testing was not done at the first ANC visit it should be done at the earliest opportunity.
2. In the case of women already known to be HIV positive before ANC, she should still receive HBV and syphilis counselling and testing. The dual HIV/syphilis test will be used but only the syphilis test result is reported when the woman was already known to be HIV positive.
3. Women who test reactive to HIV, syphilis or HBV should be counselled and promptly referred for additional testing/treatment as described in Section 3.1.2 above.

In addition to HIV, HBV and syphilis testing, hemoglobin measurement and proteinuria testing should be conducted at ANC and treatment provided per the Safe Motherhood Protocol if anemia or proteinuria is found.

Box 3 : Dual HIV/Syphilis finger prick testing procedure:

Obtain informed verbal consent from the pregnant woman after providing pre-test counselling.

1. Prepare reagents and testing material; get one test out of kit. Take it from the left side.
2. Make sure it is at room temperature.
3. Check expire date to make sure it is still valid. Check the desiccant. If the color is green, use a different kit.
4. Write down testing code number on the strip, and take cover of test off
5. Choose a finger and massage palm hand to stream blood flow, clean the area to be pricked with alcohol. Allow to dry fully. The test may not work if the alcohol has not dried.
6. Prick the finger with a sterile lancet and use the capillary pipette to collect a drop of blood.
7. Apply the blood to the round specimen well touching the pad (marked ‘S’).
8. Add 3 drops of the assay diluent into the round specimen well.
9. Wait 15 minutes (not longer than 20 minutes) to read the result.
10. The control line should appear for all results. If it does not appear, the results are invalid and should be repeated.
11. If there is only the control line visible and no line where it is marker "Syp" and "HIV", the result is negative for both HIV and syphilis. If there is a line where it says "Syp" it is positive for syphilis. If there is a line where it says HIV, the test is reactive for HIV.
12. Record the result on the lab result form, antenatal or maternity register and mother card.

Box 4 : HBsAg finger prick testing procedure:

Obtain informed verbal consent from the pregnant woman after providing pre-test counselling.

1. Prepare reagents and testing material; get one test out of kit. Take it from the right side.
2. Make sure it is at room temperature.
3. Check expire date to make sure it is still valid
4. Write down testing code number on the strip, and take cover of test off, laying the strip down on a flat surface.
5. Choose a finger and massage palm hand to stream blood flow, clean the area to be pricked with alcohol. Allow to dry fully.
6. Prick the finger with a sterile lancet or small gauge needle.
7. Collect blood into a capillary tube and use the tube to apply the blood to the middle of the sample pad. Apply all the blood in the capillary tube.
8. Immediately after all the blood is applied, put 1 drop of chase buffer on the pad.
9. Wait 15 minutes (not longer than 30 minutes) to read the result.
10. The control line should appear for all results. If it does not appear, the results are invalid and should be repeated.
11. A positive result shows 2 lines, one the control line and one for the patient. Interpret any visible bar (even very faint) in the window as valid positive result. If only the control bar is visible, the result is negative.
12. Record the result on the lab result form, antenatal or maternity register and on the mother card.

Quality control procedures established by NCHADS for HIV and syphilis testing should be followed at all times. These include quality control for specimen collection, storage and testing. The laboratory supervisor at the appropriate provincial or national laboratory is responsible for monitoring the quality of testing and results on a quarterly basis.[14]

Box 5: Reagent and Materials Supply and Storage

1 Materials to support the tests should be sufficiently available on site and stored in good conditions.
2 The reagents should be stored at temperatures from 2ºCto30ºC. Test materials should not be placed in wet areas, or exposed to sunlight.
3 Do not use tests immediately after removing from the refrigerator because test should be kept at the room' temperature (20 minutes) before use
4 Check expiration date each time before conducting test and do not use the test with expired date
5 Routinely check the temperature in the refrigerator, cold box and in the room
6 IQC should be performed for every open new test kit prior to test the first patient.

[14]Manual for Quality Assurance In The HIV Testing Service Program. NCHADS 2018.

The HIV/syphilis, HbsAg test and Hemocue hemoglobin tests are all performed on whole blood, usually by fingerprick. To reduce discomfort for the patient, try to get enough blood for all 3 tests from a single fingerprick using the lancet that comes with the HIV/syphilis test kit.

If ANC is provided at a hospital with a lab able to do hemoglobin analysis, venipuncture may be performed instead of fingerprick in order to get sufficient blood for the lab test. In that case, draw off blood from the syringe for the HIV/syphilis and HBsAg rapid tests before putting the remainder into the laboratory tube.

3.2.2 HIV and Syphilis Testing during Labor

- National, Provincial and Referral Hospitals, and Health Centers, should provide HIV and syphilis counselling and testing during labor to women with unknown status.

During labor, pregnant women's mother card should be checked for results of HIV and syphilis test performed during ANC. Women with unknown HIV and syphilis status should be offered counselling and testing. If a woman had already been tested at ANC services but did not bring her card or test result, ask her or her family to bring the testing result if their houses are near. If they live far and cannot bring the result, then re-testing for HIV and syphilis is needed.

  - Even with improvements in access to antenatal HIV testing for pregnant women at ANC service, there will still be women who present at health facilities during labor who do not know their HIV and syphilis status, or who have been tested only during a previous pregnancy.
  - If HIV-infected pregnant women with unknown HIV status at delivery are not identified, the opportunity for providing the mother and her infant with ARV drugs and other PMTCT services to reduce the risk of vertical transmission of HIV is missed.
  - If syphilis-infected pregnant women with unknown syphilis status at delivery are not identified, the opportunity to treat the infant for congenital syphilis is missed.
  - In order to minimize these missed opportunities, HIV and syphilis testing information should be recorded on the mother's health record to allow identification of women whose status is unknown. Women and her family should be always reminded to bring the health record for labor and delivery.
- At health facilities, if a pregnant woman with unknown HIV status presents in labor and her cervix is less than 4 cm dilated, she should be counselled by midwife and, after obtaining verbal consent, offered HIV/syphilis rapid testing. If labor is too advanced or the baby is already born, the woman should receive counselling and testing as soon as possible after delivery.

Procedure for women who test HIV reactive at the time of labor/delivery will depend on place of delivery as follows:

1. Delivery occurs at a hospital co-located with VCCT and ART services:
   - Confirmatory testing should be arranged as soon as possible at the VCCT.
   - While awaiting the confirmatory test result, the woman should be **urgently** given ART (Option B+), (**make sure the ARV available at Maternity Ward)**, starting as soon as possible during labor and continuing for lifelong unless confirmed negative (see more in chapter 4).

- If HIV diagnosis has been confirmed:
    - **Infants are considered as at high risk of HIV infection since the mother did not receive ART during pregnancy. They should be immediately started on ARV prophylaxis treatment for high risk situation with daily NVP and AZT** following new WHO recommendation (see Chapter 4).
    - HIV-exposed infants (HEIs) should receive an HIV DNA PCR test immediately after birth before leaving the hospital. This may be done by the midwife if cards are available and she has been trained, otherwise, contact the Pediatric Aids Care (PAC) counsellor to provide PCR test before discharge.
    - The mother should be counselled to go back with her child to PAC at six weeks of age for immunization and an additional PCR test result.
    - The woman should be counselled on Infant Feeding (see chapter 6).

- If the confirmatory test was negative, reassure the woman that she is not infected and provide routine PNC.
- If it is for some reason not possible to get confirmatory test, follow the instructions given below.

2. Delivery at HCs, or at RH which is not co-located with VCCT/ART services:

- If the initial rapid test is reactive, confirmatory testing should be arranged as soon as possible at the VCCT (by sending blood sample to VCCT)
- While awaiting the confirmatory test result, the **case management provider (CMP) at the HC should contact with CMC/CMA or directly to district AIDS/MCH coordinator** to organize and connect with key actors to **urgently provide ART (from maternity RH) at the HC for the mother and ARV for the child for urgent PMTCT.** OD coordinators should organize this procedure for every HCs that they are responsible for.
- The woman should be counselled and referred to the ART clinic and PAC with the baby for confirmatory test and (if confirmed positive) PCR test for the baby and mother-infant pair enrolment as soon as possible after birth.
- The woman should be counselled on Infant Feeding (see chapter 6)
- The midwife should follow up to make sure the woman attended ART/PAC and immediately inform the OD/PHD coordinator or CMA of any lost to follow up cases.

In the case of women who test syphilis reactive at the time of labor/delivery:

1. The infant should be admitted to RH pediatric ward for presumptive treatment of congenital syphilis (see section 4.2).

2. The mother and her partner should both be treated for syphilis as described in section 4.2.

3.2.3 HIV Testing for HIV-Exposed Infants

HIV-Exposed Infants (HEI) should receive a HIV-DNA PCR test at birth if delivery was in a hospital, as described above, and enroll in Pediatric Aids Care (PAC) where the following additional tests will be provided with the mother's verbal consent:

- HIV DNA PCR test at age 6 weeks.
- If breastfed and PCR was negative at 6 weeks, repeat HIV DNA PCR 6 weeks after cessation breastfeeding.
- HIV antibody test at age 18 months (if PCRs were negative), with confirmatory PCR if antibody test is positive.
- If the HIV DNA PCR or (after 18 months) antibody test is positive, start ART as soon as possible (within 2 weeks)

Please refer to the flow chart for diagnosis in a Known HIV-exposed infant < 18 months in the NCHADS*HIV Clinical Management Guidelines for infants, Children and Adolescents.*

ANC, ART, and delivery providers should counsel HIV-positive mothers at every contact about the importance of obtaining these tests for their infants. Please also see Chapter 6 for description of other services for HIV-exposed infants (HEI).

3.2.4 HBV Testing for HBV-exposed Infants

Infants of all mothers who were HBsAg positive should be tested for HBsAg at the age of about 6 months to 1 year (and at least 1 month after completion of the full series of HBV vaccines).

3.3 Information, Education and Communication (IEC)

- Information, education and communication (IEC) messages and campaigns help improve knowledge and acceptability of PMTCT services and can help to reduce stigma and discrimination related to HIV infection. Communication strategies which provide information on HIV/AIDS should also include an emphasis on PMTCT.
- Efforts should also be made to mainstream PMTCT IEC in existing MCH activities at all levels, both to maximize the impact and to contribute towards reduction of stigma and discrimination. Appropriate IEC materials such as posters, leaflets and videos, aimed at positively changing knowledge, attitudes and practices of clients and service providers, are an integral component of service provision and should be used whenever possible.
- Support in the community and strong links between the community and health services are very important for enabling individuals infected with HIV and their families to benefit from available interventions. Community-based support organizations are vital components of the Cascade of Care (CoC). All women found to be infected with HIV should be encouraged to join whichever community-based support is available in their home area.

3.3.1 Reproductive Health Information for HIV-infected women

HIV-infected women and their partners have the right to make free and informed decisions about whether and when to have children.

- **HIV-infected women who are considering becoming pregnant** need to know means to minimize the risks associated with having a child, including appropriate ARV drug regimens, safe delivery services, infant ARV prophylaxis and safe infant feeding practices. Advise PLHIV women that the preferred timing of a pregnancy, both for her own health and for the least risk of MTCT, is after she has been on ART 6-12 months on ART, has an undetectable viral load (VL), and has a normal CD4 count. (NCHADs HIV Clinical Management Guidelines 2020).
    - There have been reports from an observational study in Botswana of an increased incidence of neural tube defects in babies born to women who were on the antiretroviral drug dolutegravir (DTG) at the time of conception. There is no indication of increased risk when DTG is started after the woman is already pregnant. Similar associations have not been found in other countries to date, and further research is underway. The magnitude of risk from the most recent analysis of the Botswana data was not large: neural tube defects occurred in only 0.3% of birth to women taking DTG at the time of conception. DTG has considerable benefits compared to other ART drugs, including high effectiveness with a more rapid decline in viral load (especially important for PMTCT), less susceptibility to resistance, and fewer side effects. DTG therefore remains a recommended first line drug for ART in pregnant women. HIV+ women planning to *newly* conceive should be advised of the possible risks and benefits of DTG and supported in making an informed decision. There is no reason to stop or withhold DTG in women who are already pregnant.[15][16][17]
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- **HIV-infected women who do not want to become pregnant** should be counselled about prevention of unintended pregnancy. See Chapter 7 for information about available methods. There are counsellors trained in FP at the ART clinic, and some modern contraceptive methods (condoms, oral contraceptive pills and injectable) are available at ART clinics and FHCs as well as at HCs.
- **PLHIV women who have had unprotected sex within the past 4 days or less and do not want to be pregnant** should be offered emergency contraception. Women on ART regimens that include an NNRTI or PI, and women taking rifampicin for TB, will need to take a double dose of Emergency Contraception, i.e. 3 mg instead of 1.5 mg of levonorgesterol.[18]
- **PLHIV women with unintended pregnancies** should be counseled about their options including continuing the pregnancy to term or safe abortion. Refer to safe abortion services if the woman chooses to terminate the pregnancy, otherwise counsel on PMTCT.

Pregnant PLHIV women should clearly be counselled about the risk of transmission to the baby and the ways to prevent MTCT, especially the importance of continuing ART throughout the pregnancy, delivering at the hospital maternity ward co-located with the ART site, ARV prophylaxis for the baby, safe infant feeding, and infant follow-up at PAC services.

[15] Statement on DTG. WHO May 18 2018.

[16] WHO News Release 22 July 2019.

[17] NCHADs HIV Management Guidelines 2020.

[18] NCHADs HIV Management Guidelines 2020.

CHAPTER 4: Treatment for HIV, Syphilis or HBV positive Pregnant and Breastfeeding Women for PMTCT

4.1 HIV Positive Pregnant and Breast-feeding Women

ART, by controlling the level of viral load in the mother, can reduce the risk of HIV transmission from mother-to-child from a background risk of 35% in the absence of interventions to less than 5% in breastfeeding populations.

ART should be initiated in all pregnant and breastfeeding women living with HIV regardless of WHO clinical stage and at any CD4 cell count and continued lifelong.
(Policy brief on Consolidated Guidelines on the use of Antiretroviral Drug for treating and preventing HIV infection, WHO 2015)

- Even if HIV infection is identified late in pregnancy or during postpartum, lifelong ART should be initiated **urgently** in all pregnant and breastfeeding women.
- Indeed, the most effective way to prevent mother-to-child HIV transmission is to quickly reduce the maternal viral load.
- The critical determinants of transmission risk in the ART era are the level of maternal viral load and the duration of maternal ART during pregnancy.
- Whenever possible, all efforts should be made to identify HIV-infected pregnant women early enough during pregnancy to rapidly control the viral load and reduce the risk of transmission.
- Identifying HIV infection and starting ART late during pregnancy or during breastfeeding represents an increased risk of HIV transmission to the infant because of poorly controlled viral load and requires specific and stronger prophylaxis measures.

The following procedures regarding the administration of ART should be followed for all HIV-infected pregnant and breastfeeding women:

- If a pregnant woman tests HIV positive, either during pregnancy, labor and or breast feeding, she should be urgently referred to ART services for rapid enrolment and ART initiation.
- Lifelong ART initiation is urgently recommended for all HIV-infected pregnant and breast feeding women regardless of WHO stage and at any CD4 cell count.
- HIV-infected pregnant women should immediately be counselled and supported to plan delivery at a Referral Hospital maternity ward where ARV drug prophylaxis is available for the infant for PMTCT.

In addition to receiving ART, HIV positive pregnant women should also be offered these additional interventions as part of the recommended package of pregnancy care:

- Screening for Syphilis and Hepatitis B.
- Nutritional support.
- Screening for anemia.

- Assessment for danger signs (edema, hemorrhage, high blood pressure, etc.).
- Infant feeding counselling.
- Family planning guidance.
- Careful monitoring for the development of pregnancy-induced hypertension, danger sign and pre-eclampsia - especially for women who were on ART prior to conception.
- ARV prophylaxis for the baby.
- Follow up care for the infant at Pediatric Aids Care.

Throughout the pregnancy of an HIV-positive woman, key principles and practices of safe motherhood should be followed including:

- Reinforcement of recommended regular antenatal clinic visits.
- Planning for a facility-based delivery by trained skilled birth attendants. This should be at an RH maternity service close to ART clinic where ARV prophylaxis for the infant is available.
- Avoiding using instruments for assisted vaginal delivery, such as vacuum or forceps, unless really essential for the delivery.
- Washing newborns from any blood quickly after birth, and using non-invasive techniques with the newborn as much as possible.
- As for all delivery, universal precautions should be followed by health care workers including for HIV-positive deliveries.
- Special efforts should be made to ensure that delivery care for HIV-positive women is provided in a non-stigmatizing and supportive manner.

4.1.1 Antiretroviral Drugs for Pregnant and Post-Partum PLHIV and HIV-Exposed Infants

ARV treatment recommendations for Cambodia, as shown below, are in line with advice released by WHO in 2019[19].

Table 2: ART Treatment for pregnant/Breastfeeding Women

Preferred first-line regimens	Alternative first-line regimens
Tenofovir (TDF) 300 mg + Lamivudine (3TC) 300mg + Dolutegravir (DTG) 50mg as fixed-dose combination once daily	TDF 300 mg +3TC 300 mg +Efavirenz (EFV) 400 Abacavir (ABC) 600 mg + 3 TC 300 mg + DTG50 or EFV 400

Source: National HIV Clinical MANAGEMENT Guidelines for Adults and Adolescents, NCHADS 2020.

For detailed information on ART regimens, please refer to current NCHADS HIV Management Guidelines.

TDF (300mg) + 3TC (300mg) + DTG (50 mg) fixed dosage combination (FDC) tablet once daily is the preferred first lineART regimen provided there are no contraindications. It is appropriate for adults, and adolescents including pregnant and breastfeeding women. It can also be used in

[19]Update on recommendations for first- and second- line antiretroviral regimens. WHO 2019

HIV-TB coinfection but in that case the DTG dose must be doubled until 2 weeks after stopping rifampicin.

TDF and 3TC will also treat HBV co-infection.

Contra-indications to TDF + 3TC + DTG

- TDF is contra-indicated in case of renal failure and should not be started if the eGFRis< 50 ml/min.
    - Substitute ABC 600 mg daily.

As noted in Section 3.3.1, There have been some reports suggesting an increased risk of neural tube defects in women who took DTG at the time of conception. This has not been verified and additional studies are underway. DTG can still be used in women planning to become pregnant provided they have been informed of the risks and benefits and made an informed decision. There is no increased risk in using DTG in women who are already pregnant. [2021]

Infant Prophylaxis

Infant prophylaxis should begin as soon as possible at birth or when HIV exposure is recognized postpartum. The first dose should be given within 6 hours of delivery (even sooner, if possible) as it is critical for immediate protection. Prophylaxis with ARV is administered to infant according to their risk situation as described below:

Table 3**: ARV prophylaxis guidelines or HIV-exposed infant**

1. **High Risk HIV Exposed Infant:** defined as the infant of a mother newly diagnosed HIV positive at the delivery or during the post postpartum period or a mother who was on ART for less than 4 weeks by the date of delivery or a mother whose viral load was >1,000 copies/ml within 4 weeks of delivery (if VL available).

    1.1. All highrisk HIV-exposed infants who are breastfed should receive dual AZT and NVP during the first 6 weeks of life and continue NVP alone for another 6 weeks. *(total 12 weeks)*

    1.2. All high risk HIV exposed infants who are not breastfed should receive dual AZT and NVP prophylaxis during the first 6 weeks of life.

