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

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Contents

Recommended Guidelines

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 During Pregnancy and Interventions to Reduce Perinatal HIV Transmission in the United States > Management of Infants Born to People With HIV Infection published by the U.S. Department of Health and Human Services (DHHS). See the following key topics:

- 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

NYS best practices: In addition to supporting the comprehensive DHHS recommendations, this Committee also encourages that care providers in NYS follow the good practices outlined below and in the September 2018 NYSDOH Dear Colleague Letter that addresses intrapartum antiretroviral therapy (ART)/prophylaxis, neonatal antiretroviral (ARV) prophylaxis, and HIV testing of infants and children younger than 24 months.

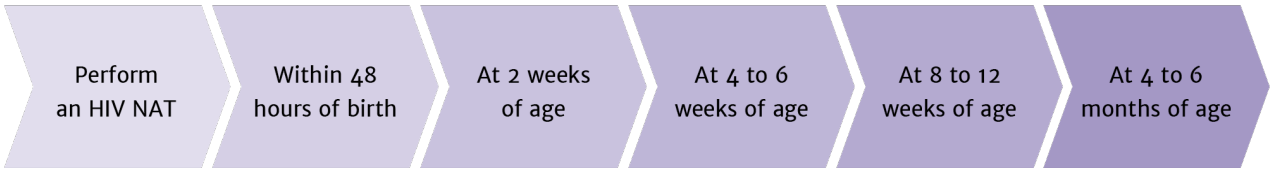
Newborn HIV Testing in NYS

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.

Early diagnosis of pediatric infection: A nucleic acid test (NAT) to detect HIV RNA or DNA will provide early diagnosis of pediatric HIV infection. Good practice in NYS is to perform an HIV NAT test in an infant at the following ages (see Figure below):

- Within 48 hours of birth
- 2 weeks of age
- 4 to 6 weeks of age
- 8 to 12 weeks of age (see *Diagnostic testing within 2 to 6 weeks after completion of ARV prophylaxis*, below)
- 4 to 6 months of age

Figure: NYSDOH Recommended Testing Intervals for Early Diagnosis of HIV in Exposed Infants



Abbreviations: NAT, nucleic acid test; NYSDOH, New York State Department of Health.

Testing for all HIV-exposed infants within 48 hours of birth: The NYSDOH strongly advises performing an HIV NAT for all known HIV-exposed newborns *within the first 48 hours of life*. In NYS, from 2010 to 2018, there were 18 documented perinatal transmissions of HIV, and blood specimens were collected within 48 hours of birth among 2,696 exposed infants (72%). Nearly half of infants (44%; n=8) with perinatal transmission had a positive HIV NAT result from the specimen obtained at birth [NYSDOH 2020].

Diagnostic testing within 2 to 6 weeks after completion of ARV medications: In 2022, a case of perinatal HIV transmission was identified through HIV NAT at 4 months of age following 3 prior negative NAT results (at birth, 2 weeks of age, and 4 weeks of age) [NYSDOH 2022]. The newborn was at high risk of perinatal HIV infection and received a 3-drug ARV regimen for presumptive HIV therapy, which was discontinued at 6 weeks of age. The infant was not exposed to HIV through breast milk, and there was no other postnatal HIV exposure risk. It is well documented that results of plasma HIV RNA NATs or plasma HIV RNA/DNA NATs can be affected by ARV drugs administered to newborns as prophylaxis or presumptive HIV therapy [DHHS 2021; Patel, et al. 2020; Mazanderani, et al. 2018; Veldsman, et al. 2018; Uprety, et al. 2015].

→ KEY POINT

- **For infants at high risk for perinatal HIV infection AND who have received or were recommended to receive a dual or triple ARV regimen:** The NYSDOH *strongly advises* performing a diagnostic HIV NAT within 2 to 6 weeks (i.e., between 8 and 12 weeks of age) after an infant at high risk discontinues a dual or triple ARV regimen for prophylaxis or presumptive HIV therapy.

Confirmatory HIV testing: When a positive HIV NAT result is received for an infant at any age, HIV testing repeated as soon as possible using a new sample is used to confirm a diagnosis of 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. For clinical recommendations, see the DHHS guideline section Diagnosis of HIV Infection in Infants and Children.

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 antibody differentiation 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. Such factors include but may not be limited to the following: primary or acute HIV during pregnancy, inconsistent adherence to HIV medications, HIV RNA (viral load) ≥50 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 ARV prophylaxis was not administered when indicated, when

other ARV drugs 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.

◊ RESOURCES FOR EXPERT CONSULTATION

- **New York State:** Clinicians in NYS can speak with an experienced HIV care provider 24/7 regarding maternal or fetal HIV exposure by calling the Clinical Education Initiative (CEI) Line: 1-866-637-2342, option 2.
- **United States:** National Perinatal HIV Hotline (1-888-448-8765)

ART for Newborns

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 ART for newborns decreases when initiation is delayed [Fiscus, et al. 1999; Wade, et al. 1998]. ART 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 Antiretroviral Management of Newborns With Perinatal HIV Exposure or Perinatal HIV, including Table 8. Newborn Antiretroviral Management According to Risk of HIV Infection in the Newborn and Table 9. Antiretroviral Dosing Recommendations for Newborns.

Initial Postnatal Management

Educating parents about feeding (i.e., avoidance of breastfeeding and premastication of food), diagnostic testing and medical follow-up, ARV administration, and availability of support services is an essential component of initial postnatal management for infants exposed to HIV. Also essential is emphasizing the need for serial HIV testing for the infant and providing information on the recommended testing schedule and interpretation of results.

The NYSDOH AI recommends that HIV-exposed infants be discharged from care with ARV medications in hand, not just a prescription (see the NYSDOH AI guideline HIV Testing During Pregnancy, at Delivery, and Postpartum > HIV Testing During Labor and in Newborns). Good practice in NYS is to also include the tools needed to administer ARV medications, such as oral syringes. Ensuring that parents are able to administer medication to their newborns is another essential component of discharge planning, as is linkage to care and support services.

Opportunistic Infection Prophylaxis for Newborns

☆ 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 test for congenital cytomegalovirus (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 York State Senate Bill S2816B for more information.

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. 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.

***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 is the most common intrauterine infection and the leading nongenetic cause of sensorineural hearing loss in children in the United States [Grosse, et al. 2017]. One in every 200 infants is born with cCMV infection, and approximately 20% of these infants will develop long-term health problems such as hearing or vision loss, intellectual disability, seizures, or developmental delay [NYS Senate 2018].

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

Screening and early diagnosis of cCMV is the NYS standard of care to promote early intervention, monitoring, and medical care that optimizes hearing and developmental outcomes [American Academy of Pediatrics 2018; Marsico and Kimberlin 2017; Rawlinson, et al. 2017].

Care providers should discuss with pregnant patients how to reduce the risk of cCMV. 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.

For clinical recommendations, see the DHHS guideline section Initial Postnatal Management of the Neonate Exposed to HIV.

Harm Reduction for Breastfeeding

Even if their HIV viral load is suppressed, 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.

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