



CLINICAL GUIDELINES PROGRAM

NEW YORK STATE DEPARTMENT OF HEALTH AIDS INSTITUTE | HIV · HCV · SUBSTANCE USE · LGBT HEALTH

New York State Good Practices in Managing Infant Perinatal HIV Exposure

Perinatal Transmission Prevention Guideline Committee, August 2020

Contents

Newborn HIV Testing in NYS	2
ART for Newborns With or Exposed to HIV	3
Initial Postnatal Management	3
Opportunistic Infection Prophylaxis for the Infant	3
Harm Reduction for Breastfeeding	4
Serial HIV Testing	4



New York State Good Practices in Managing the Care of Infants Exposed to HIV in the Perinatal Period

The Perinatal Transmission Guideline Prevention Committee of the New York State Department of Health (NYSDOH) AIDS Institute (AI) Clinical Guidelines Program recommends that clinicians who provide medical care for infants exposed to HIV follow the *Recommendations for the Use of Antiretroviral Drugs in Pregnant Women with HIV Infection and Interventions to Reduce Perinatal HIV Transmission in the United States > Management of Infants Born to Women with HIV Infection* published by the U.S. Department of Health and Human Services (DHHS).

- See the *September 2018 NYSDOH Dear Colleague Letter* that addresses intrapartum antiretroviral therapy (ART)/prophylaxis, neonatal ART prophylaxis, and HIV testing of infants and children younger than 24 months.

LINKS TO DHHS CLINICAL RECOMMENDATIONS

Key topics regarding infants exposed to HIV covered in the DHHS *Recommendations for the Use of Antiretroviral Drugs in Pregnant Women with HIV Infection and Interventions to Reduce Perinatal HIV Transmission in the United States* include the following:

- *Antiretroviral Management of Newborns with Perinatal HIV Exposure or HIV Infection*
- *Diagnosis of HIV Infection in Infants and Children*
- *Initial Postnatal Management of the Neonate Exposed to HIV*
- *Long-Term Follow-Up of Infants Exposed to Antiretroviral Drugs*

In addition to supporting the comprehensive DHHS recommendations, this Committee also encourages that care providers in NYS follow the good practices outlined below.

Newborn HIV Testing in NYS

The NYSDOH strongly advises that all NYS birth facilities use the [pediatric HIV testing services at the Wadsworth Center](#); the services are free of charge for those receiving testing and for NYS clinicians who provide care for HIV-exposed infants.

Diagnosis: HIV nucleic acid testing (NAT) to detect HIV RNA or DNA, which will provide early diagnosis of pediatric HIV infection. Good practice in NYS is to perform NAT testing within 48 hours of birth, at 2 weeks of age, at 4 to 6 weeks of age, and at 4 to 6 months of age. **The NYSDOH strongly advises performance of HIV NAT on all known HIV-exposed newborns within the first 48 hours of life.**

Of HIV-exposed infants in NYS, 2,696 (72%) had a blood specimen collected within 2 days of birth, and there were 18 documented perinatal transmissions from 2010 to 2018. Nearly half of infants with perinatal transmission, 44% (n=8), had a positive NAT result from the specimen obtained at birth [NYSDOH 2020].

Confirmatory testing: When positive HIV NAT results are received for an infant at any age, HIV testing repeated as soon as possible using a new sample will confirm the diagnosis if the infant has HIV. Two independent positive HIV NAT results provide a definitive diagnosis of HIV infection in exposed infants, and subsequent testing is not necessary. Two negative HIV NAT results obtained at ≥ 4 weeks of age and then at ≥ 4 months of age will confirm that an exposed infant does not have HIV.

HIV-2 exposure: Infant exposure to HIV-2 is rare. HIV-2 can be considered if the mother has a reactive HIV antibody screening test result but an unconfirmed diagnosis and HIV-2 has not yet been ruled out with results from an HIV-1/2 discriminatory test. If HIV-2 exposure is suspected in the infant, an HIV NAT that detects HIV-2 can be used to rule out or confirm the diagnosis.

For additional clinical recommendations, see the DHHS guideline section [Diagnosis of HIV Infection in Infants and Children](#).

Expert consultation: Consultation with an experienced HIV care provider is advised when newborns are exposed to HIV during the perinatal period and especially when there are factors that may increase the risk of transmission. These factors include but may not be limited to the following: primary or acute HIV during pregnancy, inconsistent adherence to HIV

medications, viral load ≥ 40 copies/mL, nonadherence to prenatal visits, undocumented HIV viral load within 4 weeks before delivery, undocumented HIV status at time of delivery, or a preliminary positive HIV test result during labor or shortly after delivery. Expert consultation is also advised if intrapartum antiretroviral (ARV) prophylaxis was not administered when indicated, when other ARVs in addition to zidovudine or early discontinuation of prophylaxis are being considered for the infant, or if the mother has acute or primary HIV while breastfeeding.