2. **Low Risk HIV Exposed Infant:** defined as the infant of a mother who was on ART for 4 or more weeks before delivery and whose VL in the 4 weeks prior to delivery (if known) was <1,000 copies/ml

    2.1. All low risk HV exposed infants, regardless of being breastfed or not, should receive NVP mono therapy as prophylaxis during the first 6 weeks of life.

Based on: National HIV Clinical MANAGEMENT Guidelines for Adults and Adolescents, NCHADS 2020.

[20] WHO Statement on DTG May 2018.

[21] National HIV Clinical MANAGEMENT Guidelines for Adults and Adolescents, NCHADS 2020.

Note: Infant feeding recommendations and other HIV-exposed infant follow up are described in Chapter 6

Table4: ARV Doses for HIV-exposed infants:

Infant age	**Dosing of NVP**	**Dosing of AZT**
From Birth to 6 weeks (Breastfeeding or non-breast feeding infants)		
– Birthweight : (2000–2499g)	10 mg once daily (1ml of syrup once daily)	10 mg twice daily (1ml of syrup twice daily)
–Birthweight (≥2500g)	15 mg once daily (1.5ml of syrup once daily)	15 mg twice daily (1.5ml of syrup twice daily)
From 6 weeks to 12 weeks (For breast feeding infants at high risk only)	20 mg once daily (2ml of syrup once daily OR ½ of a 50mg tablet once daily)	

Source: National HIV Clinical Management Guidelines for Infants, Children and Adolescents, NCHADS 2020.

- For Infants weighing <2000g and above 35 weeks gestational age the suggested doses are: NVP 2mg/kg per dose once daily and Zidovudine (ZDV) 4mg/kg per dose twice daily.
- Premature infants below 35 weeks gestation should be dosed using expert guidance.

Table5: Summary of Maternal ART and Infant ARV Prophylaxis

<table>
<tr><th>Mother</th><th>Risk Status of HIV Exposed Infant</th><th>Infant feeding status</th><th>Infant prophylaxis</th></tr>
<tr><td rowspan="3">Urgently initiate
TDF +3TC + DTG
(Fixed-Dose Combination)
regardless of WHO stage and CD4 count
and continue lifelong</td><td rowspan="2">High Risk:
-Criteria:
1- Mother on ART for less than 4 weeks by the date of delivery,
or
2- Mother diagnosed HIV positive at delivery or during post postpartum period.
or
3- Mother had VL>1,000/ml within 4 weeks of delivery</td><td>Formula feeding</td><td>Dual NVP* and AZT for 6 weeks</td></tr>
<tr><td>Breast feeding</td><td>Dual NVP* and AZT for 6 weeks and continue only NVP for another 6 weeks</td></tr>
<tr><td>Low Risk:
-Criteria: Not fall in the above high risk criteria.</td><td>Breast feeding or formula feeding</td><td>NVP* for 6 weeks</td></tr>
</table>

* In case of NVP reaction, discuss with ART clinic.

Source: National HIV Clinical Management Guidelines for Infants, Children and Adolescents, NCHADS 2020.

4.2. Prevention of mother-to-child transmission of syphilis

Untreated maternal syphilis can cause adverse outcomes of pregnancy such as stillbirth or miscarriage (21%), neonatal death (9%), infected infant (15%), prematurity or low birth weight (6%)[22].Women testing positive for syphilis should be immediately treated and also informed of importance treatment for themselves, their partners and infants.

When provided early in pregnancy even a single dose of benzathine penicillin can prevent infection in the fetus even in women with syphilis of long duration.

4.2.1 Treatment of syphilis in the mother:

After having excluded allergy to penicillin, the treatment is as described in table 6 below. Benzathine penicillin should be given as soon as possible after testing positive on rapid test unless there is a clear history of prior treatment (rapid test will remain positive even after a syphilis infection has been treated).

Treatment can be given at the maternity service of the nearest Referral Hospital; it is not necessary to wait for an RPR test before treating. After treatment, refer to a Family Health Clinic (FHC) for RPR to assess response to treatment. *Only in a case where a woman is positive on rapid test but gives a history of having been fully treated in the past, should treatment be delayed awaiting RPR.*

Figure 1Syphilis Testing and Treatment Strategy

[22] GOMEZ, et al.WHO Bulletin,2013

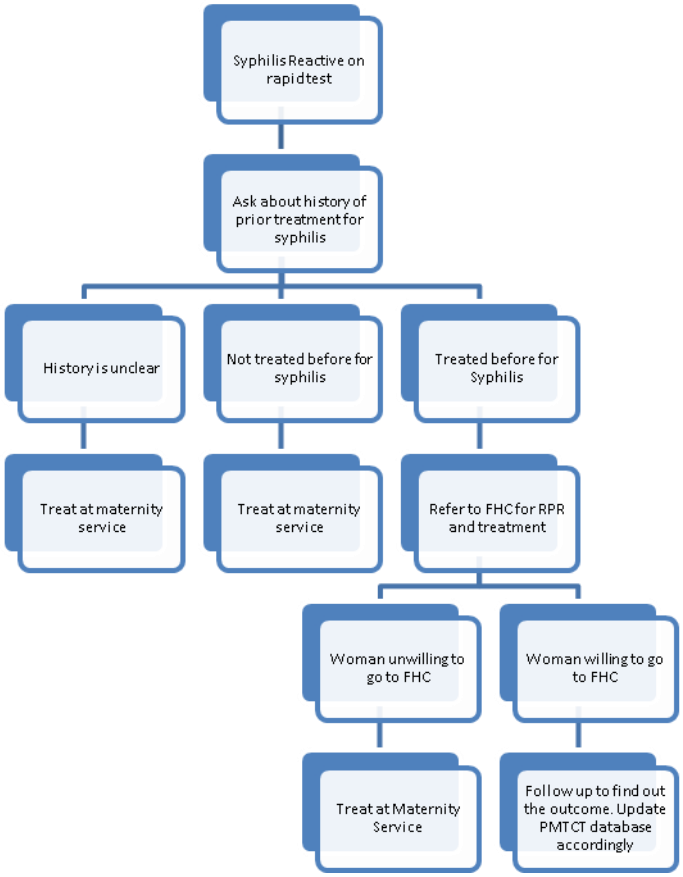


Table6 : Syphilis treatment for pregnant women

Syphilis	Recommended Treatment	Alternative	Alternative for penicillin- allergic
EARLY SYPHILIS* primary, secondary and early latent syphilis (< 2 years'duration)	Benzathine benzylpenicillin, 2.4 million IU once by intramuscular injection, at a single session. Because of the volume involved, divide into two injections at separate sites	Procaine benzylpenicillin, 1.2 million IU by intramuscular injection, daily for 10 consecutive days	Erythromycin, 500 mg orally, 4 times daily for 14 days**
LATE SYPHILIS* infection of more than two years' duration (Late latent & tertiary) or unknown duration	Benzathine benzylpenicillin, 2.4 million IU by intramuscular injection, once weekly for 3 consecutive weeks. Because of the volume involved, divide each dose into two injections at separate sites	Procaine benzylpenicillin, 1.2 million IU by intramuscular injection, once daily for 20 consecutive days	Erythromycin, 500 mg orally, 4 times daily for 30days** or Ceftriaxone 1 g IM once daily for 10–14 days***

Neurosyphilis and Ocular syphilis	Aqueous crystalline penicillin G, 18–24 million IU by intravenous injection, administered daily in doses of 3–4 million units IV every 4 hours or continuous infusion for 10-14 days	Procaine penicillin G 2.4 million units IM one time daily plus probenecid 500 mg, orally four times daily, both for 10-14 day	

Source: National Guidelines on Sexually Transmitted Infections and Reproductive Tract Infections Case management, NCHADS June 2019

* In cases where it is not possible to determine the duration of infection, treat as "Late Syphilis".
** Erythromycin does not cross the placental barrier, so in cases where the mother was treated with erythromycin the baby must also be fully treated for congenital syphilis at birth.
*** Although ceftriaxone crosses the placental barrier, here is insufficient evidence to determine if it effectively treats the fetus, so if ceftriaxone is used to treat the mother, the baby must still be fully treated for congenital syphilis at birth.

4.2.2. Syphilis treatment for partners:

Partners of women treated for syphilis in pregnancy should be presumptively treated in order to prevent re-infection of the pregnant women. It is not necessary to test partners first. Partners may be treated at the same facility that treated the pregnant woman, and should be treated with the same protocol as the woman.

4.2.3 Administration of Benzathine or Procaine Penicillin:

1. Take history: Ask the woman if she has ever had an allergic reaction (rash, itching, hives, swelling of the face or hands and feet) after taking penicillin, ampicillin, amoxicillin, augmentin (amoxicillin/clavulonate) or dicloxacillin. If this is a second or third dose, ask if she developed a rash after the previous doses.

If she has, do not use first line treatment. Use the alternative listed in Table 6.

- ✓ An allergic reaction is not the same thing as a side effect. If the woman reports things like nausea/vomiting, diarrhea, vaginal discharge, headache etc. it is not a sign of allergy and she can be treated with penicillin.
- ✓ Penicillin is the only drug that will treat the fetus as well as the mother, so it should be used whenever possible. The alternative treatments will cure the mother but not the baby who may still be stillborn or born with congenital syphilis. Therefore, *penicillin should not be withheld unless there is strong reason to think the woman is allergic to it.*

2. Have the following immediately available before giving the penicillin:

- ✓ Adrenaline (epinephrine) **1:1000**
- ✓ 1 ml syringe and 23G needle
- ✓ IV catheter and Normal Saline IV solution

It is not necessary to draw up the adrenaline into the syringe as it will rarely be necessary to use, but have the vial, needle and syringe nearby ready for use. It is also not necessary to start an IV, but the supplies should be on hand in case of emergency.

3. Dilute the BPG with sterile water (about 4 ml). Shake well.

- ✓ Do not dilute until you are ready to inject it because the reconstituted solution must be used within 24 hours.

4. Draw up into 2 syringes using a 19 or 20 gauge needle (1/2 into each).

- ✓ The volume is too large to inject into one site so 2 injections are needed for each dose.
- ✓ The mixture is thick so a large needle gauge is necessary.

5. Inject each syringe into the gluteal muscle (upper outer quadrant) on either side injections, each about 1.4 mill unit, into right and left buttock.

- ✓ The injections must go deep into the muscle. It cannot be given S.C. as it would irritate the tissue.
- ✓ In case of unusually thin women, if the gluteal muscle is very small, you may instead use the thigh if that seems larger.
- ✓ Always aspirate the needle before injecting to make sure you have not entered a blood vessel by mistake, this drug is only for IM use not IV.
- ✓ Do not massage after injecting
- ✓ Since the needle is large and the injection volume is large, there may be pain at the injection site afterwards. Apply ice if so.

6. Observe the woman for at least one hour before allowing her to go home.

7. Record the treatment given and the date on the Mother Card.

8. Give discharge instructions:

- ✓ Advise the woman that she might experience some fever, chill, malaise and headache within the next 24 hours, similar to the feeling of influenza. It usually lasts just a few hours and is not sign of allergy; it is the result of the syphilis bacteria releasing toxins as they die. If this occurs the woman should take paracetamol and not be worried.
- ✓ There may also be some pain and swelling at the injection site; if so, apply ice.
- ✓ Inform the woman when to return (if needing 3 doses).
- ✓ If the partner did not accompany the woman, explain the importance of having him come for treatment.
- ✓ If the woman is 6 or more months pregnant, inform her that she should deliver in the hospital. If the baby is born 30 days or less from the date the mother was treated, it will be necessary to immediately admit the baby to the hospital for treatment of presumed congenital syphilis (see section 4.2.5). This is not necessary if treatment is given earlier in the pregnancy.

4.2.4 Allergic Reactions to Penicillin

The most serious type of allergic reaction is anaphylaxis. Fortunately it is very rare. Anaphylaxis will occur soon after the injection, often within a few minutes. This is why woman are observed for an hour after injection.

Box 6: Detection and Management of Anaphylactic Reaction to Penicillin

Signs of anaphylaxis:

- Rapid onset wheeze – difficulty breathing
- Edema – swelling of the face, lips or tongue
- Cyanosis – blue lips and fingers
- Rapid pulse
- Low blood pressure (the patient may complain of dizziness or lose consciousness)
- Rash – itchy, of rapid onset may be associated with the above

Management of anaphylaxis: ***intervene very quickly*** as this can progress very fast to respiratory or cardiac arrest.

- ✓ *Immediately* give 0.5 ml of adrenaline deep IM (any muscle). Repeat dose every 5 minutes until improvement occurs.
- ✓ Administer oxygen
- ✓ Start an IV of normal saline.
- ✓ Monitor airway and vital signs.
- ✓ If hypotensive, infuse NS rapidly.
- ✓ If the patient does not quickly improve, use of intravenous corticosteroids and H-1 antagonist antihistamines (loratadine, cetirizine) may be necessary
- ✓ Admit to the ICU for further management and observation.

Although anaphylactic reactions are very serious, they are also very rare, and they usually respond well if treatment is given very quickly. The patient may appear fine within a short time after receiving epinephrine. Nonetheless, she should be admitted to the hospital for at least 24 hours of close monitoring.

Delayed allergic reaction: sometimes a patient will develop a milder delayed allergic reaction, days later. Usually this consists of a rash and sometimes hives, which may itch. If this occurs:

- Do not give further doses of penicillin. If the woman has not yet completed her course of syphilis treatment, use either erythromycin or ceftriaxone to complete treatment (see Table 6).
- Instruct the woman that she is allergic to penicillin and must not take it or related drugs like ampicillin/amoxicillin again, even orally, and should let any doctors treating her in the future problem know this.
- Antihistamines like diphenhydramine or chlorpheniramine may help ease the symptoms. If symptoms are very troublesome a short course of oral steroids may sometimes be considered.

4.2.5 Syphilis treatment for the infant:

The treatment protocol for syphilis-exposed infants depends on what treatment the mother received during pregnancy and when, as follows:

- If the mother received a full course of treatment with penicillin (benzathine or procaine) and this was completed 30 days or more before delivery, close monitoring of the infants is recommended but no immediate treatment unless clinical signs of syphilis are present.

- In all other cases, treat give the infant with aqueous benzylpenicillin 100 000–150 000 IU/kg/day IV administered divided into 2 doses administered every 12 hours, for a total of 10-15 days. If IV treatment is not possible, procaine benzylpenicillin 50 000 IU/kg by intramuscular injection may be given as a single daily dose for 10-15 days. *Newborn infants are not at risk of allergy to penicillin because of their immature immune system.*

  - This applies to cases where the mother was not treated during pregnancy, or was only incompletely treated, or the mother was completely treated but treatment was 30 days or less before delivery, or the mother was treated with a drug other than penicillin.
  - Unless there is a clear record showing that the mother received full course of treatment with benzathine or procaine benzylpenicillin more than 30 days before delivery, assume treatment was not given or incomplete and treat the baby accordingly.
  - Inpatient hospitalization on a pediatric service is necessary if the doses are given intravenously. Intramuscular doses may be given as an outpatient provided it is sure the mother can bring the baby every day for at least 10 days.
  - The first dose should be given as soon as possible after birth, preferably in the delivery room.
  - In case the mother's syphilis status was only discovered at the time of delivery, the first dose treatment for both mother and baby should be given at once based on rapid test. It is not necessary to wait for an RPR to treat the mother and baby unless the mother has a clear history of prior treatment for syphilis.

Table 7: Treatments for Syphilis-Exposed Infants

Indication	First choice	Alternatives
All infants born to mothers who had: • untreated syphilis • inadequately/incompletely treated syphilis • syphilis treated with a drug other than penicillin • syphilis treated less than 30 days before delivery	Aqueous Benzyl Penicillin 100,000-150,000 Unit/kg/day IV divided into 2 doses 12 hours apart for 10-15 days	Procaine Penicillin 50,000 units/kg/day single dose intramuscularly for 10-15 days

Source:National Guidelines on Sexually Transmitted Infections and Reproductive Tract Infections Case management, NCHADS June 2019

4.3Prevention of Mother-to-Child Transmission of Hepatitis B

The following tests are needed to determine whether the woman is at high risk of perinatal transmission and requires antiviral therapy to prevent HBV transmission to the infant

- DNA Viral load or

- HBeAg and ALT

Women who test positive for the HBV surface antigen (HBsAg) on rapid test should be referred to a hospital, or a Referral Hospital that is able to do either a DNA Viral Load or a rapid test for the HBV “e” antigen (HBeAg).

All women should be physically examined to see if they have liver or spleen enlargement or ascites. Additional tests that may be ordered include a complete blood count (Hemogram) with platelets, AST and creatinine. The APRI score is calculated from the AST: platelet ratio. Levels over 2 indicate probable cirrhosis and a need for immediate and lifelong treatment to protect the woman’s own health and that of the baby.

Treatment of the mother:

Women with an HBV DNA Viral Load ≥ 200,000 IU/ml are at high risk of transmission and should start antiviral treatment at 24 – 28 weeks gestation, continue until after delivery and then be reassessed.

When VL testing is unavailable, the rapid test for the HB"e" antigen may done instead as a proxy for VL. All HBeAg positive pregnant women are assumed to have a high viral load and should start antiviral treatment at 24 – 28 weeks gestation, continue until after delivery and then be reassessed.

HBeAg negative pregnant women with an ALT > 40 are also assumed to have a high viral load, and should start antiviral treatment at 24 – 28 weeks gestation, continue until after delivery then be reassessed.

HBeAg negative pregnant women with a normal ALT do not need medication for PMTCT but their ALT should be monitored every 3months throughout pregnancy and antivirals started if ALT rises above 40 and continued until after delivery, then be reassessed.

Antiviral treatment for pregnant women with chronic HBV, when indicated according to the criteria above, is Tenofovir (TDF) 300 mg once a day.

Women who are already on ART for HIV do not need additional treatment during pregnancy provided their ART regimen includes Tenofovir. If not, consult the ART clinic.

After delivery: Women taking Tenofovir to protect against MTCT of HBV should have their liver function assessed after delivery before stopping medication. Those with clinical signs of cirrhosisor APRI score >2 or persistently elevated ALT (2 measures at least 3 months apart) need lifelong antiviral treatment for their own health, to reduce the risk of liver failure or liver cancer later on. Those with normal ALT, no clinical sign of cirrhosis and APRI score <2 can discontinue medication after delivery but must have regular follow up visits (every 6 months or as advised by the doctor) as they may need to start treatment later on. For more information, refer to the Cambodia MOH Guideline of Clinical Management for Viral Hepatitis B, 2019.

Treatment of the infant:

All infants need a dose of the **Hepatitis B vaccine** at birth, ideally within 2 hours of delivery. In the case of infants whose mothers are positive for HBsAg, it is especially essential the dose **is given *immediately after delivery.*** HBsAg positive women should be instructed to delivery at a hospital maternity ward, and RH maternity services should keep Hepatitis B vaccine in stock and ensure it is given promptly.

Table 8: Treatment of Pregnant Women who are HBsAg Positive

Other test findings	Management During Pregnancy	Management After Delivery
DNA VL ≥200,000 IU/ml* or HBeAg Positive or HBeAg Negative + ALT >40	Tenofovir (TDF) 300 mg a day: start at 24 – 28th week of pregnancy	Assess need for continued TDF. Follow up every 6 months or advised by doctor. Test infant for HBsAg at age 7-12 months.
DNA VL < 200,000 IU/ml* OR HBeAg Negative + ALT≤40	Monitor ALT levels every 3 months. If it rises >40 treat as above	Periodic assessment (ALT level, APRI score, clinical exam) every 6 months or advised by doctor Test infant for HBsAg at age 7-12 mos.

