

HELPING BABIES BORN TO HIV-POSITIVE MOTHERS IN SUB-SAHARAN AFRICA STAY HEALTHY AND FREE OF HIV

OVERVIEW

In 2017, an estimated 1.4 million babies were born to HIV-positive mothers and, therefore, exposed to HIV.¹ HIV can be transmitted from a mother to her infant during pregnancy, at the time of delivery, or during breastfeeding. Without any intervention for prevention of mother-to-child HIV transmission (PMTCT), 15-45 percent of HIV-positive women will transmit HIV to their babies, depending on the length of time an infant is breastfed.² By the end of breastfeeding, the proportion of women transmitting HIV to their babies can be lower than 5 percent when effective interventions are used. These interventions include antiretroviral treatment (ART) for pregnant and breastfeeding women to lower the amount of HIV virus in their blood and provision of preventive medications to the baby.

When infants do become infected with HIV, they are at high risk of illness and death. Without ART, up to 30 percent will die by their first birthday and 50 percent by their second³. Because infants progress to AIDS and death much faster than adults, early diagnosis and treatment are critical. The World Health Organization (WHO) recommends that all HIV-exposed infants be tested for HIV no later than four to six weeks of age to identify HIV infection acquired during pregnancy or delivery so that treatment can be started early. Even after a first negative test result, all HIV-exposed infants need to be followed closely throughout the breastfeeding period since the risk of infection remains until they are weaned. Comprehensive care for HIV-exposed infants is key to ensuring infants stay healthy and HIV free.^{4 5}

Comprehensive care for HIV-exposed infants

- **Infant antiretroviral prophylaxis:** Daily oral medications to prevent HIV infection – given from birth up to 12 weeks of age
- **Infant HIV testing:** HIV-testing at regular intervals during breastfeeding to identify infection and start treatment early
- **Cotrimoxazole:** Daily medication (cotrimoxazole) from six weeks of age to prevent illness and death due to diarrhea, malaria, and pneumonia
- **Routine infant care:** Immunizations and regular monitoring of growth and development – failure to thrive can be a sign of HIV infection
- **Monitoring of the mother's health and HIV care:** Ensure mother is taking her treatment and in good health – an infant's health depends on the health of its mother
- **Family support:** Encourage testing of the mother's partner and her other children
- **Drugs to prevent TB:** TB is a common cause of mortality

CDC'S ROLE

The U.S. Centers for Disease Control and Prevention (CDC) is a key implementing agency of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and plays a central role in supporting ministries of health to implement effective, sustainable HIV programs and deliver quality services to HIV-positive mothers and their infants. CDC provides technical guidance and conducts operational research to improve HIV services for mothers and their infants. CDC plays a key role in supporting countries to regularly update their national HIV guidelines so that mothers and infants receive the most up-to-date HIV clinical services, medications, and laboratory services.

To accomplish its mission, CDC works at international, national, subnational, and community levels, in close collaboration with other U.S. Government agencies, and a wide range of global partners including WHO, United Nations Children's Fund, UNAIDS, the Global Fund to Fight AIDS, Tuberculosis and Malaria, partner country ministries of health, civil society organizations, and other local and international nongovernmental organizations. In addition to program implementation, CDC also implements surveillance and research to identify evidence-based strategies that improve health outcomes for mothers and their infants and better understand the HIV epidemic.

CDC is the primary U.S. Government agency supporting laboratories in these countries and has been instrumental in helping them provide state-of-the-art testing for infant HIV diagnosis. CDC helps ensure that programs can benefit from the latest laboratory technologies such as point-of-care testing devices which provide rapid HIV diagnosis and monitoring capacity and which do not need to be placed in centralized laboratories.

¹ UNAIDS. On the Fast-Track to AIDS Free Generation. 2016.

² World Health Organization (WHO). 'Mother-to-child transmission of HIV' [accessed 21 Nov 2016]

³ Newell ML, Coovadia H, Cortina-Borja M, Rollins N, Gaillard P, Dabis F; Ghent International AIDS Society (IAS) Working Group on HIV Infection in Women and Children et al. Mortality of infected and uninfected infants born to HIV-infected mothers in Africa: a pooled analysis. *Lancet*. 2004; 364:1236–43.