ART for Newborns With or Exposed to HIV

To reduce the risk of perinatal HIV transmission in exposed newborns, appropriate ARV medications, initiated as close to the time of birth as possible, are indicated. The benefit of ARVs for newborns decreases when initiation is delayed [Wade, et al. 1998; Fiscus, et al. 1999]. ARVs should be administered promptly after delivery, preferably within 6 to 12 hours of birth. ARV regimens may be administered to newborns as prophylaxis, presumptive treatment, or as ART when infection is confirmed.

For clinical recommendations, see the DHHS guideline section *Antiretroviral Management of Newborns with Perinatal HIV Exposure or Perinatal HIV*.

See *Table 6. Newborn Antiretroviral Management According to Risk of HIV Infection in the Newborn* in the DHHS guidelines for an overview of ART management for newborns according to risk of perinatal HIV transmission. Consult a pediatric HIV expert as needed; expert consultation is available at the *National Perinatal HIV Hotline* (1-888-448-8765).

For specific guidance on ART timing, dosing, and duration in newborns, see *Table 7. Antiretroviral Dosing Recommendations for Newborns* in the DHHS guidelines.

Initial Postnatal Management

Parent education about feeding (i.e., avoidance of breastfeeding and pre-mastication of food), diagnostic testing and medical follow-up, ARV administration, and availability of supportive services is an essential component of initial postnatal management for infants exposed to HIV. Also essential is emphasis on the need for serial HIV testing for the infant, along with information on the recommended testing schedule and interpretation of results.

Good practice in NYS is to discharge newborns from care with not just a prescription for ARV medications, but a starting of the ARVs and the tools needed to administer them, such as oral syringes. Ensuring that parents are able to administer medication to their newborn is another essential component of discharge planning. Finally, linkage to care and support services are integral to discharge planning as well.

Opportunistic Infection Prophylaxis for the Infant

Congenital syphilis: Concomitant sexually transmitted infections (STIs), including syphilis, in individuals with HIV are common. Comprehensive STI screening to identify disease is critical because coinfection increases the risk of adverse perinatal and neonatal outcomes, including likely higher rates of in utero transmission. Infants born to individuals with HIV and concurrent STIs require prompt evaluation to exclude the possibility of transmission of additional infectious agents [Adachi, et al. 2018b]. The NYSDOH recommends that clinicians obtain serologic screening for syphilis for pregnant patients with HIV at the first prenatal visit, during the third trimester (28 to 32 weeks of gestation), and at delivery (see the NYSDOH guideline *Management of Syphilis in Patients With HIV > Screening*). No data exist to suggest that infants with congenital syphilis born to individuals with HIV and syphilis require evaluation, therapy, or follow-up for syphilis different than what is recommended for all infants (See *New York State Addendum for Congenital Syphilis Treatment Guidelines*).

***Pneumocystis jiroveci* pneumonia (previously *P. carinii* pneumonia; PCP):** Initiate PCP prophylaxis at 6 weeks of age for all HIV-exposed infants unless HIV diagnostic testing definitively or presumptively excludes HIV infection; if HIV diagnostic testing results are negative by 5 weeks of age, PCP prophylaxis is not necessary.

Congenital cytomegalovirus (cCMV): Congenital cytomegalovirus (cCMV) is the most common intrauterine infection and the leading non-genetic cause of sensorineural hearing loss in children in the U.S. [Grosse, et al. 2017]. One in every 200 infants is born with congenital cCMV infection, approximately 20% of whom will develop long-term health problems such as hearing or vision loss, intellectual disability, seizures, or developmental delay [NYSDOH 2019].

HIV-exposed infants may be at higher risk for acquiring cCMV during pregnancy. HIV infected infants, particularly those who acquired HIV in-utero, are at greatest risk for congenital cCMV. Screening for cCMV is an important component of a comprehensive evaluation needed for HIV-exposed infants, particularly among those born to women not on ARVs during pregnancy [Adachi, et al. 2018a].

The NYSDOH advises clinicians that screening and early diagnosis of cCMV is the NYS standard of care to promote early intervention, monitoring, and medical care that can optimize hearing and developmental outcomes [Marsico and Kimberlin 2017; Rawlinson, et al. 2017; American Academy of Pediatrics 2018].

Care providers should discuss how to reduce the risk of cCMV with pregnant patients. The cCMV infection is common in children, and the virus can be found in especially high amounts in young children’s saliva and urine. Care providers should inform pregnant patients that they can reduce their risk of cCMV by washing hands after changing diapers and by avoiding sharing food, utensils, or cups with a child.