* IF DNA testing is available there is no need to test for HBeAg.

Sources:(1) Guideline of Clinical Management for Viral Hepatitis B. MoH 2019 and (2) Segeral et. al. HBeAg rapid test and alanine aminotransferase level-based algorithm to identify pregnant women at risk of HBV mother-to-child transmission: the ANRS 12345 TA PROHM study.

Partners and other household contacts:

Partners and other close household contacts should be screened for HBsAg and vaccinated if negative. Monitor/treat infected partners/household members as per National HBV guidelines if positive.

4.4. Side Effects of Antiretroviral Drugs used in Pregnancy and by Breast Feeding Women

Women who are receiving antiretroviral drugs for HIV or HBV are informed about possible side effects and asked to report back to the ART clinic or doctor in case of problems. MCH staff should be aware of ARV drug side effects and should send any pregnant and breastfeeding woman they see with possible side effects promptly to the ART clinic or, in case of HBV, doctor managing their hepatitis.

The most common side effect associated with ARVs is nausea and vomiting. This is especially common when ART is newly started and often resolves after a few weeks. More serious adverse effects are listed in Table 9. Any pregnant woman on ART showing signs of these toxicities should be immediately referred to the ART site for appropriate management and possible change of medication.

ARV Toxicity in the Infant:

- There is potential risk for NVP toxicity if mother received NVP-based ART regimen during breastfeeding (there is some passage of NVP to infant through breast milk.) This is unlikely to occur as NVP is being withdrawn from use in ART in Cambodia.
- AZT can sometimes cause anemia, but if so, it is reversible.

4.5. Specific considerations on the safety of ART prior to conception

- There are reports of a possible increased risk of neural tube defects in women taking DTG at the time of conception. This is from one country only, and so far, not substantiated by other data; further studies are underway. HIV+ women planning to become pregnant should be advised of the risks and benefits according to the most recent information available at the time and supported in making an informed decision. Please see section 3.3.1 for a fuller discussion of this and references.

- Evidence shows that women who are on ART since before pregnancy are at increased risk of:
  - Preterm delivery;
  - Low birth weight;
  - Stillbirth;
  - Miscarriage; and
  - Pregnancy-induced hypertension and pre-eclampsia.

- However, the severity of prematurity and low birth weight associated with preconception ART is not mentioned in the literature.

- Because pregnancy-induced hypertension and pre-eclampsia have been identified as predictors of pregnancy adverse outcomes, **active screening and management of pregnancy-induced hypertension should be prioritized for all high-risk women, including those receiving ART and particularly those receiving ART prior to conception.** This includes checking blood pressure at every ANC visit, checking urine for protein, and advising the woman of danger signs. If any proteinuria or hypertension is noted it should be managed according to the Safe Motherhood Protocol.

Table 9: Toxicities associated with ARVs (refer to ART clinic if suspected)[23]

ARV drug	Toxicity	Risk factors	Monitoring and Management
AZT	Anemia, neutropenia	Baseline anemia or neutropenia	Avoid AZT if Hb<8g/dl Check Hb on D0, M1, M3, and every 6 months after.
	Myopathy		Symptomatic; if muscle pain or weakness check serum CK
	Lipoatrophy	Long term ART	Symptomatic decrease in fat in face, limbs, buttocks
AZT, TDF	Lactic acidosis, or severe hepatomegaly and steatosis	Prolonged > 6 months NRTI High BMI	Symptomatic: if nausea/vomiting, abdominal pain, dyspnea, fatigue check: bicarbonate, AST/ALT, CK, lactate
TDF	Renal tubular dysfunction.	Older age, low BMI, advanced HIV, pre-existing decrease in kidney function, comorbidities (diabetes, hypertension, HCV coinfection) use of nephrotoxic and renal excreted drugs or PI	Avoid TDF if eGFR< 50ml/min, or long-term diabetes, uncontrolled hypertension (HTN). Assess and treat other causes of kidney injury (dehydration, HTN, etc.) *Stop nephrotoxic drugs – especially NSAIDS* Check Cr + dipstick on D0, M1, M3, every 12 months after
	Decreased bone mineral density	Age > 40, low BMI, physical inactivity, smoking, IDU. Diabetes Chronic Liver Disease Corticosteroid use.	Symptomatic. Fractures, loss of height Assess by Fracture risk assessment tool. (FRAX)
ABC	Hypersensitivity reaction	Presence of HLA-B*5701 gene	Never retry ABC again.
3TC	Very rare NNRTI class effects		
EFV	CNS – light headedness, abnormal dreams, mental confusion, depression, convulsion	History of depression or seizures	Typically resolves over weeks, but may persist.
	Male gynecomastia		
EFV and NVP	Hepatotoxicity	Underlying hepatitis disease, hepatotoxic drug NVP only: CD4 > 250	Check AST/ALT on D0, M1, M3 Symptomatic monitoring

[23] *Source: National HIV Clinical Management Guidelines for Adults and Adolescents, NCHADS 2020.*

	Rash and hypersensitivity syndrome (Stevens Johnson)		
Protease inhibitors (RTV, RTV/r, DRV, LPV/r)	Hepatotoxicity	Underlying hepatitis disease, hepatotoxic drugs	Check AST/ALT on D0, M1, M3 Symptomatic monitoring
	Diarrhea and GI tract upset (worst with LPV/r)		
	Metabolic syndrome (LPV/r worst), diabetes, dyslipidemia, pancreatitis	Heritable, and modifiable risk factors	Annual diabetes, and lipids test. BP every visit. Lifestyle advice.
DRV/r	Skin and hypersensitivity reactions	Sulfonamide allergy	
	CNS toxicity: insomnia, abnormal dreams, depression, confusion	Prior mental health issues	Daytime dosing
LPV/r	Electrocardiographic abnormalities (PR and QT interval prolongation, torsade de points)	Pre-existing conduction disease. Hypokalemia	Avoid concomitant use of other drugs which may prolong QT or PR interval
	Skin and hypersensitivity reactions		
Dolutegravir (DTG)	Insomnia and headache		
	Hepatotoxicity	Underlying hepatitis disease, hepatotoxic drugs	Check AST/ALT on D0, M1, M3
	Hypersensitivity reactions		

4.6. Opportunistic Infection (OI) Prophylaxis

4.6.1.Co-trimoxazole prophylaxis for HIV positive pregnant women

- Co-trimoxazole is given to all eligible HIV positive pregnant women at the ART service if they meet the criteria shown in Table 10 below, according to the National HIV Guidelines for Adults 2020.
- WHO endorses co-trimoxazole use as a priority intervention in pregnant PLHIV who meet these criteria, as there is no conclusive evidence for damage to the fetus and the benefits of co-trimoxazole prophylaxis outweigh any potential risk.
- The primary aim of co-trimoxazole prophylaxis is to prevent Pneumocystis Jirovecii Pneumonia (PJP) (previously called PCP), toxoplasmosis, and major bacterial illness.
- Routine cotrimoxazole prophylaxis should be administered to all HIV-infected people with active TB disease regardless of CD4 cell counts.

Table10: When to initiate and Stop Cotrimoxazole Prophylaxis for pregnant women

When to start cotrimoxazole	· CD4 ≤350 cells/mm^3 · All patients with TB · WHO stage 3 or 4 regardless of CD4 count
When to continue cotrimoxazole	· CD4 ≤350 cells/mm^3 and/or on TB treatment · If history of PCP with CD4 count > 200 cells/mm^3
When to stop cotrimoxazole	· CD4 count > 350 cells/mm^3 on 2 measurements at least 6 months apart *and* undetectable VL *and* completed TB treatment

Source:National HIV Clinical Management Guidelines for Adults in Cambodia. NCHADS 2020.

Dosing and administration

- Cotrimoxazole DS x 1 daily or cotrimoxazole SS tablets x 2 daily.
- Take cotrimoxazole with food to prevent gastrointestinal side effects.
  - Cotrimoxazole DS (double strength) = TMP 160mg / SMX 800mg (or 960mg)
  - Cotrimoxazole SS (single strength) = TMP 80mg / SMX 400mg (or 480mg)

4.6.2. Co-trimoxazole prophylaxis for HIV-exposed infants

- Cotrimoxazole (TM/SMX) is given to all HIV-exposed infants by staff at PAC or ART Service, according to the National Guidelines for Pediatric ARV, from 4- 6 weeks of age until HIV infection has been excluded by age-appropriate HIV testing 6 weeks after complete cessation of breastfeeding (table 11).
- All children diagnosed with HIV should continue or be started on TM/SMX and continue until children are transitioned into adult care at age 15.

Table 11: When to initiate and Stop Cotrimoxazole Prophylaxis for HIV-exposed infant

	Start Cotrimoxazole	Stop Cotrimoxazole
HIV-exposed infant	4-6 weeks of age	PCR or antibody negative 6 weeks after complete cessation of breastfeeding
All HIV-infected infants and children regardless of age or clinical stage of disease	4-6 weeks of age as for exposed infants, and continue after diagnosis of HIV has been confirmed Immediately after HIV diagnosis made in a child presenting for the first time at any age >4-6 weeks In children with PCP, subsequent to PCP treatment being completed	Stop cotrimoxazole if the child is anemic as cotrimoxazole may cause bone marrow suppression or if Grade 3/4 toxicity rash occurs. **Otherwise continue cotrimoxazole until children transition to adult care, regardless of ART or CD4 recovery.**

Source:National HIV Clinical Management Guidelines for Infants, Children and Adolescents in Cambodia. NCHADS 2020.

Table 12:Dosage Recommendations for Cotrimoxazole Prophylaxis for HIV-exposed infants

Drug	Strength of tablet or oral liquid (mg or mg/5 ml)	Number of tablets or ml by weight band once daily					
		3.0–5.9 kg	6.0–9.9 kg	10.0–13.9 kg	14.0–19.9 kg	20.0–24.9 kg	25.0–34.9 kg
Co-trimoxazole	Suspension 200/40 mg per 5 ml	2.5 ml	5 ml	5 ml	10 ml	10 ml	–
	Tablets (dispersible) 100/20 mg	1	2	2	4	4	–
	Tablets (scored) 400/80 mg	–	0.5	0.5	1	1	2
	Tablets (scored) 800/160 mg	–	–	–	0.5	0.5	1

Source: National HIV Clinical Management Guidelines for Infants, Children and Adolescents in Cambodia. NCHADS 2020.

Note: For infants and small children, syrup or small dose tablets (not 800/160) are usually used. For children weighing more than 25kg, either 400/80 or 800/160 tablets, (not syrup or 100/200 tab) are used.

Monitoring of cotrimoxazole prophylaxis:

Frequency: monthly until stable, then 3 monthly

- Check adherence, and patients understanding.
- Monitor for hypersensitivity reaction; fever and rash.
- Monitor for other side effects; GI tract irritation, hyperkalemia (especially if on ACE inhibitor), bone marrow suppression (anemia, neutropenia, thrombocytopenia), hepatitis, rarely urinary stones/ obstruction, neurological issues.

Cotrimoxazole hypersensitivity

- Usually occurs within days or weeks of commencement; skin and systemic symptoms: (most commonly rash and fever)
- Skin: Turn from dry to wet rash, Stevens-Johnson syndrome, toxic epidermal necrolysis
- Systemic: fever, dyspnea and cough, eosinophilia, hepatitis, interstitial nephritis, lupus-like syndrome, multi-organ hypersensitivity syndrome, vacuities and pancytopenia.

Management of side effects to Cotrimoxazole

- Minor rashes (dry rash) are common and can usually be managed with careful observation and continuing cotrimoxazole. Stop if persistent.
- Discontinue cotrimoxazole in the event of more severe (usually wet) rashes including Stevens Johnson syndrome, clinical hepatitis, severe anemia or pancytopenia.

For details, refer to the Cambodian National HIV Clinical Management Guidelines

Table 13: Management of Cotrimoxazole-related Rash

Severity	Description	Management
Grade 1	Diffuse or patchy erythema May be pruritic	Continue cotrimoxazole Follow up in 3-4 days Consider antihistamines for symptom relief
Grade 2	Dry maculopapular rash May appear morbilliform Minimal exfoliation	Continue cotrimoxazole Follow up in 1-2 days Consider antihistamines for symptom relief
Grade 3	Early bullae or mucosal ulceration	Discontinue cotrimoxazole immediately Hospitalize for supportive care **Never restart cotrimoxazole**
Grade 4	Toxic epidermal necrolysis or Stevens Johnson Syndrome	Discontinue cotrimoxazole immediately Hospitalize for supportive care **Never restart cotrimoxazole**

Source: National HIV Clinical Management Guidelines for Infants, Children and Adolescents in Cambodia. NCHADS 2020.

CHAPTER 5: SAFE DELIVERY FOR HIV, Syphilis and HBV INFECTED WOMEN

All pregnant women in Cambodia are encouraged to deliver in a health facility under the care of a skilled birth attendant. Women who are HIV or HBsAg positive, and women who had syphilis during pregnancy, have special needs and **should deliver in a health facility that is able to provide appropriate treatment for both mother and baby - usually a maternity ward in a referral hospital. In the case of HIV-positive women, this should if possible be a referral hospital co-located with ART services.**

- Adherence to ARV drugs by HIV and HBV positive women should be reinforced throughout pregnancy, labor and (for HIV) after delivery during breast feeding to reduce the risk of transmission.
- The Boosted-Integrated Active Case Management (B-IACM) strategy should ensure and monitor that identified HIV positive pregnant women, and women who had syphilis during pregnancy, deliver in a RH.
- All HIV and HBV-infected pregnant women, and women who had syphilis during pregnancy, should be reminded to always carry their mother health record, any other relevant documents and ARV drugs with them - especially as they get nearer to the time of expected delivery. They should be told to disclose their status to the midwife so that appropriate care can be given.

5.1 Universal Precautions

Health workers (including cleaning staff) should follow the same universal precautions during labor for HIV and HBV positive women as for all women irrespective of their HIV and HBV status.

Box 7: Universal Precautions include the following practices irrespective of HIV and HBV status:

- Washing hands with soap and water after contact with blood and body fluids.
- Disinfecting or sterilizing all devices and equipment used during invasive procedures.
- Avoiding needle recapping to reduce needle stick injuries.
- Using needles or scalpel blades on one patient only.
- Safely disposing of needles in puncture- and leak-proof safety boxes.
- Wearing gloves when in contact with body fluids, non-intact skin, or mucous membranes.
- Covering broken skin or open wounds with waterproof dressings.
- Wearing impermeable plastic apron and eye shields, mass, hat and boot during operations and deliveries.
- Promptly and carefully cleaning spills involving blood or other body fluids.
- Using appropriate systems for safe waste collection and disposal.
-

Adapted from: WHO/CDC. 2008. Prevention of Mother-to-Child Transmission of HIV Generic Training Package

5.2 HIV and HBV Prophylaxis for Health Care Workers

5.2.1 HIV Prophylaxis

In case of HIV occupational accidental exposure during delivery or other patient care, such as a needle stick, injury from a sharp instrument visibly contaminated with blood, or exposure of an open wound or mucous membrane for > 1min to a large quantity of blood or amniotic fluid, the exposed staff should promptly report to the OD or PHD MCH and HIV Coordinators and attend the nearest ART clinic for possible Post Exposure Prophylaxis (PEP) with ARV. Treatment should ideally start within 4 hours but may still be beneficial up to 72 hours later. ARV prophylaxis is not indicated for contact with blood or amniotic fluid on unbroken skin.

5.2.2. Hepatitis B Prophylaxis

It is highly advisable for all midwives and other health care workers at risk of occupational exposure to be fully vaccinated for Hepatitis B. In case a health care worker who is not immunized has accidental exposure to the blood of someone who is HBsAg positive through a needle stick, injury from a sharp instrument visibly contaminated with blood, or exposure of an open wound or mucous membrane to blood, the exposed staff should immediately receive the Hepatitis B vaccine followed by booster doses 6, 10 and 14 weeks later. If available, Hepatitis B Immune Globulin (HBIG) may also be administered (0.06 mL/kgor 500 IU) intramuscularly.

5.3 Recommended Approaches to Safe Delivery for HIV or HBV-infected women

- Throughout labor, all pregnant women including HIV and HBsAg positive women should receive full support such as effective communication, mobility, urination, eating and drinking, breathing technique, measures to relieve pain & discomfort and birth companion; and care during the second stage of labor and immediately after delivery in an encouraging, clean and supportive atmosphere. (See the NMCH Safe Motherhood Protocol for health centers and referral hospitals).
- **NMCHC recommends natural delivery for all HIV and HBsAg positive pregnant women unless there is another strong medical indication for caesarean section. Caesarean section is not routinely recommended for HIV and HBsAg positive pregnant women.**
- Although elective caesarean section has been shown to protect against transmission compared to vaginal delivery, especially in the case of high viral load, it is not recommended in resource-limited settings specifically because of the risk of complication and increased morbidity and mortality in mother and child.
- **Caesarean section remains recommended only for obstetric and other medical indications for HIV and HBsAg positive pregnant women.**
- Measures should be taken to reduce the risk of HIV or HBV transmission to the baby during vaginal delivery as described in the box below:

Box 8: Measures to minimize the risk of HIV and HBV transmission during a vaginal delivery

- Avoid artificial rupture of membranes, unless absolutely necessary.
- Avoid episiotomies unless absolutely necessary.
- Avoid induction of labor unless absolutely necessary.
- Minimize the use of forceps or vacuum extractors.
- Minimize the risk of postpartum hemorrhage.
- Practice universal precautions.

Adapted from: WHO/CDC. 2008. Prevention of Mother-to-Child Transmission of HIV Generic Training Package

5.4 Post-delivery Care and Education Support

All mothers and newborns

- Monitor every 15 minutes for 1 hour after delivery of the placenta, then every 30 minutes during the second 2 hours, every hour in 3rd and 4th hours and every 4 hours until discharge.
- Keep the mother (and baby) at the facility for at least 24 hours after delivery. Assess mother and baby before discharge.
- Ensure that the baby received a dose of HBV vaccine within 24 hours of birth and preferably *within 2 hours of delivery.*
- Provide the mother with iron/folic acid (42 tablets), and mebendazole; provide tetanus toxoid immunization if needed.
- Observe breastfeeding and assess positioning, attachment and suckling. Teach the mother correct positioning and attachment. Do not discharge until breastfeeding well.
- Counsel on feeding colostrum, exclusive breastfeeding, and the danger of mixed feeding and (if applicable) unhygienic preparation of formula feeding. (See chapter 6).
- Advise on postpartum care and hygiene
- Counsel on mother's nutrition
- Counsel on birth spacing and family planning (See chapter 7).
- Advise on when to seek care and next routine postpartum visit
- Perform assessment prior to discharge. If any problems are identified at pre-discharge assessment, keep mother and newborn at hospital and reassess before discharge.
- Continue any treatments initiated earlier,
- Advise on care for the newborn after discharge such as warmth, cord care, sleeping, hygiene, routine visit, danger signs and tell the mother to return immediately if she or her baby has danger signs.
- Advise the mother to bring mother's and baby's records with her to every visit

Source:Safe Motherhood Protocol for Health Centre and Referral Hospital, NMCHC 2016.