⁴ Mulenga V, Ford D, Walker AS, et al. Effect of cotrimoxazole on causes of death, hospital admissions and antibiotic use in HIV-infected children. *AIDS* 2007; 21:77–84.

⁵ Newell ML, Coovadia H, Cortina-Borja M, Rollins N, Gaillard P, Dabis F; Ghent International AIDS Society (IAS) Working Group on HIV Infection in Women and Children et al. Mortality of infected and uninfected infants born to HIV-infected mothers in Africa: a pooled analysis. *Lancet*. 2004; 364:1236–43.

ACCOMPLISHMENTS / RESULTS

Testing HIV-exposed infants: Between 2011 and 2017, PEPFAR increased the number of HIV-exposed infants tested by two months of age by more than 75 percent (from 255,545 in 2011 to 453,780 in 2017), and CDC contributed half (228,561) of these results.

Initiating HIV-exposed infants on medication to prevent HIV-associated infections: In 2015, PEPFAR-supported clinics initiated almost 500,000 infants on cotrimoxazole to reduce illness and death due to diarrhea, pneumonia and malaria. Of these, 231,827 were supported by CDC.

Providing lifesaving treatment to HIV-infected infants: In 2017, over 10,000 HIV-infected infants started treatment before their first birthday at CDC-supported health facilities. CDC has also supported countries to provide the best-available drugs and formulations for infants and children.

Laboratory expertise for infant HIV diagnosis: CDC supports 170 laboratories in 34 countries, which provide infant HIV-testing services. In 2015, these laboratories were able to provide testing for 340,895 infants to receive their first HIV test. CDC collaborated with WHO and laboratories in South Africa to evaluate two new infant testing technologies that are now approved by WHO and improve access to HIV diagnosis for infants.

Technical guidance and national evaluations to improve infant diagnosis: CDC has been a technical leader in infant HIV diagnosis for over a decade. In March 2009, CDC published a series of three guides on infant HIV diagnosis for program managers, laboratory staff, and clinic staff. These guides have been used worldwide in resource-limited settings and are currently being updated to include new advances. CDC conducted national evaluations of HIV-exposed infant programs in Cameroon (2011) and Uganda (2013). Based on the findings, Uganda compiled a database to record all health care worker trainings and conducted more trainings on medical record documentation and adherence to national guidelines. Cameroon developed national laboratory standards for infant diagnosis and strengthened systems for sample transportation. In 2017, CDC launched the HIV-Exposed Infant Care and Testing Toolkit (www.childrenandaids.org/HEI_Toolkit) containing educational tools and videos to support health care workers in providing quality HIV-exposed infant care and infant HIV testing.

FUTURE EFFORTS

CDC will continue to ensure that HIV-exposed infants receive the care they need in order to improve outcomes in this vulnerable population by:

- **Optimizing and improving access to HIV testing for infants born to HIV-infected mothers**
 - Conducting research on how best to use point-of-care testing technologies for infant diagnosis, including how to fit this technology into the existing network of laboratory testing services in countries
 - Supporting countries to provide infant HIV testing services in non-HIV settings such as routine vaccination clinics
 - Conducting research on infant HIV testing at birth to reduce the number of deaths among HIV-infected infants
- **Working with CDC-supported partners to identify models of care that help mothers and infants receive critical services**
 - Supporting family-based models of care that address the needs of the mother and infants on the same day
 - Working with community health workers to provide counseling for mothers and babies who have missed their appointments
 - Conducting rapid assessments of HIV-exposed infant services to better understand the problems and support development of innovative solutions at site, regional and national levels
 - Improving the systems used to monitor the care provided to infants and mothers

BENEFITS OF OUR WORK

As a PEPFAR implementing agency, CDC supports the implementation of evidence-based innovative strategies to engage mothers and babies in care, reduce the rate of mother-to-child HIV transmission, and improve outcomes for HIV-exposed and HIV-positive infants. CDC's work is a critical piece of global efforts to save the lives of thousands of infants and children and ensure that the goal of an AIDS-free generation becomes a reality.