NEW YORK STATE LAW

- New York State law mandates syphilis screening at delivery for all infants. No infant should leave the hospital without the serologic status of the infant’s mother having been determined at least once during pregnancy. See [New York State Addendum for Congenital Syphilis Treatment Guidelines](#) for more information.
- Institutions caring for infants 28 days of age or younger must administer a urine polymerase chain reaction (PCR) test for cCMV, or a diagnostically equivalent test, to any such infant who is identified as, or suspected of, having a hearing impairment, unless the parent of the infant objects. See [New Legislation on Congenital Cytomegalovirus \(CMV\) Testing in Newborns](#) for more information.

For clinical recommendations, see the DHHS guideline section [Initial Postnatal Management of the Neonate Exposed to HIV](#).

Harm Reduction for Breastfeeding

Even in the setting of a suppressed HIV viral load, breastfeeding is not advised for mothers with HIV. However, if cultural factors or an individual’s prior experience make breastfeeding unavoidable, a harm reduction approach is advised. See [NYSDOH Situations Where Breastfeeding is Contraindicated or Not Advisable](#) and [New York State Good Practices to Prevent Perinatal HIV Transmission](#) for more information.

Infant pre-exposure prophylaxis (PrEP) has not been extensively studied in the context of breastfeeding. Care providers should consult an expert in pediatric HIV regarding the use of PrEP in infants who are being breastfed by a mother with HIV. Proposed harm reduction techniques beyond PrEP include exclusive breastfeeding (compared with formula use and breastfeeding combined) and flash-heat treatment of expressed breast milk [Levison, et al. 2014].

For clinical recommendations, see the DHHS guideline section [Initial Postnatal Management of the Neonate Exposed to HIV](#).

Serial HIV Testing

For clinical recommendations, see the DHHS guideline section [Diagnosis of HIV Infection in Infants and Children](#).

References

- Adachi K, Xu J, Ank B, et al. Congenital cytomegalovirus and HIV perinatal transmission. *Pediatr Infect Dis J* 2018a;37(10):1016-1021. [PMID: 30216294] <https://pubmed.ncbi.nlm.nih.gov/30216294>
- Adachi K, Xu J, Yeganeh N, et al. Combined evaluation of sexually transmitted infections in HIV-infected pregnant women and infant HIV transmission. *PLoS One* 2018b;13(1):e0189851. [PMID: 29304083] <https://pubmed.ncbi.nlm.nih.gov/29304083>
- American Academy of Pediatrics. Chapter Section 3: Summaries of Infectious Diseases, Cytomegalovirus Infection. Red Book: 2018 Report of the Committee on Infectious Diseases. American Academy of Pediatrics; 2018. 310-317.
- Fiscus SA, Schoenbach VJ, Wilfert C. Short courses of zidovudine and perinatal transmission of HIV. *N Engl J Med* 1999;340(13):1040-1041; author reply 1042-1043. [PMID: 10189281] <https://pubmed.ncbi.nlm.nih.gov/10189281>

-
- Grosse SD, Dollard SC, Kimberlin DW. Screening for congenital cytomegalovirus after newborn hearing screening: What comes next? *Pediatrics* 2017;139(2):e20163837. [PMID: 28119427] <https://pubmed.ncbi.nlm.nih.gov/28119427>
- Levison J, Weber S, Cohan D. Breastfeeding and HIV-infected women in the United States: Harm reduction counseling strategies. *Clin Infect Dis* 2014;59(2):304-309. [PMID: 24771330] <https://pubmed.ncbi.nlm.nih.gov/24771330>
- Marsico C, Kimberlin DW. Congenital cytomegalovirus infection: Advances and challenges in diagnosis, prevention and treatment. *Ital J Pediatr* 2017;43(1):1-8. [PMID: 28416012] <https://pubmed.ncbi.nlm.nih.gov/28416012>
- NYSDOH. New legislation on congenital cytomegalovirus (CMV) testing in newborns. 2019
https://cdn.hivguidelines.org/wp-content/uploads/20200410150343/CMV_FINAL_1548951720809_0.1.31.19.pdf
[accessed 2020 Jul 29]
- NYSDOH. 2020. Unpublished data.
- Rawlinson WD, Boppana SB, Fowler KB, et al. Congenital cytomegalovirus infection in pregnancy and the neonate: consensus recommendations for prevention, diagnosis, and therapy. *Lancet Infect Dis* 2017;17(6):e177-e188. [PMID: 28291720] <https://pubmed.ncbi.nlm.nih.gov/28291720>
- Wade NA, Birkhead GS, Warren BL, et al. Abbreviated regimens of zidovudine prophylaxis and perinatal transmission of the human immunodeficiency virus. *N Engl J Med* 1998;339(20):1409-1414. [PMID: 9811915]
<https://pubmed.ncbi.nlm.nih.gov/9811915>