In addition to the above, all HIV and HBsAg infected women should receive specific postpartum care and education for themselves and their infants, as described below:

Box 9: Special Post-delivery care for HIV infected women:

- Ensure the mother is on ART. If not yet started, obtain immediately from ART site and start while still in the maternity ward. This includes women newly reactive on testing during delivery if confirmatory test is positive or if confirmatory test cannot be done right away.
- Obtain a Dried Blood Specimen (DBS) from the infant for DNA-PCR test *before discharge from the maternity service*. DBS cards should be kept on the Maternity ward for this purpose. (see Box 9 below).
- Provide Infant ARV prophylaxis to all HEI exposed infants, including the infants of newly reactive women who are still awaiting confirmatory test. (If the confirmatory test is negative, the ARV can later be stopped).
- Ensure the infant is enrolled in PAC for:
    - Co-trimoxazole prophylaxis.
    - Early HIV diagnostic testing.
    - ART for HIV infected children, when indicated.
    - Treatment monitoring for all children receiving ART.
- Infant immunizations are especially important for HIV exposed infants. *Make sure the baby received birth dose of HBV within 24 hours* along with other routine immunizations, and receives all scheduled immunizations thereafter.
- Counsel on maternal nutrition and infant feeding (See Chapter 6).
- Provide ART adherence counselling to the mother.
- Provide psychosocial support.
- Counsel on signs and symptoms of postnatal infection and other danger signs including ARV side effect in mothers and their new-borns.
- Counsel and support to encourage partners testing, adoption of risk reduction and disclosure.
- Counsel on positive prevention through family planning (see Chapter 7)
- The delivery provider should inform the CMC/CMS/CAA team or OD PMTCT Coordinator of all HIV+ women with delivery as soon as possible, especially for newly identified HIV-infected women, so that they can coordinate care and ensure that follow-up appointments are kept

Box 10: Collection of Dried Blood Sample (DBS) at birth:

- Explain procedure to mother and obtain verbal consent.
- Fill out the DBS Card with name and date. Avoid touching the circles on the card.
- Have the mother or other relative sit and hold the baby with the baby's foot pointing downward.
- Warm the baby's heel by massaging it with your hand.
- Wipe one side of the heel with alcohol and let dry.
- Grasp the baby's foot with your hand and gently squeeze around the heel with your fingers.
- Prick the side of the heel with a sterile lancet and wipe the first blood drop away with sterile gauze.
- When a second drop of blood forms, hold the card right under the blood drop so that the blood falls into the circle. Do not directly touch the card to the baby's skin, just let the blood drop fall onto it and soak it. If necessary, gently squeeze the heel to help the blood come out. Make sure the circle fills completely.
- After the circle is filled, release pressure for a second to let another drop form then repeat until at least all circles on the card have been filled with blood. There must be at least 3 circles that are filled completely.
- Put the card aside carefully, face up, without letting anything touch the blood circles.
- Apply pressure to the puncture site with sterile gauze until all bleeding has stopped.
- Bring the card to the ART site for transport to the lab in Phnom Penh. If the ART site is not open, store the card in a clean secure place for drying, making sure that nothing touches the blood circles, and then bring to the ART site as soon as it opens.

Box 11: Special Post-delivery care for HBsAg infected women:

- Ensure the infant receives a birth dose of HBV vaccine *within two hours of delivery.*
- Counsel on the importance of completing the full schedule of HBV and other immunizations for the infant.
- If on ARV treatment, advise to continue until advised otherwise by the doctor.
- Reinforce appointment schedule for hepatitis follow-up for the mother.
- Inform that the baby should be tested for HBsAg at age 7-12 months (1 month or more after completion of the full Hepatitis B vaccine series).
- Reassure that breast-feeding is safe, and counsel on infant feeding and maternal nutrition.

Breast feeding for Infants born to HIV, HBsAg and Syphilis positive mothers

Soon after delivery, HIV-infected mothers should be carefully counselled by trained midwives on how best to feed themselves and about available feeding options for their infants. They should be supported to initiate their chosen feeding method while still in hospital. Although there is increased risk of MTCT of HIV during breast-feeding, the dangers of improper formula feeding or mixed feeding are greater, and NMCH recommends exclusive breastfeeding for all HIV exposed infant (see chapter 6).

For HBsAg positive mothers, there is no evidence that breastfeeding increases the risk of mother to child transmission of HBV, and exclusive breast-feeding should be encouraged.

There is also no evidence of syphilis transmission via breastmilk, so even mothers just starting treatment for their syphilis should be encouraged to breastfeed.

Family Planning for postpartum women

Information and services should be provided in the postpartum period to all women to avoid future unintended pregnancies. In the case of HIV- and HBsAg infected women, and women at risk of STI/HIV, dual protection (condom plus another method) should be encouraged.

Initial counselling should be done before discharge after delivery. In addition, women attending their 6 weeks postnatal check-up should receive counselling and appropriated family planning services.

See chapter 7 for information on specific methods and other details.

CHAPTER 6: INFANT FEEDING AND FOLLOW-UP

All women have the right to choose how they feed their infants, however **exclusive breastfeeding is the primary option** encouraged.

From birth to six months of age:

All women are encouraged to exclusively breastfeed their infants for the first six months of life. Exclusive breastfeeding means giving infants only breast milk. Infants should not receive any other food or drink, not even water, during the six months of exclusive breastfeeding.

After six months of age:

- All women should introduce complementary feeding and continue to breastfeed for up to 24 months or longer.

Note: Stopping breastfeeding abruptly is not advisable because it is associated with adverse consequences for the infant such as growth failure and increased prevalence of diarrhea. Rather, mothers should stop breastfeeding gradually over a one month period.

HBsAg Positive women: There is no increased risk of MTCT when women with chronic HBV breastfeed. If they are taking Tenofovir, this is safe for the baby.

Syphilis Positive women: syphilis is not transmitted in breastmilk. Women with syphilis need antibiotic treatment to cure the disease but they can start BF even before they have been treated. Babies of congenital syphilis need antibiotic treatment, but they can start breastfeeding right away even before completing antibiotic treatment.

HIV Positive women are discussed below.

6.1 Infant Feeding in the Context of HIV

To maximize the likelihood of HIV-free survival of their child, HIV-infected mothers need careful counselling to help them to make an informed infant feeding choice, appropriate to their particular situation, and ongoing support to help them implement their choice. Although MTCT of HIV can occur during breastfeeding, infants who are **not** breastfed can be at risk of severe diarrhea, malnutrition, and/or respiratory infection due to unsafe preparation of formula milk or provision of inadequate or inappropriate complementary foods, and because the infants do not receive the maternal antibodies and nutritional benefits of breast milk.

Counsellors should encourage HIV+ women, wherever possible, to breast-feed their infants exclusively for the first 6 months and then to continue BF along with complementary foods until at least 12 months of age, and up to age 24 months or longer. Exclusive breastfeeding reduces both the risk of HIV transmission and also mortality from diarrhea, pneumonia and malnutrition. It also improves child development and cognition. International research has shown that ART

given to the mother and ARV prophylaxis to infant during breastfeeding reduces the risk of HIV transmission to very low levels.[24]

- While it is recommended to continue BF until at least age 12 months, mothers who are unable to continue for that duration should be assured that shorter durations are better than not breast-feeding at all.
- Health workers should support mothers living with HIV to exclusively breastfeed and to avoid mixed feeding. However, if a mother is not exclusively breastfeeding for whatever reason, health workers and mothers living with HIV can be reassured that ARV treatment is effective at reducing the risk of postnatal HIV transmission[25]. Thus, mixed feeding in itself is not a reason to stop breastfeeding as long as the mother is adherent on ART.
- All HIV-infected breastfeeding mothers should take ART throughout the breastfeeding period and continue for life for their own health and to prevent HIV transmission through breast milk. Reassure mothers that their ART will not harm the baby.
- All HIV-exposed infants should receive ARV prophylaxis for either 6 or 12 weeks after birth based on their risk status (See section4.1.1.).

- Orphaned HIV-exposed infants should be supported with replacement feeding for at least 12 months, through referral to appropriate organizations. Replacement feeding practices should not be encouraged amongst the general population. If despite this a mother nonetheless chooses not to breastfeed, she should be provided with detailed counselling and support on safe replacement feeding and be trained on how to prepare it correctly in a hygienic manner (see below).

Replacement Feeding

- When considering replacement feeding, health-care providers must take care to ensure that an uninterrupted supply of formula is available for the infant for at least 12 months and that women are clear about how to prepare formula feeds correctly.
- Cow's milk, soy milk, or condensed milk should not be given to infants. Mothers who choose not to breast feed their babies should **only give international standard commercial infant**

Box 12: Requirements for safe formula feeding:

- Safe water (boiled water) and sanitation is assured at the household level and community
- The mother/caregiver can reliably provide sufficient infant formula milk to support normal growth and development of the infant
- The mother/caregiver can prepare feeding materials cleanly (washing with clean, hot, soapy water and rinsing with clean water) and can sterilize bottles and nipples by boiling
- The mother or caregiver can ensure that unrefrigerated formula is either consumed or discarded within 2 hours of mixing (or used within 24 hours if it has been stored in a refrigerator, but not more than 2 hours after re-heating)
- The mother/caregiver can, in the first six months, exclusively give infant formula milk, and the family is supportive of this practice
- The mother or caregiver can access comprehensive child health services.

[24]Updates on HIV and Infant Feeding. WHO 2016.
[25]Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection, WHO, 2016

formula milk as a replacement feed.

6.2 HIV-exposed Infant Follow-up

6.2.1.Immunisations and Other Routine Preventive Health Services

Routine immunizations for HIV-exposed infants are the same as for non HIV-exposed children. Immunization should start at birth, with BCG and birth dose of Hepatitis B vaccine, the latter preferably given within 2 hours of delivery. Mothers should then be counselled to take their infants for further immunizations either to their local HC or to the hospital where the OI/ART or pediatric AIDS care services are located, starting at 6 weeks of age, following the National Immunization Program's Vaccination Policy Recommendations. In addition, routine administration of Vitamin A Capsule (VAC) prophylaxis and mebendazole should commence at age 6 months, the same as for non-HIV exposed children, and continue every 6 months until age 5 years. Growth monitoring will also be conducted during immunization and VAC.

6.2.2. Infant Follow-up Specific to HIV Exposure

In addition to the routine measures described above for all infants, HIV-exposed infants should receive the following services

Immediately after Delivery

- Receive a DNA PCR test (see chapter 3), and
- Receive ARV prophylaxis of NVP alone (for low risk exposure status) or dual NVP and AZT syrup (for high risk exposure status). (See chapter 4), and
- Pre-register at PAC or ART clinic before discharge the hospital for further follow-up including infant diagnosis at 6 weeks, cotrimoxazole prophylaxis and final HIV diagnosis.

The HIV-exposed infant referral form (salakabat) should be completed at Maternity (the babies' code number is assigned either by maternity or PAC), attached to the baby's immunization card and brought with the baby to ART or PAC.

By age 6 weeks all HIV-exposed infants should receive:

- An additional HIV-DNA PCR test. Note: If DNA-PCR was not done at birth, then it should be done at the very first opportunity rather than waiting until age 6 weeks.
- Cotrimoxazole for OI prevention (please see section 4.6.2 for details)

Between 6 weeks - 17 months

- HEI who have never breastfed may stop Co-trimaxazole (CTX) if the 6 week DNA-PCR is negative and will not need further testing until aged 18 months

- Breastfed HEI need to continue CTX with monthly check ups at PAC and a repeat HIV test done 6 weeks after cessation of breastfeeding. If aged under 9 months this will be another PCR test. If over 9 months, it will be an antibody test. Positive antibody tests are followed by a PCR to confirm.

- If at any point the breastfed HEI shows HIV-related symptoms then HIV test is immediately done (PCRT if <9 months of age otherwise antibody test followed by PCR if antibody test is positive).
- Breast-fed infants may discontinue CTX 6 weeks after stopping breast-feeding provided upon a negative HIV test is negative.

18 months of age:

- all HIV-exposed infants need an HIV antibody test. If still breastfeeding at that time, they will need 1 more antibody test 6 weeks after breastfeeding has fully stopped.

The above follow-up assumes HIV tests are negative. Please see the HIV Clinical Management Guidelines for Infants, Children and Adolescents for details of management of HEI who test HIV positive.

6.3 Syphilis-Exposed Infant Follow Up

Upon delivery of an infant whose mother tested positive for syphilis on rapid test, the mother's records should be checked for evidence of treatment. If the mother received at least one dose of benzathine penicillin in pregnancy, no treatment is indicated for the baby unless there are signs of congenital syphilis as follows:

Early clinical signs (less than 2 years old)

- Rash starting as small blisters, especially on the palms and soles, and later changing to copper-colored, flat or bumpy rash
- Rhinitis (snuffles)
- Chronic nasal discharge
- Fever
- Irritability
- Generalized lymphadenopathy (enlarged lymph nodes)
- Hepatosplenomegaly (enlarged live and/or spleen – mass in belly)
- Skeletal (bone) abnormalities
- Pseudo paralysis of extremity (not able to move painful arm or leg)
- Failure to thrive or achieve developmental milestones

In older infants and young children

- Abnormal notched and peg-shaped teeth, called Hutchinson teeth
- Bone pain
- Blindness
- Clouding of the cornea (the covering of the eyeball)
- Decreased hearing or deafness

- Deformity of the nose with flattened nasal bridge (saddle nose)
- Gray, mucus-like patches around the anus and vagina
- Joint swelling
- Saber shins (bone problem of the lower leg)
- Scarring of the skin around the mouth, genitals, and anus

If any of the above signs are present at birth, or noted during subsequent follow up, the infant should be treated for congenital syphilis as described in Table 7 of section 4.2.

If the mother was not treated during pregnancy, or treated with a drug other than penicillin, or treated less than 30 days before delivery, then the infant must also be treated for congenital syphilis, even if asymptomatic.

Please see treatment guidelines for congenital syphilis in section 4.2

Box 13: Indications for Treatment for Congenital Syphilis

1. Syphilis positive* mother who was not treated during pregnancy

2. Syphilis positive* mother who was treated during pregnancy but with a drug other than penicillin

3. Syphilis positive* mother who was treated with penicillin but less than 30 days prior to delivery

4. Syphilis positive* mother who was treated with penicillin more than 30 days before delivery if the baby shows clinical signs of congenital syphilis

**** Positive on TPHA rapid test with no RPR test done, or positive on TPHA rapid test with a reactive RPR.***

Sources: (1) NCHADS. National Guidelines on Sexually Transmitted Infection and Reproductive Tract Infection Case Management. (2) WHO. Guideline on syphilis screening and treatment for pregnant women. 2017

6.4 HBV Exposed Infant Follow Up

Immunizations

All infants should receive, in addition to an immediate birth dose of HBV vaccine, 3 HBV booster doses and all other routine immunizations per the normal schedule. It is especially urgent that infants of HBsAg positive mothers receive the birth dose within two hours of delivery, preferably while still in the delivery room.

Infant Follow-up

At the age of 7 - 12 months (and at least 1 month after completing the full series of HBV vaccine), infants whose mothers were positive for the HBsAg during pregnancy (regardless of whether the mother received ARV) should be tested for the HBsAg. If positive, the baby should be assessed by a physician trained in the management of HBV.

CHAPTER 7: FAMILY PLANNING

Family Planning (FP) services are an essential component of the package of prevention and care activities for PMTCT. Preventing unwanted pregnancies among HIV- and HBV-infected women can reduce maternal and infant mortality and, particularly amongst high-risk women, reduce the number of new infections occurring through vertical transmission. Condoms, used consistently and correctly, can prevent both pregnancy and infectious diseases, including Hepatitis B, STIs and HIV. Dual methods the use of condoms with another modern contraceptive method to prevent both infection and unintended pregnancy should be promoted.

FP services should provide high quality, client-centered information and services and offer a range of modern contraceptive methods to women and their partners (especially those in high-risk groups), including unmarried individuals and adolescents. Women should be given adequate information in order to make an informed, voluntary choice of a contraceptive method.

Services should be offered to all mothers, irrespective of HIV or HBV status, during antenatal and postnatal care and (for HIV+) during ART site visits to enable women to make informed choices about the most appropriate method for their particular situation. Information given to clients should at least include:

- Understanding of the relative effectiveness of the method;
- Correct use of the method;
- Common side effects;
- Health risks and benefits of the method;
- Signs and symptoms that would necessitate a return to the clinic;
- Information on return to fertility after discontinuing method use; and
- Information on STI protection.

HIV+ women can access short-term methods (Condom, CoC, PoP and injectable) at ART services free of charge, and ART sites should refer them to health facilities where Implant, IUD and Permanent methods are available. Physicians (team leader) and Counsellors at ART clinics should be trained on family planning-HIV integration.

Non-PLHIV women can get BS services at HCs and RHs.

7.2 Commodity and supplies

- In addition to condoms, other short term methods such as oral contraceptive pills and injectable progestogen must be available at ART clinics, to enable PLHIV women to access contraceptive services more easily and free of charge.
- Condoms, oral contraceptives and injectables are also available at HCs at low cost. IUDs are available at many, but not all, HCs and also at hospitals. Implants are available at hospitals.

7.3 Methods of Birth Spacing and Dual Protection

- Comprehensive information regarding the advantages and disadvantages of various methods of contraception should be given to all women, regardless of their HIV or HBV status.
- When a risk of STI/HIV or HBV transmission exists, it is important that health care providers strongly recommend **dual protection** through the simultaneous consistent use of condoms with other methods for preventing both unintended pregnancy and transmission of infection.
- Health care providers should consistently remind HIV and HBV infected couples of the importance of correct and consistent use of condom and they should be taught about correct use of condoms and condom negotiation skills.
- For details of contraceptive methods available, see Table 13 below.
- The use of contraception methods, with the exception of male and female sterilization, does not result in an irreversible change in fertility. Return to fertility is prompt with all methods, with the exception of DMPA injection (Depot medroxy progesterone acetate, or Depo-Provera); this does not cause permanent infertility but the return to fertility with this method is slower and may take 6-9 months from the date of the last injection regardless of the duration of use.
- Sterilization (tubal ligation or vasectomy) is a permanent. All couples considering these methods should be counselled and the procedure performed by trained providers
- For HIV+ **women who are on ART that includes an NNRTI** (e.g. EFV) **or PI,** it is important to note that the **effectiveness of low dose Combined Oral Contraceptives (C0C) is reduced**. CoCs will still provide some protection and are better than not using any contraception, but the **failure rate will be higher** in women on ART. Therefore, women on ART for HIV who strongly want to avoid or delay pregnancy are better advised to use another method such as injectable, implant or IUD. (NCHADS HIV Management Guidelines 2020)
- Tenofovir taken by women with HBV is not known to interfere with contraceptive effectiveness.
- Traditional methods, like Calendar method (periodic abstinence or "rhythm"), and Withdrawal are not recommended for HIV/HBV positive women due to their high failure rate. It is also not recommended to rely on breast-feeding (Lactational Amenorrhea Method, or LAM) alone as a woman may become pregnant before her period returns even when breastfeeding exclusively.

