



ELIZABETH GLASER PEDIATRIC AIDS FOUNDATION

## HIV and Breast Milk Transmission in Resource-Limited Settings

Infant feeding in resource-limited settings is a source of controversy and debate in the scientific and public health communities, which makes it an especially important area to study.

Experts estimate that one in three cases of mother-to-child transmission of HIV occur through breast-feeding. While the standard in the U.S. and most developed nations is for HIV-positive mothers to use formula or replacement feeding to minimize risk of transmission, this option is not available or feasible, or may have adverse consequences, in resource-limited settings where it is a challenge to meet infants' basic health and nutritional needs. Researchers and health practitioners search for ways to protect babies from breast milk transmission while giving them the best possible chance to survive and thrive.

Data from ongoing breast-feeding studies – many of which will be presented at the 2007 Conference on Retroviruses and Opportunistic Infections – are beginning to provide clarity about the strategies that can reduce breast-milk HIV transmission while meeting infants' health and nutritional needs.

### Significant Studies at 2007 CROI

Several key presentations and posters on breast milk transmission were supported in part by the Elizabeth Glaser Pediatric AIDS Foundation through the Elizabeth Glaser Scientist Award (EGSA) and International Leadership Award (ILA). A number of these studies raise concerns about health risks associated with early cessation of breast-feeding or "weaning."

**In a study from Zambia**, stopping breast-feeding at four months resulted in a reduction of HIV transmission, although less than anticipated. But this benefit was offset by increased mortality among uninfected infants. In addition, there was a substantial mortality risk associated with stopping breast-feeding early for HIV-infected infants.

**In studies from Kenya, Malawi, and Uganda**, investigators found that rapid and/or early weaning had negative consequences for infant health. These health risks (diarrhea, gastroenteritis) may outweigh the risk of continued HIV exposure from prolonged breast-feeding.

Importantly, none of the aforementioned early weaning studies led to an improvement in HIV-free survival for infants in resource-limited settings – a key goal of the research.

### Public Health Implications

The findings were so significant that the World Health Organization (WHO) recently updated its guidelines for infant-feeding practices for HIV-positive mothers. WHO now recommends "exclusive" breast-feeding for the first six months unless replacement feeding is acceptable, feasible, affordable, sustainable, and safe. With "exclusive" breast-feeding, mothers feed their babies only breast milk for a period of time and avoid giving them any additional food or liquids. At six months, WHO recommends replacement feeding, unless it is still not available and safe, in which case WHO recommends continuing breast-feeding with complementary foods.

In light of current data, the Elizabeth Glaser Pediatric AIDS Foundation strongly supports these recommendations and encourages continued research into breast milk transmission. Ongoing studies in key areas will help identify the best ways to maximize HIV-free infant survival and promote maternal health.

*Every child deserves a lifetime.*



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### Directions for Further Research

Optimizing the health of both HIV-infected mothers and their HIV-exposed infants in resource-limited settings requires careful evaluation of infant-feeding strategies and their consequences. The Elizabeth Glaser Pediatric AIDS Foundation is closely monitoring, and in some cases supporting, research to better understand the science of HIV in breast milk, and to identify optimal infant feeding practices that will minimize HIV transmission while protecting the health of mothers and their infants. Key elements of that research include:

- Antiretroviral Treatment for Mothers and Infants During the Lactation Period. Studies underway now are examining whether highly-active antiretroviral therapy (HAART) taken by mothers during lactation will lower risk of breast milk transmission. There is emerging evidence that combination drug therapy not only protects the mother's health, but also lowers viral load in breast milk. Studies will confirm whether antiretroviral treatment for mothers effectively reduces the risk of infant HIV acquisition while preserving the breast-feeding option for mothers.

Three trials are currently testing the efficacy of maternal HAART in reducing the risk of transmission during breast-feeding. In addition, several studies are providing ART to the HIV-exposed infants in an attempt to decrease this transmission.

- Vaccine Research in a Breast-feeding Population. Studies are beginning to test the effectiveness of a vaccine in infants exposed to HIV through breast-feeding. One study examines whether a vaccine dosed to infants shortly after birth would protect them and allow safe breast-feeding into the second year of life. Allowing for a safe, extended breast-feeding period would ensure adequate growth and better nutrition than the current early weaning strategy. A Phase 1 study of a perinatal vaccine that would help achieve this has just begun in Uganda.
- Additional Basic Science and Prevention Research. In all this work, it is important to remember that the vast majority of infants who breast-feed do not become HIV-infected, despite repeated exposure to the virus over many months or even over their first two years of life. Studies supported by the Foundation continue to examine the components of breast milk that are critical to providing this protection.
- Programmatic and Implementation Research. The foundation also strongly endorses research in the areas of infant feeding counseling, program implementation and monitoring. Among these are critical studies to determine the most effective methods to supporting exclusive breastfeeding and identify safer approaches to rapid weaning.