Table 14: Birth Spacing and Family Planning Methods

METHOD	ACTION	ADVANTAGES	DISADVANTAGES	Eligibility	WHEN to START
Barrier method : (Male Condoms)	Work by forming a barrier that keep sperm out of the vagina, preventing pregnancy and infection	• Protects against STIs/HIV and HBV transmission & pregnancy if used correctly • Easy to use and access • No side effect, no harm • Don't need prescription or health check • Helps prevent cervical cancer	• Need to use new condom at each intercourse • Couple may feel uncomfortable using it • Can get pregnant or infection if it is used incorrectly and inconsistently • Adherence to consistent condom use is difficult	• All clients and their partners • Can be used alone or with another birth spacing method (dual method)	• Can be used any time • Can be used during pregnancy to prevent HIV/STI infection or reinfection
Short acting COC (Combined Oral Contraceptive)	Prevents the release of eggs from the ovaries (ovulation) Thickens cervical mucus, making it difficult for sperm to get into the uterus Makes the endometrium thin resulting in difficulty to fertilize an egg	• Effective if used correctly by women not on ART • Regular menstrual period • Helps prevent from ovarian cancer, endometrial cancer, and anemia • Less pain during menstruation and ovulation • Can become immediately pregnant when stop using it.	• Reduced effectiveness in women on ART that includes an NNRTI or PI. • Does not protect against STIs/ HIV transmission • Must be daily and consistently taken • Common side effects when first starting: breast tenderness, headaches, changing weight, nausea. • Reduces the amount of breast milk production.	• Women not on an ART regiment that includes a NNRTI or PI. • Women who are on an NNRTI or PI can also take it, but the failure rate will be higher than for the general population. • Safe for women with chronic HBV unless liver function is impaired.[26] • See screening checklist for general medical contraindications	• Start on any day between 1st and 5th day of menstrual period. If the pill is taken after day 5, make sure that a woman is not pregnant and she should use condom for the next 7 days if having sex. • Can start immediately or any day within 7 days after safe abortion • If breast feeding, start at 6th month and ensure that a woman is not pregnant • If non-breast feeding, start at 6th week after childbirth and ensure that woman is not pregnant

[26] Kapp et al. The effects of hormonal contraceptive use among women with viral hepatitis or cirrhosis of the liver: a systematic review . *Contraception.* Volume 80 Issue 4. October 2009

METHOD	ACTION	ADVANTAGES	DISADVANTAGES	Eligibility	WHEN to START
POPs (Progesterone only contraceptive Pills)	Prevents the release of eggs from the ovaries (ovulation) Thickens cervical mucus, making it difficult for sperm to get into the uterus Makes the endometrium thin resulting in difficulty to fertilize an egg	• Effective if used correctly • Regular menstrual period • Helps prevent ovarian cancer, endometrial cancer, and anemia • Less pain during menstruation and ovulation • Can become immediately pregnant when stop using it. • Can be used by women who cannot use COC. • Can be used while breastfeeding	• Does not protect against STIs/HIV /HBV transmission • Less effective than COC • More likely to have pregnancy than COC if forget to take a pill or vomit.	• Women on ART can use safely and effectively • Safe for women with chronic HBV unless liver function is impaired. • Appropriate for exclusive breastfeeding mothers. • See screening checklist for general medical contraindications	• Start 1st pill at any day between 1st and 5th day of menstrual period. If the pill is taken after day 5, make sure that a woman is not pregnant and she should use a condom for the next 7 days if having sex. • Can start immediately or at any day within 7 days after safe abortion • If breast feeding, POP can be used between 6th week and 6th month after ensuring that the woman is not pregnant.
ECPs (Emergency Contraceptive Pill) **Note: Cannot use ECPs as a permanent method or form of abortion.**	Emergency contraceptive pills helps to prevent pregnancy when taken within 3 days (72 hours) after unprotected sex. The sooner they are taken, the better. Works primarily by preventing or delaying the release of eggs from the ovaries (ovulation).	• Effective to prevent pregnancy if it is used as soon as possible, within 72 hours after having unprotected sex. • Can become pregnant immediately after stopping ECPs	• Does not protect from STIs/HIV/HBV transmission • Use only one time during menstrual cycle. Cannot prevent pregnancy if unprotected sex is over 72 hours ago • More side effects than COC.	• Women on ART can use it safety and effectively, but if the ART regimen includes an NNRTI or PI, need a double dose i.e. 3mg rather than usual dose of levonorgesterol1.5 mg [27] • Safe for women with chronic HBV unless liver function is impaired. • See screening checklist for general medical contraindications	• Used after: rape, unprotected sex, or fail/missed dose of other birth spacing method. • Take as soon as possible after exposure, and not more than 72 hours later.

[27] NCHADs. HIV Management Guidelines 2020.

METHOD	ACTION	ADVANTAGES	DISADVANTAGES	Eligibility	WHEN to START
Injectable (DMPA) (progestin-only)	Prevents the release of eggs from the ovaries (ovulation) Thickens cervical mucus, making it difficult for sperm to get into the uterus Makes the endometrium thin resulting in difficulty to fertilize an egg	• Easy to remember (every 3 months) • Very effective if used correctly • Don't reduce the quantity of breast milk • Can reduce anemia • Can prevent ovary cancer and endometrial cancer • Confidentiality	• Does not protect against STIs/ HIV/HBV transmission • It takes for 6 to 9 months or longer to get pregnant after stopping for some women • Most common side effects: more bleeding, and spotting at first and then no menstruation, cycle, weight gain. • Side effects may last up to 3 months after stopping	• Women on ART can use it safely and effectively • Safe for women with chronic HBV unless liver function is impaired. • Can be used by breastfeeding mothers • See screening checklist for general medical contraindications	• Start at any day between day 1 and day 5 of menstrual period. if the drug is injected after day 5, make sure that a woman is not pregnant and she should use condom for next 7 days if having sex. • Can start immediately or at any day within 7 days after safe abortion • Can start at 6 weeks after delivery; after ensuring that the woman is not pregnant.
Long acting Implants Small plastic tubes containing progestogen placed under skin of upper arm	Prevents the release of eggs from the ovaries (ovulation) Thickens cervical mucus, making it difficult for sperm to get into the uterus Makes the endometrium thin resulting in difficulty to fertilize an egg	• Long-term effective up to 3-5 years • Effective within 8 h after insertion • Suitable for a woman who could not use pills containing Estrogen • No effect on breast milk • Prevent anemia • Can prevent ovary cancer and endometrial cancer • Can be extracted at any time, and a woman can get pregnant again.	• Does not protect against STIs/ HIV/HBV transmission • A woman cannot insert or remove implants by herself. It can only be performed by a trained health provider • Have similar side effects like COC or POP and injectable contraceptive.	• Women on ART can use it safety and effectively • Safe for women with chronic HBV unless liver function is impaired. • Can be used by breastfeeding mothers • See screening checklist for general medical contraindications	• Start at any day between 1st to 5thday of menstrual period. • Can start immediately or at any day within 7 days after safe abortion • Can start at week 6 after childbirth after ensuring that the woman is not pregnant • Can start immediately if changing any method of contraceptive.

METHOD	ACTION	ADVANTAGES	DISADVANTAGES	Eligibility	WHEN to START
Copper IUD Small flexible device that fits inside the uterus	Works primarily by causing a chemical change that damages sperm and egg before they can meet Makes the womb difficult for a fertilized egg to implant.	• Women with HIV and HBV can safely use IUD if there is no STI risk • Effective up to 10 years • No effect on sex; the partner cannot feel it is there • Appropriate for breast feeding mothers • Can be removed whenever user wants, and she can get pregnant quickly	• Does not protect against STIs/ HIV/HBV transmission • Can cause pelvic infections • Can have a minor pain during or soon after inserting IUD (pain will disappear within 24 to 48 hours) • Cramps during menstruation • May increase blood flow in menstruation (more quantity and longer in duration of menstruation) • May cause spotting (Bleeding between menstrual periods)	• Good option for healthy HIV and HBV-infected women • Not recommended for clients with STIs and 4th stage AIDS patients. • Not recommended for women at high risk of new STIs	• Start at 1st to 12th day of menstrual period after ensuring that a woman is not pregnant • Can start immediately after changing from any method of contraceptive. • Can start within 12 days after safe abortion • Start at 6th week after birth and 6th month after C-Section after ensuring that the woman is not pregnant.
Permanent Methods : Tubal-ligation and vasectomy	Vasectomy: Block or tie off each vas deferens, keeping sperm out of semen Tubal ligation: block or tie off fallopian tubes.	• Safe surgical procedures if performed correctly • Don't need to remember time like other methods • Don't worry about pregnancy when having sex • Suitable for women or couples who do not want more children • No long-term side effects.	• Does not protect against STIs/ HIV/ HBV transmission • Permanent method, cannot be reversed if the couple changes their mind later • For vasectomy, a couple needs to use condom or other contraceptives for at least 3 months	• Couples who are sure they do not want to have children • Delay the procedure when AIDS related illness present. • Use condom for few months after vasectomy	• Can be performed at any time when making sure of non-pregnancy • Can perform within 48h after safe abortion • Can perform within 7 days after childbirth, or 6th week after delivery while making sure that there is no pregnancy • Tubal ligation can be performed at same time as a C- section with informed consent • Vasectomy can be performed at any time

CHAPTER 8: Over view of PMTCT program including MANAGEMENT and LINKAGES between MCH and HIV/AIDS program

8.1 Management of the PMTCT Programme

The management of PMTCT activities follows the national three tier MoH system. At the National Level, the PMTCT Programme is responsible for coordinating the setting of national targets, developing and revising national guidelines, coordinating training and supervision, managing data collection and monitoring, supporting the provinces to develop strategies for programme improvement and providing ongoing technical guidance to the provinces.

At the Provincial level, the **MCH Manager/Provincial PMTCT coordinator**, in collaboration with the Provincial AIDS and STI Programme (PASP) Manager and the PHD Communicable Disease Control (CDC) Manager is responsible for coordinating implementation of the PMTCT programme across the different ODs within the province to ensure that national goals and targets can be met. The Provincial MCH Manager supervises the OD MCH Manager to ensure that pregnant women access the full range of Reproductive, Maternal, Newborn and Child Health and HIV/STI/HBV services. The MCH Coordinator, PASP Manager and other attend staff the HIV coordination meetings organized quarterly by the OD Director. The MCH Coordinator also works with the PHD CDC Manager to identify an appropriate referral path for women who test positive for HBsAg.

The **OD MCH coordinator** has the task of ensuring that implementation of Reproductive, Maternal, Newborn and Child Health, activities, including PMTC, in the OD follows national priorities and that coordination with partners, in particular the HIV/STI CoPCT Coordinator, result in smooth running of the programme and achievement of set goals. Under the leadership of the OD Director, the MCH OD coordinator and MCH staff at HCs and RH Maternity wards work closely with the **OD active case management coordinator (CMC)** to ensure all pregnant women identified HIV reactive get VCCT confirmatory test, and if confirmed positive are immediately enrolled at the ART clinic and regularly followed up. The OD Coordination Meetings are a forum where referral mechanisms between ANC/Maternity/PNC services and HIV/STI services could be discussed as well as home and community based care and support services.

The **OD MCH Coordinator** and **OD active case management coordinator (CMC)** also ensure that all women who test reactive to syphilis immediately start treatment, and then receive RPR test and further treatment/follow up at the FHC. The OD MCH Coordinator ensures that all ANC and delivery facilities in the OD have clear instruction on where to refer HBsAG+ women and that all such women receive further testing and treatment, if indicated, at the nearest hospital able to provide it. Depending on the location, this might be a National Hospital, Provincial Hospital, Referral Hospital or a RH ART clinic.

At the health facility level (RH and HC), the **RH Director** and the **HC Manager** are responsible for coordinating and implementing all the activities included in the CPA and MPA packages. PMTCT activities are integrated into both MCH and HIV Services. ANC, Maternity and PNC services are managed by the MCH program. VCCT, ART, PAC sand STI services are managed by the HIV program. The MCH program needs to ensure the consistent provision of standard antenatal, delivery and postnatal care following the Safe Motherhood Protocol, including IEC, counselling both antenatally and postnatally, HIV, HBV and Syphilis screening tests, FP, delivery, referral

mechanisms to other related health facility-based services and linking with community-based organizations. The HIV program will ensure and organize the supplies of HIV and syphilis rapid test at all ANC and maternity services and of ARV at all maternity services co-located with ART sites. The HIV program also ensures supplies and services at ART sites.

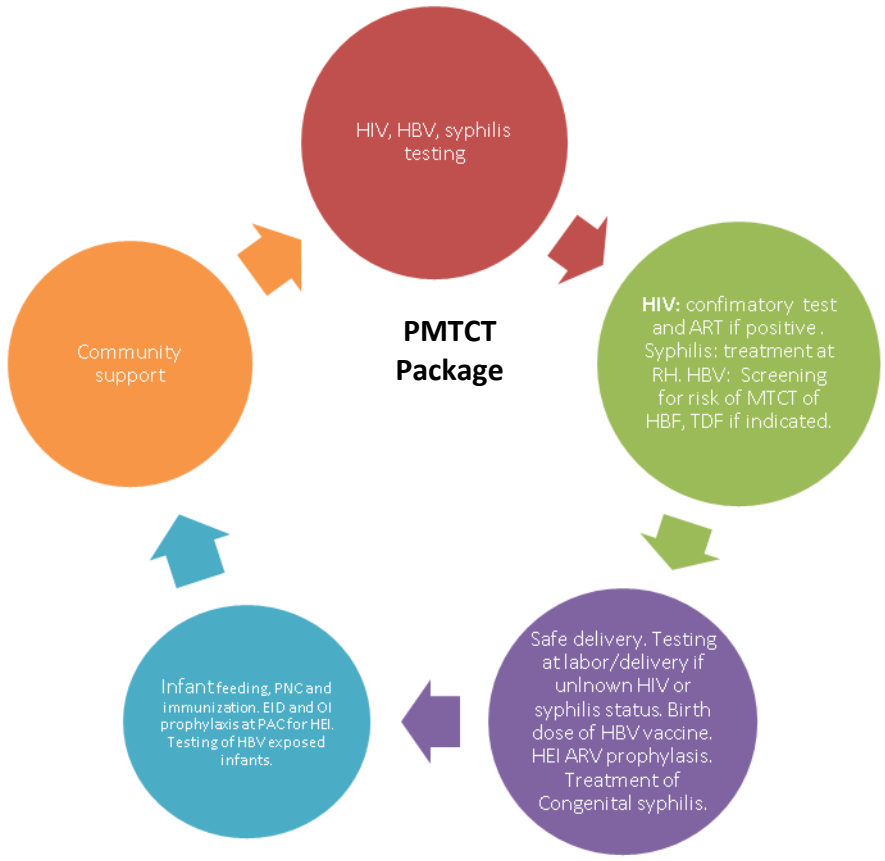
ARV treatment for HBsAg+ women found to be at high risk of perinatal transmission comes under the direction of the MoH Communicable Disease Control Program (MoH-CDC). Treatment may be provided at a National, Provincial or Referral Hospital. The necessary ARV will be obtained from the relevant facility pharmacy as will rapid tests for the HB "e" antigen.

8.2 Full package of PMTCT services

The PMTCT programme in Cambodia provides the following interventions:

- HIV, HBV and syphilis counselling and testing during ANC, labor and delivery and postpartum
- Provision of antiretroviral (ARV) drugs to HIV+ mothers and HIV-exposed infants
- Treatment of syphilis
- Antiviral drug (TDF) for HBsAg positive women at high risk of perinatal transmission
- Safer delivery practices
- Infant feeding information, counselling and support
- Referrals to comprehensive treatment, care and social support for mothers and families with HIV infection

Figure 2: Cycle of PMTCT for HIV, HBV and Syphilis



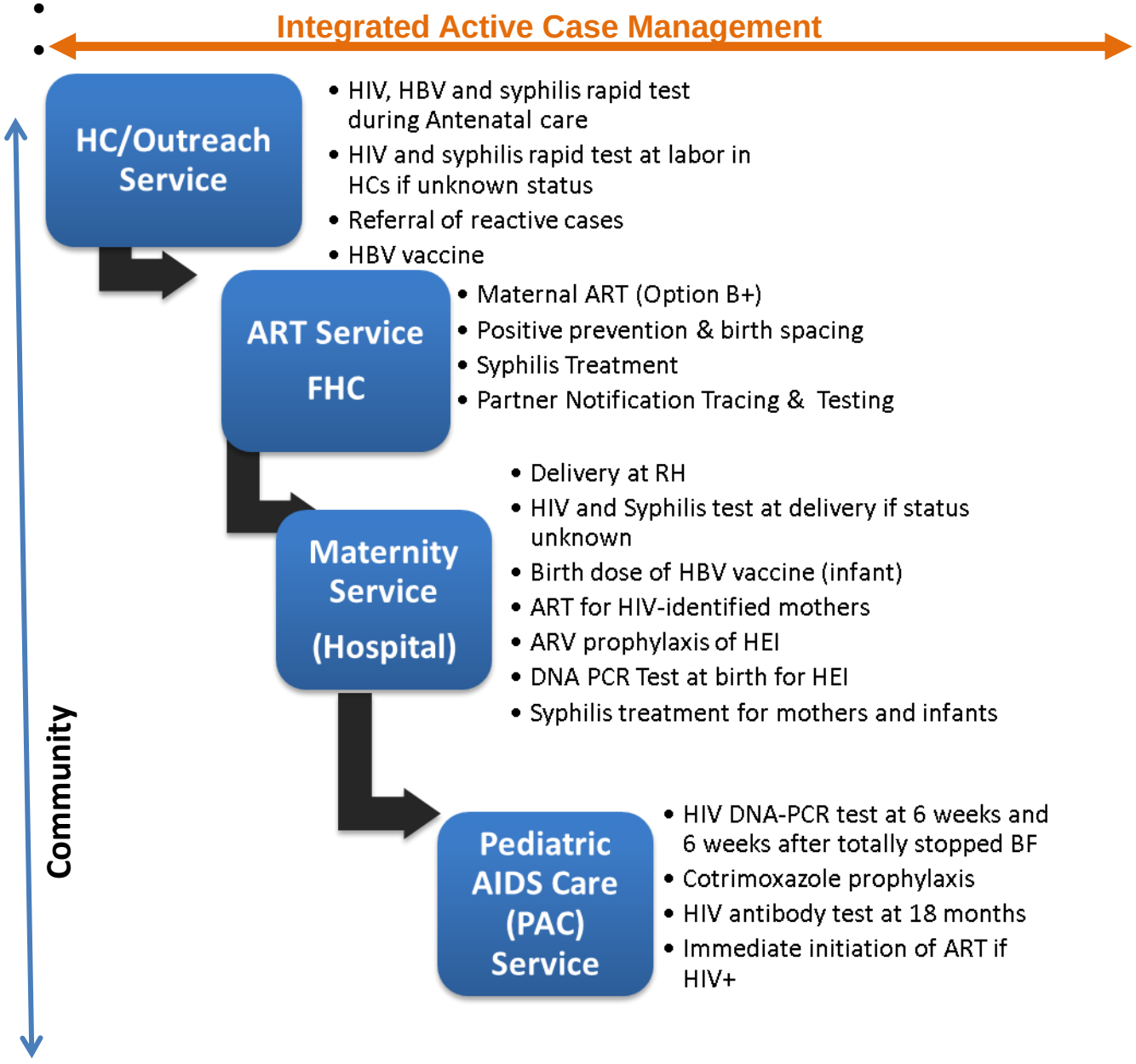
8.3. Linkages along the PMTCT cascade

8.3.1 HIV/STI and MCH Program

Linkages between MCH and HIV/STI services are critical to improve the outcomes of the PMTCT cascade. The integrated active case management (IACM) approach aims to ensure access to comprehensive services for HIV-infected women, their partners and infants, through a strong and effective referral and follow-up mechanisms at PHD/OD levels between MCH and HIV services as well as community-based organizations. It also ensures that syphilis in pregnancy is fully treated, including partner testing and treatment.

All private providers and NGOs who provide services to pregnant women and their infants should screen pregnant women for HIV and syphilis and link every identified HIV or syphilis positive PW and exposed infant to MCH and HIV/STI services to allow provision of the full PMTCT packages.

- Figure3: Service Provision and Linkages for HIV/syphilis along the PMTCT cascade



8.3.2 MCH Program and Hospital Services for Hepatitis

OD MCH Coordinators, in consultation with the PHD, are responsible for determining the best hospital for referral point or women who test positive for HBsAg at ANC and informing all ANC providers. The hospital will conduct an HBeAg rapid test and ALT (or Viral Load if available). If the HBeAg is positive or if HBeAg is negative with ALT is >40or VL is >200,000 IU/ml, the hospital will initiate treatment with tenofovir. As HBV training is rolled out these interventions will become available at all RHs but during the initial roll-out it may sometimes be necessary to refer to a hospital outside the district. After delivery, the woman will need assessment by a physician trained in hepatitis management to determine whether she requires continued antiviral medication for her own health, and this may require referral to a provincial or national hospital.

8.4. Human resources involved in providing PMTCT services:

The following staff are responsible for the coordination and implementation of PMTCT activities:

- Provincial MCH Manager and/or PMTCT Coordinator (in some provinces the MCH Manager and the PMTCT Coordinator are the same person)
- Provincial AIDS and STI Programme (PASP) Manager
- OD MCH and HIV Managers
- MCH staff at Health Centre
- Referral Hospital maternity staff
- HIV staff at VCCT, ART and PAC
- Staff at Family Health Clinics
- Hospital physicians and labs (for HBV)
- PHD/OD CMC and CMA for B-IACM

8.5. Training

Staff involved in providing PMTCT services should receive initial training on HIV/AIDS, MTCT and PMTCT cascade, HTC, Infant and Complementary feeding, PEP, PrEP, Universal Precautions, family planning, Syphilis, HBV, referral for care, treatment and support and Data Management according to MoH PMTCT training curriculum. Other training may be provided as needed. Trainings will be conducted collaboratively by NCHADS and NMCHC.

8.6. Supervision

Joint supervision between the MCH and HIV program is a critical to monitor PMTCT programme performance, and provides objective feedback for programme improvement. In order to ensure the quality of PMTCT service delivery, joint-supervision will be conducted quarterly by district, provincial and national MCH and HIV management teams. Supervision visits should not only aim to mitigate problems but also identify strengths and successes using a standard supervision checklist.

The key objective of supervision is to improve the outcome of PMTCT cascade at OD level through:

- Facilitating a supportive environment.

- Ensuring that high-quality confidential counselling and testing is given to all pregnant women and their partners in the OD.
- Ensuring that HIV, syphilis and HBsAg reactive cases are promptly referred to the right facility and tracked through the full cascade of care.
- Ensuring that appropriate ARV drugs for HEI are available and administered correctly to women at RH maternity wards.
- Ensuring that appropriate ART drugs for HIV+ mother snot already on ART during pregnancy are available and administered correctly to women at RH maternity wards.
- Arranging to supply ARV and ART to HCs in case an HIV+ woman is identified during delivery at a HC.
- Ensuring proper infection control, including the application of Universal Precautions and PEP during delivery.
- Ensuring that all HIV positive mothers and all HEI are immediately and properly referred to near-by /ART clinic and PAC.
- Ensuring that all HIV positive mothers and all HEI are properly referred to community care and support group when possible.
- Ensuring that all syphilis reactive women receive treatment and follow up, including partner testing and treatment to avoid reinfection.
- Ensuring that all infants receive a birth dose of HBV vaccine preferably within 2 hours of delivery and at least within 24 hours.
- Ensuring correct data collection and reporting procedures.
- Improving skills of staff.
- Mitigating problems and identifying solutions.

- Immediate feedback and coaching should be provided to staff on site visits, and an immediate debriefing should be provided to the health facility management team at the end of each supervision visit. An Action Plan should be developed together with HIV and MCH management team for next follow up and improvement.
- Supervision of labs and physicians providing hepatitis services will be conducted by the MoH Communicable Disease Control (CDC) Department.

8.7. Quality Control

All quality control for HIV and syphilis testing and ARV drugs for HIV will be managed by NCHADS and the National Institute of Public Health (NIPH). For more detail see the NCHADs Manual for Quality Assurance in the HIV Testing Service Program.

Quality control for HBV testing materials and drugs (Tenofovir) will be managed by the MoH Communicable Disease Control Department's Hepatitis Program.

8.8. Logistics and Supplies

8.8.1. ARV for HIV

- At the central level, the joint agreement signed by NMCHC and NCHADS clearly indicates the roles and responsibilities for logistic supply management regarding HIV. All supplies should be obtained through the MoH system (CMS, provincial pharmacy and OD pharmacy).
- Maternity wards co-located with ART service will obtain ARV drugs either directly from the ART service or the RH pharmacy upon official request to the RH.
- On a Quarterly basis, the RH pharmacist of the ART clinic makes a report of drug use during the reporting period and makes a request of ARV for drug next quarter to NCHADS through the OD or provincial hospital. Supply will be delivered by CMS to the OD drug store.
- In case of shortage of supplies, the pharmacist of the ART clinic can make a special urgent request to NCHADS to obtain supplies from NCHADS's emergency store.
- In case of an HIV+ delivery at a HC or a RH not co-located with an ART clinic, the midwife should immediately inform the OD or Provincial PMTCT Coordinator to assist in getting a supply of ARV from the nearest ART site.

8.8.2 HIV/syphilis and HBV test kits

- HCs and RHs will obtain test kits from the OD pharmacy and make regular usage reports and requests.
- Requests should be based on the most recent number of ANC1 clients, not prior usage as that would prevent low performing facilities from increasing their coverage.
- Facilities should ensure that the ANC and delivery services at all times have a 1 month buffer stock
- Facilities should take care to follow "First Expire - First Out (FEFO)" rule and use test kits before the expiry date.
- In case of acute short-out, the HC or RH should inform NMCH at once and NMCH will coordinate with NCHADs and CMS to obtain emergency supply.

8.8.3 Dried Blood Spot (DBS) Test Kits

- DBS cards are supplied by NCHADs to PAC sites. Maternity wards in RHs co-located with ART services can obtain cards from the PAC site or the provincial AIDs office. *Hospital maternity services should always keep a few cards on the maternity ward for use in case an HIV+ woman delivers outside of PAC working hours.*

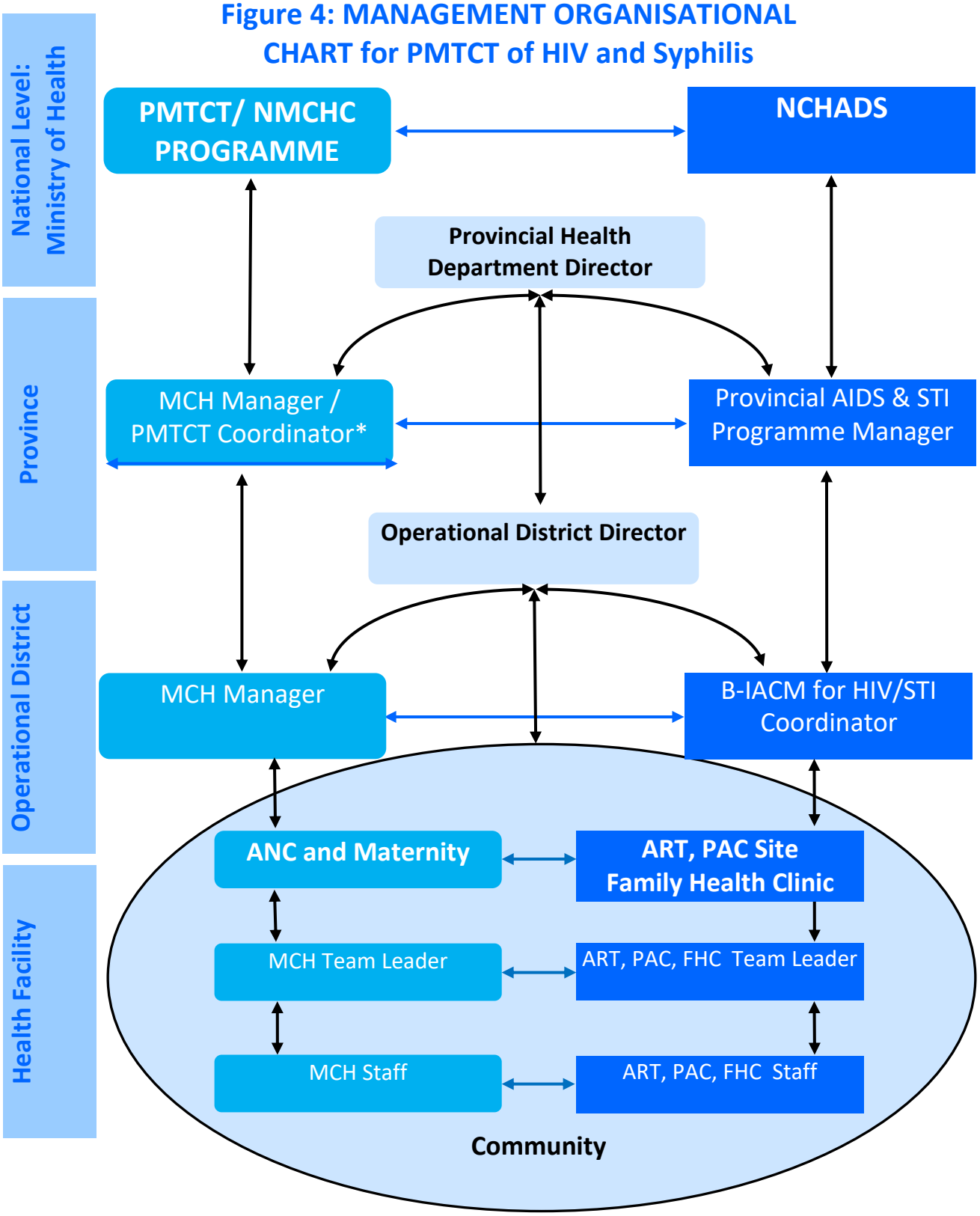
8.8.4 Benzylpenicillin and Aqueous Benzylpenicillin

- Family Health Clinics will obtain these and other STI drugs through normal supply channels, making quarterly report of drug usage and new request through the OD pharmacy.
- Maternity services may obtain benzylpenicillin through the RH pharmacy.
- Maternity services should keep benzathine penicillin and aqueous benzylpenicillin on hand at all times so that syphilis reactive women and syphilis-exposed infants can initiate treatment immediately.

- 8.8.5 Hepatitis B Vaccine

- All HCs and RHs obtain this through the usual vaccine supply chain. The vaccine should always be available in the maternity service to ensure timely dosing after delivery.

Figure 4: MANAGEMENT ORGANISATIONAL CHART for PMTCT of HIV and Syphilis



*In some provinces the MCH Manager and the PMTCT Coordinator is the same person

CHAPTER 9: MONITORING AND EVALUATION

9.1 Recording, Data Collection and Reporting

Health facilities are responsible for recording all HIV, HBV and Syphilis testing on register, referral card, lab form, and mother-infant follow-up forms. They are also responsible for compiling data recorded in facility registers into a monthly report forms which are entered into the HMIS, PMTCT database and relevant NCHADs databases.

HMIS and PMTCT data are entered online; this is usually done by the facility but may in some cases be done by the OD MCH and HIS staff if the facility lacks internet access.

VCCT, ART and PAC data related to PMTCT data are compiled by VCCT/ART staff and submitted to NCHADs.

A complete list of data collected by maternity services at health facility level is contained in the lab form (see Appendix 1), PMTCT referral slip (appendix 2), registers and follow-up sheet to monitor HIV-infected mother and HEI (appendix 3), FP-HIV integration registers (appendix 4), supervision checklist (appendix 5), and report form (see Appendix 6).

9.2 National PMTCT Indicators

National indicators have been developed and updated by the PMTCT TWG to track the achievements of the national PMTCT Programme and to measure progress against national and international targets. These indicators are based on the data collected at and reported by health facilities. The PMTCT programme office of NMCHC is responsible for reporting to the MoH and for providing yearly feedback to provincial and OD MCH/HIV coordinators on progress and performance on key indicators measured against targets. This feedback is used to identify areas for programme improvement. Key PMTCT indicators and their targets are shown in Table 15 together with the numerators and denominators used for the calculation of each indicator.

9.3 Evaluation

The national PMTCT programme is evaluated annually by the MoH, National Programs, PHDs and Development Partners through an Annual Review Workshop. Evaluation is based on existing data, reports and experiences. Regular PHD and OD team meetings should be used to review and use PMTCT data collected at health facilities for PMTCT performance improvement and to identify progress in terms of performance and quality of services, challenges and solutions and to ensure patient tracking.

Table15: Key PMTCT Indicators

INDICATOR			Numerator	Denominator PW=pregnant women	Data Source &Frequency of Reporting
			Indicator = (Numerator / Denominator) x 100		
1	**Proportion (%) of pregnant women who know their HIV status**		# PW who have been tested during this pregnancy plus #PW already known HIV+ before this pregnancy plus # PW tested at time of L&D.	Estimated number of PW	NMCHC PMTCT database and Spectrum estimate Annually
	1.1	% of pregnant women with unknown HIV status attending ANC who were tested for HIV and received their results	# of PW with unknown HIV status tested and received their results at ANC	# ANC 1 clients with unknown HIV status (All ANC1 clients - clients already known HIV+ or already tested negative in this pregnancy)	NMCHC PMTCT database Annually
	1.2	% of pregnant women with unknown HIV status at labor and delivery who were tested for HIV and received their results	# of PW with unknown HIV status at labor and delivery who were HIV tested and received their results	# delivery cases of unknown HIV status (total delivery cases - delivery case with known HIV status)	NMCHC PMTCT database Annually
2	**% of pregnant women reactive on rapid HIV test during ANC or L&D who receive a confirmatory test**		# PW reactive on rapid HIV test during ANC or L&D who receive a confirmatory test	# PW reactive on rapid test during ANC or L&D	NMCHC PMTCT database Annually
3	**% of pregnant women who were tested for syphilis**		# of PW who were screened for syphilis and received their results	# ANC 1 clients adjusted for overreporting[28]	NMCHC PMTCT database Annually
4	**% of pregnant women with syphilis who received treatment**		# of pregnant women with syphilis treated with at least one dose of benzathine penicillin (or a least 10 days of procaine	# of pregnant women with positive syphilis	NMCHC PMTCT database

[28]Subtract the number of ANC1 cases reported as "already tested HIV negative this pregnancy", using this as a proxy for double counted ANC 1 cases

	with penicillin	penicillin)	reactive test who either (1) were RPR positive or (2) did not get RPR test (i.e. exclude reactive cases with a negative RPR from denominator)	Annually
5	**% of HIV-infected pregnant women who received ART during pregnancy to reduce the risk of mother-to-child transmission**	-# of HIV-infected PW received ART. Includes those started before pregnancy, during pregnancy or at labor and delivery	Estimated number of HIV-infected PW	NMCHC PMTCT database and Spectrum estimate Annually
6	**% of infants born to HIV-infected women who received ARV prophylaxis to reduce the risk of mother-to-child transmission**	# of infants born to HIV-infected mothers receiving ARV prophylaxis to reduce the risk of MTCT	Estimated number of HEI (estimated HIV+ PW minus known HEI stillbirth/neonatal death	NMCHC PMTCT database and Spectrum estimate Annually
7	**% of infants born to HIV-infected women receiving a DNA PCR test for HIV at birth.**	# of infants born to HIV-infected women who received a DNA PCR test at birth	Estimated number of HEI (estimated HIV+ PW minus known HEI stillbirth/neonatal death)	NMCHC PMTCT database and Spectrum estimate Annually
8	**% of infants born to HIV-infected women receiving a DNA PCR test for HIV within 2 months of birth.**	# of infants born to HIV-infected women who received any DNA PCR test by the age of 8 weeks. (includes birth DNA PCR and/or 6 week PCR - but avoid double counting of infants who had both).	Estimated number of HEI (estimated HIV+ PW minus known HEI stillbirth/neonatal death)	NCHADS database and Spectrum estimate Annually
9	**% of infants born to HIV-infected women who received an HIV test 6 weeks after the cessation of breastfeeding**	# of breastfed HEI who received an HIV test (PCR or antibody) 6 weeks after the cessation of breastfeeding	Number of HEI who are breastfed (from EID database)	NCHADS database Annually

10	**% of infants born to HIV-infected women receiving a HIV antibody test at 18 months**	# of infants born to HIV-infected women receiving a HIV antibody test from 18 months and above	Estimated number of HEI (estimated HIV+ PW minus known HEI stillbirth/neonatal death	NCHADS database and Spectrum estimate Annually
11	**Estimated Mother-to-child transmission rate for HIV**	Modelled estimate		Spectrum estimate annually
12	**% of infants receive HBV vaccine within 2 hours and 24 hours of birth**	# of infants receive HBV vaccine within 2 hours and 24 hours of birth	reported number of deliveries	HMIS Annually
13	**% ANC clients tested for HBsAg**	ANC clients tested for HBsAg	number of ANC1 client, adjusted for overreporting[29]	NMCHC PMTCT database Annually
14	**% PW positive for HBsAg received further testing to determine risk of perinatal transmission**	# PW tested positive for HBsAg who were tested for HBeAg and ALT or HBV DNA VL	#PW tested positive for HBsAg	NMCHC PMTCT database Annually
15	**% identified PW at risk of perinatal transmission of HBV who receive ARV**	#PW positive for HBsAg and HBV DNA > 5.3 Log $_{10}$ IU/mLorHBeAg +or with ALT>40 who receive TDF to reduce HBV transmission	#PW positive for HBsAg and HBV DNA > 5.3 Log $_{10}$ IU/mLorHBeAg +or with ALT>40	NMCHC PMTCT database Annually
16	**% HBV exposed infants developed HBV from MTCT**	#HBV exposed infants test positive for HBsAg one month after completing immunization series	#HBV exposed infants tested for HBsAg one month after completing immunization series	MoH-CDC

[29]Subtract the number of ANC1 cases reported as "already tested HIV negative this pregnancy", using this as a proxy for double counted ANC 1 cases

APPENDICES

APPENDIX 1: HIV /SYPHILIS TESTING FORMS

1.1 HIV/Syphilis Test Result at HC (ANC) and maternity ward

Ministry of Health

HIV/Syphilis Test Results

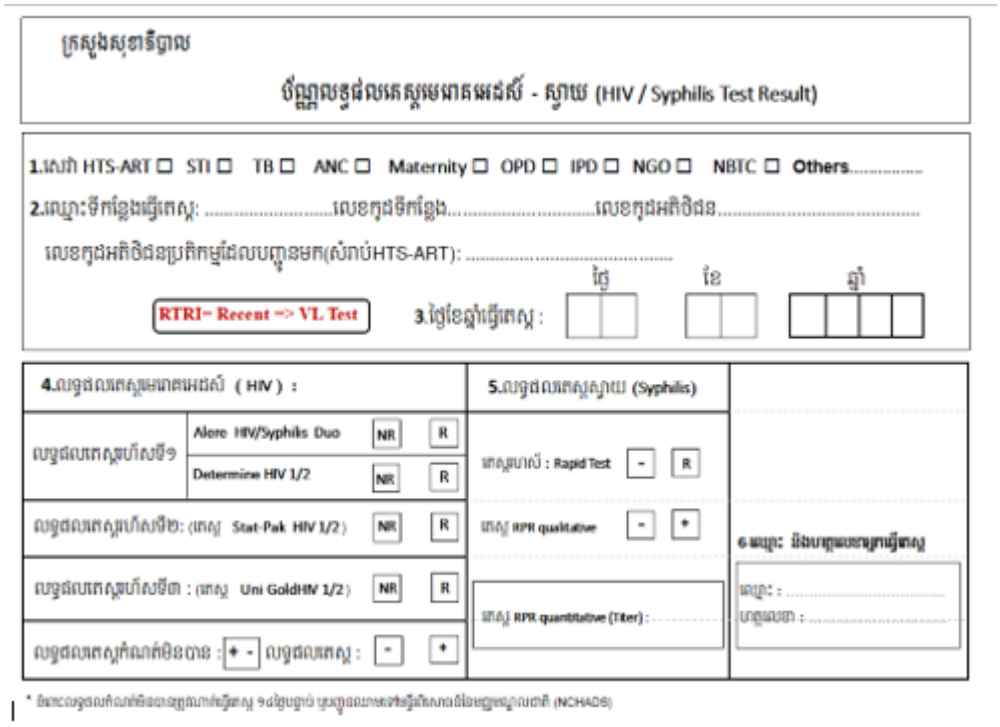
1-Service: VCCT ☐TB☐ ANC ☐ Maternity☐ OPD☐ IPD☐ Others☐.....

2-Site Name:.....Site Code.....Client Code.....

3-Date of Testing:.....

HIV Test Result	Syphilis Test Results	
Determine (first test) ☐	Determine (first test) ☐	
Stat-Pat (second test) ☐	RPR qualitative ☐	Name and Signature of Tester
Uni-Gold (third test) ☐	RPR quantitative	Name:.....
Testing Results ☐	Titre:.....	Signature:.....

1.2 HIV test results (VCCT)



ក្រសួងសុខាទិប្បាល

បណ្ណលទ្ធផលតេស្តមេរោគអេដស៍ - ស្វាយ (HIV / Syphilis Test Result)

1.សេវា HTS-ART ☐ STI ☐ TB ☐ ANC ☐ Maternity ☐ OPD ☐ IPD ☐ NGO ☐ NBTC ☐ Others.....

2.ឈ្មោះទីកន្លែងធ្វើតេស្ត: .....លេខកូដទីកន្លែង.....លេខកូដអតិថិជន.....

លេខកូដអតិថិជនប្រភេទម្ដងដែលបញ្ជូនមក(សំរាប់HTS-ART): .....

RTRI= Recent => VL Test

3.ថ្ងៃខែឆ្នាំធ្វើតេស្ត: ថ្ងៃ ខែ ឆ្នាំ

4.លទ្ធផលតេស្តមេរោគអេដស៍ (HIV) :				5.លទ្ធផលតេស្តស្វាយ (Syphilis)		
លទ្ធផលតេស្តហ៊ីសទី១	Alere HIV/Syphilis Duo	NR	R	តេស្តរហ័ស : Rapid Test	-	R
	Determine HIV 1/2	NR	R			
លទ្ធផលតេស្តហ៊ីសទី២: (តេស្ត Stat-Pak HIV 1/2)		NR	R	តេស្ត RPR qualitative	-	+
លទ្ធផលតេស្តហ៊ីសទី៣ : (តេស្ត Uni GoldHIV 1/2)		NR	R	តេស្ត RPR quantitative (Titer) :		
លទ្ធផលតេស្តកំណត់មិនបាន : + -		លទ្ធផលតេស្ត :	- +			

6.យោបល់ លើលទ្ធផលតេស្តធ្វើតេស្ត

យោបល់ : .....

ហត្ថលេខា : .....

* ចំពោះលទ្ធផលកំណត់មិនបានឱ្យណាត់ធ្វើតេស្ត ១៨ថ្ងៃបន្ទាប់ ឬបញ្ជូនលោកអ្នកទៅធ្វើតេស្តបន្ថែមនៅមន្ទីរពេទ្យ (NCHADS)

1.3 Referral Form for HIV and Syphilis Confirmatory Testing at VCCT /FHC

Referral Form for HIV and Syphilis Confirmatory Testing at VCCT /FHC

No:.....

1-Referred from (Name and code number of HC/

RH/NGO):.....

District name.....province.....

2-Client´s code number.....Telephone No.....

3-Client´s name.....Sex.....Age.....

4-Referred to (circle on) HIV and Syphilis:

- Name and code number

VCCT:.....

- Name and code number

FHC :.....

5-Date of first test reactive for HIV, Syphilis (Reactive Result):.....

6-Informed to CMC/CMA: ☐ Yes ☐ No

7- Signature and name of referrer: .....Telephone No.....

APPENDIX 2: PMTCT PRE-REGISTERS SLIP (Salakbat)

2.1 Pre-register of HIV-Infected Pregnant Women at Maternity Form (For Maternity Referral Hospital)

PMTCT Code No:_____

ART Code No:_____

1. Name of Pregnant women .....age.....occupation.....

   Address.....

   Number of Gravida ☐ Number of Parity ☐ Number abortion ☐

   Last menstruation period .....Date of Expected Delivery.....

   Date of HIV testing.....Date of receiving result.....

   Place of blood testing.....

   Referred from: ART clinic ☐ HC ☐ Specify name:.....Date.....

Date of delivery.....Time of delivery:.....
sex.....Weight.....Apgar.....
Mode of delviery.....
Feeding option: Breastfeeding ☐ Formula Feeding ☐Others: ☐

2. Name of husband/partner .....age.....occupation.....

   Address.....

   Date of HIV testing.....Result of HIV testing.....

   Place of blood testing.....

2.2 ART Information for HIV-Infected Pregnant Women and HIV-exposed Infants (For Maternity Referral Hospital)

PMTCT Code No:.....ART Code No:.....

Date Admitted Hospital.....Time of labour.....Date.....

Date of delivery.....Baby's weight.....

For HIV-infected Mothers
☐No ART
☐Received ART prior to get pregnant. Date:.....
☐Received ART (Option B+*)during pregnancy. Date:.....
☐Received ART (Option B+) during labor and delivery. Date:.....
☐Received ART (Option B+) at Postpartum period. Date:.....
☐Continue ART for life
Feeding option: Breastfeeding ☐ Formula Feeding ☐Others: ☐

For HIV-exposed Infants			
☐No ARV Prophylaxis			
☐Received ARV Prophylaxis			
ARV Syrup	Quantity	Date and Time given	Others

- *Option B+: TDF (300mg) + 3TC (300mg) + EFV (600mg) One tablet a day

2.3 Pre-Register of HIV-Infected Pregnant Women and HIV-exposed Infants

(For Pediatric AIDS Care enclose with Vaccination Card)

PMTCT Code No:.....ART Code No:.....

Address.....

Date of delivery.....Place of Delivery.....

Name of Baby.....Baby´s weight.....

Delivery Information: Normal delivery ☐ Cesarean Section ☐ Intervention delivery ☐

Gestational age.....Baby´s height.....

Information about HIV-positive status and ARV regimen for HIV-infected mothers	
☐Known HIV-positive got pregnancy ☐ newly HIV-positive at ANC ☐newly HIV-positive at delivery ☐ newly HIV-positive at PNC	
☐No ART	**Remark**
☐Received ART prior to get pregnant. Date:.....	
☐Received ART (Option B+*) during antenatal care. Date:.....	
☐Received ART (Option B+) during labor and delivery. Date:.....	
☐Received ART (Option B+) at Postpartum period. Date:.....	
☐Continue ART for life	
Feeding option: Breastfeeding ☐ Formula Feeding ☐Others: ☐	
Information for HIV-Exposed Infants	
☐No ARV Prophylaxis	
☐Received ARV Syrup. Date:.....	

Signature and Name of reporter

Date:.....

Telephone:.....

APPENDIX 3: PMTCT REGISTERS

3.1 ANC Register

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Series No.	Mother Health Record No.	Name	Age	Address/Phone No.	Referred from	Gravida/Parity/Abortion	Gestation Age in Week	ANC Visits					Folic acid and iron (Prev)	Folic acid and iron (Treat)	Mebendazole
								ANC1	ANC2	ANC3	ANC4	Not as scheduled			

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
TT Vaccination	blood pressure	Danger Sign/Prenancy at risk	HIV,Syphilis and Hepatitis B testing							Blood		Urine		Referred to	Type of payment	Remarks
			HIV/Syphilis status	Pre-test counseling	Blood Sample code No	Date provided test results	HBV test results (HBsAg)	HIV test result	Syphilis Test result	Malaria	Hemoglobin/Hematocrit	Albumin	Sugar			

3.2 Maternity Register

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Series No.	Mother Health Record No.	Name	Age	Address/Phone No.	Referred/transferred from	Date of Admission	Gravida/Parity/Abortion	Diagnosis admission			Mode of delivery	Post-natal intervention						Neonatal Intervention	
								Pre-labor/pregnancy problem	in labor and delivery	post delivery		Date/Time of Delivery	counseling (risk signs for mothers and babies, feeding, hygiene, breastfeeding, and its monitoring plan)	Mebandazole (500mg)	received Folic acid and iron 42 tablets OR 24tablets for treatment)	Tetanus vaccination	counseling on family planning	Vaccination BCG, Hep BO	Monitor breastfeeding method (correct feeding position/complete suction)

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HIV/SYP Test			ART and Syphilis treatment				Discharged Diagnosis							Type of discharge for mother						
								baby												
Blood sample Code No.	HIV/SYP status	HIV/SYP Test in Labor/post-delivery and result	Mother had received ART/syphilis treatment before	Mother received ART/syphilis treatment at labor and delivery	Baby received ART/syphilis treatment	PNC1-PNC2	Mother	Alive		Death		Transfer/refer out	Discharged date/time	Permission	No permission	refer out	death	Length of Stay	Type of payment	Remarks
								Boy	Girl	Boy	Girl									

3.3 PNC Register

1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
							Information about delivery								First Postnatal Care Visit								
Series No.	No.	Mother Health Record No. and clients ID	Name	Age	Address/Phone No.	Referred From	Date and gestation Age in Week at delivery	Place of delivery	Delivered by	Baby			Risks at delivery		Date Admission (#days at PNC)	For Mothers				For Baby			Counseling (hygiene, nutrition, breastfeeding, neonatal care (newborn) risk signs and resuscitation care, family planning, routine health follow-up for mother-baby pair…)
										Sex	<2500g	≥2500g	Mother	Newborn baby		Emergency Signs for Mothers/Treatment	Iron-folic Acid (42tb or 28 Tb for Treatment)	Mebandazole (500mg)	Tetanus (1st-5th Or completed)	Emergency Signs for baby/Treatment	Check for Breastfeed (correct position/correct attachment)	Vaccination (BCG, Hep B, Others)	

24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Following Postnatal Care Visit											Complete Intervention					
Date Admission (# days after delivery)	# of visits (actual visit)	Emergency Signs of mother/Treatment	For Mother		For Baby					Counseling (hygiene, nutrition, breastfeeding, neonatal care (newborn) risk signs and resuscitation care, family planning, routine health follow-up for mother-baby pair…)	Mother	Baby	Referred mother and Baby	Next Appointment	type of Payment	Remarks
			Tetanus (1st-5th or completed)	Iron-folic Acid(treatment only)	Emergency Signs for baby/Treatment	Check for Breastfeed (correct position/correct attachment)	Exclusive BF	Weight baby (increase weight, problems)	Vaccination (OPV, DPT, Others)							

3.4 HC Delivery

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Series No.	Mother Health Record No.	Name	Age	Address/Phone No.	Referred/transferred from	Date of Admission	Delivery History		Refereed for Delivery Outside	Date/Time of Actual delivery	Delivered at home	Type of Delivery		Oxytocin provided (3rd stage of delivery)	complication of delivery		Baby After delivery								HIV/SYP Test			ART and Syphilis Treatment			Date/Time Discharge	Referred mother and baby to	Maternal death	Type of payment	Remarks
							Gravida/Parity/Abortion	Gestation Age in Week				Normal Delivery	Delivered by intervention		Mother	Baby	Alive	neonatal death/stillbirth/baby death	sex	Weight		Breasting rate in first minute	skin to skin contact on mother	Breastfeed in the first hour	Blood sample Code No.	HIV/SYP status	HIV/SYP Test in Labor/post-delivery and result	Mother had received ART/syphilis treatment before	Mother received ART/syphilis treatment at labor and delivery	Baby received ART/syphilis treatment					
																				<2500g	≥2500g														

3.5Register for HIV Testing and counseling for general population

No.	ID Number	Client˝ names	Sex (F, F)	Age	Family Status	Occupation (*)	Address/Telephone	Type of clients)(**)GP,TB,ANC,KP)	HIV (Determine)				HIV status for partners	Refer to VCCT for confirmatory test	Confirmatory test result HIV (+/-)	Remarks
									Date of testing	NR	R	Contact CMC/CMA				
๑	๒	๓	๔	๕	๖	๗	๘	๙	๑๐	๑๑	๑๒	๑๓	๑๔	๑๕	๑๖	๑๗

3.6 PMTCT/LR Follow-up Sheet (Tracking Tool)

3.6.1. HIV Tracking Tool

Name of Health Facility: .....OD: .....Province: .....

Information about HIV-infected Pregnant Women									Information about Antenatal Care			
No	PMTCT Code No.	Name of OD	Date Active Enrollment	Name of HIV-positive pregnant woman	Age	Address/ Telephone number	Contact Person (Tel)	New HIV-positive this pregnancy (Y/N)	Date of 1st ANC	Gestation age at 1st ANC	Expected Delivery Date	Place of ANC
1	2	3	4	5	6	7	8	9	10	11	12	13

Information about ART drugs			Status of HIV-positive PWs	Information about Delivery					
Date ART initiation	ART Code No.	Pre ART Service Code No.		HIV and Syphilis Testing at Labor and Delivery		ART at L&D (Y/N)	Place of delivery	Actual date delivery	ARV prophylaxis for HEI (Y/N)
				before delivery	after delivery				
14	15	16	17	18	19	20	21	22	23

Information about HIV-exposed Infants					Exposed Infant Diagnosis										HEI Outcome	Date ART for HIV-infected infants	HIV-infected infants ART Code No.	Notes
Date PAC register	Name of PAC	HEI Code No.	Name of HEI	Sex HEI	DNA PCR at birth		DNA PCR within 2 months of age		feeding choice at 6 months of age	Date of CTX initiation	DNA PCR at 6 weeks after stop breastfeeding		HIV antibody test at 18 months					
					Date of Sample Collection	Result	Date of Sample Collection	Result			Date of Sample Collection	Result	Date of Sample Collection	Result				
24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42

3.6.1. Syphilis Tracking Tool

INFORMATION OF MOTHER																									
Information about pregnant woman							Number of Children					Treatment history	RPR Testing					Treatment of mother		Delivery Information			Follow up at 6-12 months after treatment			
Name	PMTCT Code No.	PMRS Code No.	Date of getting rapid test	Age	Address/ Telephone number	Gestation age at rapid testing	Livebirth	Stillbirths	Premature	Spontaneous abortion	Induced abortion	History of syphilis treatment	FHC or Organization Name	Code No. provided by FHC or organization	Date of RPR test	RPR test result	Titre	Regiment	Date of treatment	Pregnancy outcome	Date of delivery	Baby' s weight at birth	Date of testing	Titre	Treatment regiement	Date of treatment
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**

INFORMATION OF CHILDREN																										
Evaluation of SEI at birth (RPR1) and Treatment									Testing of SEI at 3 months (RPR2) and treatment								Testing of SEI at 6 months (RPR3) and treatment						Final Outcome		Interview		Remarks
High risk-mother	Sings of congenital syphilis	Date of RPR test	RPR result	Titre (beginning)	Need treatment	Date of treatment	Regiment	Treatment outcome	Sings of congenital syphilis	Date of RPR test	RPR result	Titre	Need treatment	Date of treatment	Regiment	Treatment outcome	Date of RPR test	RPR result	Titre	Need treatment	Date of treatment	Regiment	Final outcome of mother	Final outcome of children	Interview with parents/care taker	Date of interview	
28	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**

APPENDIX 4: FP-HIV INTEGRATION REGISTERS

4.1 Daily Record

1	2	3	4	5	6	7			8				9	10
No.	ART Code No.	Date visit	Name	Age	Sex	Type of patients			Number of methods provided				Others	Appoint Date
						New never use	New ever use	Old	CoC	PoP	Condom	Injectable		

4.2 Target Record

1	2	3	4	5	6	7	8	9											10				1
No.	ART Code No.	Name	Age	Sex	Number children	Address	Date of first initiate FP service	Month given Methods											Number of methods provided				
								1	2	3	4	5	6	7	8	9	10	11	12	CoC	PoP	Condom	Injectable	

APPENDIX 5: SUPERVISION CHECKLIST FOR PMTCT SERVICE (HC and RH)

1. General Information	**Status**	**Comments (Fair, Poor, No)**
1. General Environment: - External facility (Environment Hygiene) - Internal facility (Organization Hygiene)	 Good/Fair/Poor Good/Fair/Poor	
2.Service 24 hours	Yes/No	
3.Organizational Structure (Updated)	Yes/No	
4.Duty Schedule	Yes/No	
5.Shedule for outreach activity on Reproductive Health	Yes/No	
6.Outreach Activity	Yes/No	
7.Staff monthly meeting (see meeting notes)	Yes/No	
8.For HC, monthly meeting with VHSGs (see meeting notes)	Yes/No	
9.Available and utilize of referral card	Yes/No	
10. Staff accompany patients when referred out	Yes/No	
11. Staff receive feedback(results) of the referral case (s)	Yes/No	
2. Antenatal care	**Status**	**Comments (Fair, Poor, No)**
- Available and use of Mother's Health Record - Weight women - Height women - Vital sign (take blood pressure pulse temperature) - Check for anemia signs - Check for edema signs - Examine womb (through Leopold technique) - listen for fetal heat - take history of risks signs - provide iron folic-acid - provide tetanus vaccination - Provide mebendazole - educate birth preparation - encourage pregnant women to delivery at HC or RH - inform the date for next appointment	Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No	
3. Equipment, Instruments, Materials for RHs and Testing	**Status**	**Comments (Fair, Poor, No)**
<u>Materials for counseling</u>: - Penis Model - Male and Female condom - IEC (Poster, flipchart, leaflet...) - Referral cards - registration logbook - Registers: ANC, Maternity, Gynecology, Delivery	 Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No	

<u>Materials for birth spacing:</u> - Family planning card (client's card for pill, injectable, IUD, appointment card, clinic card) - Materials for IUD:.....Sets - Materials for Implant:.....Sets - Autoclave/sterilizer - self-inflating bag and masks (adult) - self-inflating bag and masks (newborn sized 0 and 1) - Emergency kit for pre-eclampsia-eclampsia - Emergency kit for hemorrhages after delivery	Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No	
<u>Materials for blood and urine testing and QA/QC of HTC</u>: - marker pen for writing code number - Lab order forms - Hemocue Machine - Safety box - Gloves (short, long, sterile, non-sterile gloves) - Alarm clock for testing - Temperature monitoring sheet - Lab forms: result card, appointment card, referral card - QA/QC forms: IQC, EQC - Panel specimen - Lancets - Capillary tubes - pen - plastic bag - Plate - dry cotton ball/gauze - wet cotton ball/gauze - absorbent tissue	Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No	

Equipment and materials for delivery:		
- Lithotomy	Yes/No	
- Stethoscope	Yes/No	
- Sphygmomanometer	Yes/No	
- Fetal stethoscope	Yes/No	
- Thermometer	Yes/No	
- Doppler	Yes/No	
- Hand suction device for newborn	Yes/No	
- cord clamp or tie	Yes/No	
- artery forceps or clamp	Yes/No	
- gauze or cotton (sterile/non-sterile)	Yes/No	
- sterile blade or scissors to cut cord	Yes/No	
- Scissors episiotomy: Number:	Yes/No	
- Cord clamp or tie	Yes/No	
- Dissecting Forceps:.....sets	Yes/No	
- Sterile blade to cut cord:.....	Yes/No	
- Scissors episiotomy:.....	Yes/No	
- Narrow forceps	Yes/No	
- Long sterile for manual removal of placenta	Yes/No	
- apron	Yes/No	
- boot and waterproof foot ware	Yes/No	
- disquert forceps (Porte aiguille)	Yes/No	
- suture materials for repair of tears or episiotomy	Yes/No	
- Baby scale	Yes/No	
- Mother scale	Yes/No	

Materials for Infection Control:		
- soap	Yes/No	
- clean water supply	Yes/No	
- Nail brush or stick	Yes/No	
- clean towels	Yes/No	
- Instrument sterilizer	Yes/No	
- Jar for forceps	Yes/No	
- Forceps for intermediary	Yes/No	
- Tape test/scot test	Yes/No	
- Big bowl for soaking used instruments	Yes/No	
- Green waste bins (for non-infectious waste)	Yes/No	
- Yellow waste bins labels black color (for infectious waste)	Yes/No	
- Yellow waste bins labels red color (for placenta or organs)	Yes/No	
- Safe box (for sharp objects)	Yes/No	
4. STOCK	**Status**	**Comments (Fair, Poor, No)**
Drugs for safe motherhood:		
- Iron / Folic Acid	Yes/No	
- Oxytocin	Yes/No	
- Mebendazole	Yes/No	
- Vitamin K1(for baby)	Yes/No	
- Magnesium sulfate	Yes/No	
- Pomate Tetracycline	Yes/No	
- Calcium Gluconate	Yes/No	
- Additional For RH:	Yes/No	
- Hydralazine	Yes/No	
- Diazepam	Yes/No	
- Ergometrine	Yes/No	
- Pomate Tetracycline	Yes/No	
- Cytotec/ Misoprostol	Yes/No	
- cART (Option B+)= TDF 300mg + 3TC 300mg + EFV 600mg (1 tablet a day)	Yes/No	
- Nevirapine (Syrup)	Yes/No	
- Penicillin injectable for Syphilis-Exposed babies	Yes/No	

Any items have out of stock in the last 3 months? Had been solved successfully, how?..... <u>Reagent for Blood and Urine Testing:</u> - Determine Tests (dual test HIV, Syphilis) - Determine HIV ½ - Syphilis Determine tests - Anemia tests - Albumin, glucose tests - Pregnancy tests - Hemocue machine - Chase buffer for HIV and Syphilis Any items have out of stock in the last 3 months? Had been solved successfully, how?..... <u>Birth Spacing Methods:</u> - COC - POP - injectable - EC - IUD - Implant - Condom Any items have out of stock in the last 3 months? Had been solved successfully, how?	 Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No	

5. Antenatal care	Status	Comments (Fair, Poor, No)
- pretest counseling individually - pretest counseling in couple - pretest counseling in group - Explain about testing process, benefits of test perform, and the meaning of the test results (first test) - educate about infant feeding choice - educate about family planning - counsel on other topics - utilization of partograph	Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No	
6. Blood Testing	**Status**	**Comments (Fair, Poor, No)**
At ANC		
- Available HIV, Syphilis dual tests at ANC, and delivery - all pregnant women got test at their ANC1 - all pregnant women of unknown HIV status presenting at delivery got test - all reactive PW tested at delivery were given ART through Connecting CMC/CMA	Yes/No Yes/No Yes/No Yes/No	
Additional For Maternity RH		
- Screening for unknown HIV status among PW presenting at maternity following the PMTCT national guideline - Counseling and testing to all PWs who are unknown HIV status - Counseling and testing to all PWs who are unknown HIV status - Providing ART to all newly HIV-identified reactive or positive PWs at maternity and/or to the known HIV status who are not on ART - Pre-register of HIV-infected mothers HEIs at ART Clinic for continuing ART treatment and other further assessment before discharge hospitals	Yes/No Yes/No Yes/No Yes/No Yes/No	

- Providing ARV Prophylaxis to all HIV-Exposed infants - Providing Penicillin injectable to Syphilis-exposed newborn baby - Pre-register of HEIs at PAC for continuing ART treatment and other further assessment - Pre-register of SEIs at FHC for further syphilis management and follow-up	Yes/No Yes/No Yes/No Yes/No	
7. Blood Testing Analysis:	**Status**	**Comments (No, Fair, Poor)**
- Adequate materials preparation before testing - Clients' information and testing code number done before testing - Massage on palm and selected finger before testing - Correcting technique on pricking finger - Obtaining enough blood sample for HIV, Syphilis testing - Correcting interpretation test result - Completing recording test result	Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No	
8. Providing Test Result	**Status**	**Comments (No, Fair, Poor)**
- Verifying testing code number before giving result - Reviewing risk assessment on each client - Proving test results regardless of negative or reactive case correctly - Counseling to keep clients' staying negative - Counseling about HIV testing on partners especially the partners of reactive case - Counseling about Family Planning - Counseling to HIV-infected PW to get deliver at a hospital with PMTCT service	Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No	
9. HIV and Syphilis Quality Assurance and Quality Control	**Status**	**Comments (No, Fair, Poor, Incorrect)**
- Perform internal quality control, how often..... - Perform External quality control, how often.....	Yes/No Yes/No	
10. Urine Test	**Status**	**Comments (No, Fair, Poor, Incorrect)**

- Performing Albumin Test and Glucose - Performing pregnancy Test	Yes/No Yes/No	
11. TB Screening	**Status**	**Comments (No, Fair, Poor, Incorrect)**
- Screening TB symptoms on every pregnant woman	Yes/No	
12. Malaria Screening	**Status**	**Comments (No, Fair, Poor, Incorrect)**
- Screening malaria on every pregnant woman	Yes/No	
13. Gynecological Examination	**Status**	**Comments (No, Fair, Poor, Incorrect)**
- Screening for vaginal discharge - For those who diagnosed STI, their partner (s) been notified and referred for treatment	Yes/No Yes/No	
14. Referral System	**Status**	**Comments (No, Fair, Poor, Incorrect)**
- Referring HIV reactive PW to VCCT for confirmatory test - if she is confirmed positive, she is provided ART - Referring Syphilis reactive PW to FHC for confirmatory test - if RPR test confirmed positive, PW is provided Syphilis Treatment - Connecting or learning HIV-infected PWs to be part of community support group - Receiving feedback (result) on referral cases from places the clients are sent to - Following up HIV-positive PWs delivered at maternity of RH	Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No	

15. Recording and Reporting	Status	Comments (Correct some, Incorrect)
- Filling on ANC register	Yes/No	
- Close off ANC register at end of month	Yes/No	
- Complete report of ANC at the end of month	Yes/No	
- Filling on mother's health record	Yes/No	
- Filling on the maternity register	Yes/No	
- Close of the maternity register at end of month	Yes/No	
- Complete report of maternity at the end of month	Yes/No	
- Filling on Partograph Form	Yes/No	
- Filling on the PNC register	Yes/No	
- Close off register at the end of month	Yes/No	
- Complete report at the end of month	Yes/No	
- Sending report out to OD on time	Yes/No	
16. Delivery and PNC	**Status**	**Comments (Correct some, Incorrect)**
- Utilization of partograph	Yes/No	
- Utilization of Oxytocin in the third stage of delivery	Yes/No	
- Utilization eye drop on newborn baby	Yes/No	
- Scaling newborn baby	Yes/No	
- Breastfeed in the first an hour after delivery	Yes/No	
- Encouraging women to have postpartum care	Yes/No	
- Providing Iron-folic acid	Yes/No	
- Providing Mebandazole	Yes/No	
- Providing vaccination to newborn baby	Yes/No	
- Providing Health Education after delivery	Yes/No	
- Educating on Family Planning	Yes/No	

17. Applying Infection Control	Status	Comments (No, Fair, Poor)
- available information or chart of PEP	Yes/No	
- applying hand washing with available materials - Solutions to wash hands before and after examination - the utilization of gloves - Soaking the used instruments in soaping water immediately after use for 10 minutes - clean instruments after soaking - Sterilization materials by autoclave, Etive - Management of instrument sterilizer	Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No	

V. Comments and Suggestions from Site Staff and Managers
…… …… …… …… …… …… …… …… ……

APPENDIX 6: PMTCT REPORTING

6.1 PMTCT Database Report

KINGDOM OF CAMBODIA
National Religion King
Ministry of Health
PMTCT/LR Report Form
Month: ……. Year: 20……

Health Facility Name……District:……Province/City:……

I. Blood testing for PW	TOTAL
1.1. # of ANC 1	
1.1.1. # of ANC1 at ANC facilities	
1.1.2. # of ANC1 at outreach	
1.2. # of ANC 2	
1.3. # of ANC4	
1.4. # of PW at ANC1 already known HIV status during this pregnancy	
1.4.1. # of PW already known HIV-negative	
1.4.2. # of PW already known HIV-positive (“R” Code)	
1. 4.2.1 # of PW on ART before this pregnancy	
1.4.2.2 # of PW started on ART during this pregnancy	
1.4.2.3. # of PW not on ART during this pregnancy	
1.4.2.3.1 # of PW referred to ART	
1.5. # of pregnant women of unknown HIV status who received rapid testing	
1.5.1. # of PW received their test results	
1.5.1.1. # of PW screened reactive	
1.5.1.1.1. # of PW with received confirmatory test	
1.5.1.1.1.1. # of PW with confirmatory test positive	
1.5.1.1.1.1.1. # of PW received ART	
1.6. # of pregnant women who received syphilis rapid testing and result	
1.6.1. # of PW screened reactive	
1.6.1.1. # of PW treated with Benzathine Penicillin G injections	
1.6.1.2..# of partners treated with Benzathine Penicillin G	
1.6.1.3. # PW referred to Family Health clinic for RPR and follow up	
1.7. # of pregnant women tested for anemia	
1.7.1. # of PW with Hb<7g/dl	
1.7.2. # of PW with Hb between 7g/dl and 11g/dl	
1.8. # of pregnant women tested for proteinuria	
1.8.1. # of PW with proteinuria women ≥ ++	
1.9. # of pregnant women screened for HBsAg	
1.9.1. # of PW screened reactive for HBsAg	

1.9.1.1. # of PW received additional testing (HBeAg and ALT) at hospital	
1.9.1.1.1. # of PW positive for HBeAg OR had elevated ALT (>40)	
1.9.1.1.1.1. # of PW receiving ARV (Tenofovir) for PMTCT of HBV	
III. Delivery and Post-Partum Care	
3.1.# of mothers with delivery at health facility	
3.1.1. # of mothers delivered with known HIV status	
3.1.1.1. # of mothers known HIV positive	
3.1.1.1.1 # of HIV positive mothers got any ANC	
3.1.1.1.2 # of HIV-positive mothers on ART During pregnancy	
3.1.1.1.2.1 # of HIV-positive mothers who started ART before this current pregnancy	
3.1.1.1.2.2 # of HIV-positive mothers started ART during this current pregnancy	
3.1.1.1.2.2.1 # of HIV-positive mothers received ART for ≥ 4weeks before delivery	
3.1.1.1.2.2.1. # of HIV-positive mothers received ART for < 4weeks before delivery	
3.1.1.1.3 # of HIV-positive mothers not on ART during this current pregnancy	
3.1.1.1.3.1.# of HIV-positive mothers newly started on ART at labor or after delivery	
3.1.2. # of mothers delivered with unknown HIV status	
3.1.2.1. # of mothers received HIV rapid testing at L&D	
3.1.2.1.1. # of mothers screened reactive	
3.1.2.1.1.1 # of mothers received confirmatory test	
3.1.2.1.1.1.1. # of mothers with confirmatory test positive	
3.1.2.1.1.1.1.1. # of mothers received ART (Option B+) at L&D	
3.1.3 # of mothers with delivery referred to ART clinic before discharge from HFs	
3.1.4 # of delivery mothers with known syphilis status	
3.1.4.1. # of mothers with delivery who are known syphilis positive	
3.1.4.1.1 # of mothers already treated with benzathine penicillin during pregnancy	
3.1.4.1.2 # of mothers treated with benzathine penicillin at labor or delivery	
3.1.4.1.2.2. # partners treated with benzathine penicillin	
3.1.5. # of mothers with unknown syphilis status	
3.1.5.1 # of mothers received syphilis rapid testing	
3.1.5.1.1 # of screened reactive	
3.1.5.1.1.1 # of mothers received treatment (Benzathine Penicillin G injections)	
3.1.5.1.1.2. # of partners received treatment (Benzathine Penicillin G injections)	
3.1.6 # mothers referred to Family Health clinic for RPR and follow up	

3.2. # of HIV-exposed babies born from HIV-infected mothers	
3.2.1. # of HIV-exposed babies born to mothers on ART for 4 weeks or more before delivery	
3.2.2. # of HIV-exposed babies born to mothers not on ART during pregnancy or on ART < 4 weeks before delivery	
3.2.3 # of stillbirth and neonatal death (among HIV exposed babies)	
3.3 . #of HIV-exposed babies received PCR test at birth	
3.4 . #of HIV-exposed babies received ARV	
3.4.1. # of HIV-exposed babies received ARV for 12 weeks	
3.4.2 # of HIV-exposed babies received ARV for 6 weeks	
3.4.3 # of HIV-exposed babies received ARV 1 dose NVP only	
3.5 # of HIV-infected mothers received counselling on infants feeding	
3.5.1. # of mothers want to feed their babies exclusive breast milk	
3.5.2. # of mothers want to feed their babies formula milk	
3.6. # of HIV-exposed babies referred (registered) at Pediatric AIDS Care prior to discharge	
3.7 # of Syphilis-exposed babies born from syphilis-infected mothers	
3.7.1. # of babies born from mothers received Benzathine Penicillin G injections at least 30 days before delivery	
3.7.2. # babies born to syphilis positive mothers who were not treated with penicillin during pregnancy or were treated <30 days before delivery	
3.7.2.1.Number of syphilis-exposed babies with stillbirth or neonatal death	
3.7.2.2 Number of syphilis-exposed babies treated for congenital syphilis with benzylpenicillin	
3.8 # of mothers received PNC at least two times (PNC2)	
IV. ABORTION and STILLBIRTH	
4.1. # of spontaneous abortion (miscarriage) (all women)	
4.1.1 # of spontaneous abortion (all women) > 20 week	
4.1.1.1 # of mothers with abortion > 20 weeks already screened for syphilis during this pregnancy	
4.1.1.1.1. # of mothers reactive	
4.1.1.1.1.1 # reactive mothers already treated with benzathine penicillin during pregnancy	
4.1.1.1.1.2 # reactive mothers treated now with benzathine peniccillin	
4.1.1.1.1.2.1.# partners treated now with benzathine penicillin	
4.1.1.2. # of mothers with spontaneous abortion > 20 weeks not tested for syphilis in this pregnancy	
4.1.1.2.1. # of mothers who received syphilis rapid test	
4.1.1.2.1.1 # of mothers screened reactive	
4.1.1.2.1.1.1 # reactive mothers treated with benzathine peniccillin	
4.1.1.2.1.1.2.# partners treated with benzathine penicillin	
4.2 Number of stillbirths (all women)	
4.2.1. # of mothers already screened for syphilis during this pregnancy	
4.2.1.1. # of mothers screened reactive	
4.2.1.1.1. # mothers already treated with benzathine penicillin during pregnancy	
4.2.1.1.2 # of mothers treated now with benzathine penicillin	

4.2.1.1.2.1 # partners treated with benzathine penicillin	
4.2.2. # of mothers not previously tested for syphilis this pregnancy	
4.2.2.1. # of mothers who received syphilis rapid test	
4.2.2. 1.1. # of mothers screened reactive	
4.2.2.1.1.1 # mothers treated with benzathine penicillin	
4.2.2.1.1.2 # partners treated with benzathine penicillin	
V. COMMODITIES:	
REFERRAL HOSPITALS	
5.1. Unexpired Dual HIV/Syphilis test kit in stock	
5.2. Pediatric Nevirapine in stock at maternity ward	
5.3. Pediatric AZT in stock at maternity wards	
5.4. Cards for Dried Blood Sample of HIV-exposed infant in stock at maternity ward	
HEALTH CENTER	
5.1. Unexpired HIV test kit in stock	
5.2. Unexpired Dual HIV/Syphilis test kit in stock	
5.3. HC has Hemocue Unit (if available=1/no=0)	
5.3.1. Hemacue working? (if available =1/no=0)	
5.3.2. HC has unexpired microcuvette (if available =1/no=0)	
5.4. HC has urine test for protein in stock (if available = 1 /no=0)	
VI. HTC TRAINING: HEALTH CENTER	
6.1. # of staff trained in HIV testing and counselling	
6.2. # of midwives trained in HIV testing and counselling	

VI. . COMMODITIES: HEALTH CENTER	
25. Unexpired HIV test kit in stock (yes/no)	
26. Unexpired Syphilis test kit in stock (yes/no)	
27. HC has Hemocue Unit (yes/no)	
27.1. Hemacue working? (yes/no)	
27.2. HC has unexpired microcuvette (yes/no)	
28. HC has urine test for protein in stock (yes/no)	
VII. HTC TRAINING: HEALTH CENTER	
29. # of staff trained in HIV testing and counselling	
29.1. # of midwives trained in HIV testing and counselling	

Date:……./……./20….

Seen and Agreed Reported

6. 2. HTC Quarterly Report for HC

Name of facility		Facility Code	
Name of OD		Provincial/city	
Quarter……		Year	

Before Testing	Number of clients attended pre-test counseling									
	General Population									
	Tuberculosis									
	Pregnant women and partners									
	Total number of clients attended pre-test counseling									
HIV Test Results	Number of Clients tested	Age	HTC							
			GP		TB		PW & Partners		**Total**	
			F	M	F	M	PW	Partner		
	Non Reactiv	≤14								
		15 - 49								
		> 49								
		Total	0							
	Reactive	≤14								
		15 - 49								
		> 49								
		Total	0							
	Total # of clients tested									
Syphilis Test Results	Non Reactive	≤14								
		15 - 49								
		> 49								
		Total								
	Reactive	≤14								
		15 - 49								
		> 49								
		Total								
	Total # of clients tested									
Post-Test	# of Post-Test Counseling	≤14								
		15 - 49								
		> 49								
		Total	0							

Referred for Confirmed Test		VCCT	
		FHC	
		TOTAL	
Date reported			
Reported by			
Approved by			

Submit to Data Management Unit (NCHADS) in 10 days of the next quarter cc OD, PASP, update:25/08/2014