

# Mother-to-Child (Perinatal) HIV Transmission and Prevention \*

Perinatal human immunodeficiency virus (HIV) is the transmission of HIV from mother to child (vertical transmission). Perinatal HIV transmission may occur during pregnancy, labor, delivery, or breastfeeding. In 1994, research showed that zidovudine (ZDV) given to HIV infected women during pregnancy, during labor and also to the neonate, significantly reduced this type of HIV transmission.<sup>1</sup> It is now known that the combination of interventions including antiretroviral therapy (ART) administered during pregnancy, labor, and delivery and then to the neonate, as well as elective cesarean section for women with high viral loads (more than 1,000 copies/ml), can reduce maternal to fetal transmission to 2% or less.<sup>2</sup>

Improved drug therapies and guidelines that counsel HIV positive women to avoid breastfeeding have drastically reduced the number of perinatal HIV cases in the U.S. If medications are started during labor, decreased rates of perinatal transmission can still be achieved (less than 10%). In the absence of any intervention, rates of mother-to-child transmission of HIV can vary from 15% to 30%, without breastfeeding, and can increase from 30% to 45% with prolonged breastfeeding.<sup>3</sup>

## The Overall Problem in Texas\*\*

Texas has similar patterns of perinatal HIV transmission as have been observed in the United States. HIV-positive women residing in Texas have delivered an estimated 2,800 infants between 2000 through 2007.

Among all infants born to HIV-positive women, there has been a steady reduction from 8% perinatal HIV transmission in 2000 to 1% in 2005 which represents a decline of 81%. (Figure 1) However, the overall reduction in perinatal HIV transmission between 2000 and 2007 was 59%. Perinatal HIV transmission has increased from 2005 to 2007.

## 2007 TEXAS STATISTICS\*\*

### HIV/AIDS

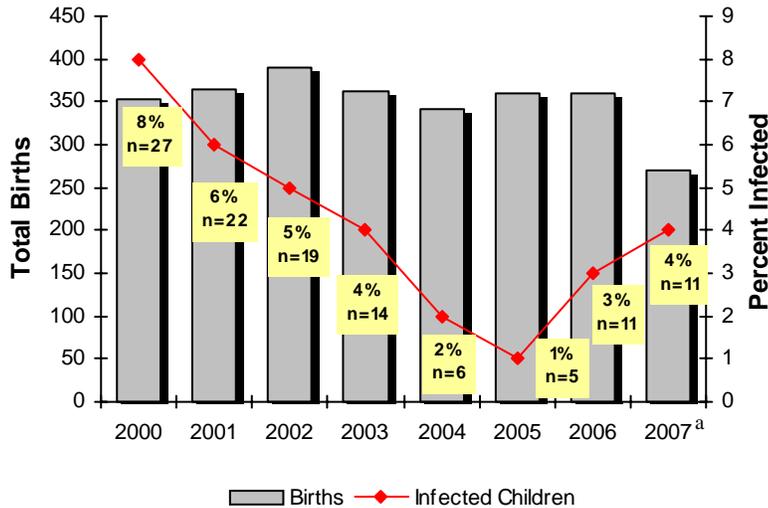
- HIV/AIDS was diagnosed in 18 children less than 13 years old who had been infected with HIV perinatally.
- An estimated 534 persons who had been infected with HIV perinatally were living with HIV/AIDS in 2007.
- Of the perinatally infected persons living with HIV/AIDS in 2007, 56% were Black, 25% were Hispanic, and 18% were White.

### AIDS

Of the 2 children for whom AIDS was diagnosed in 2007, both had been infected with HIV perinatally.

- One person with AIDS who had been infected with HIV perinatally died in 2007. (10 years at the age of death.)

**Figure 1: HIV/AIDS Cases due to the perinatal transmission of HIV infection, by year of birth, 2000-2007, Texas**



<sup>a</sup> There is a lag in reporting of births to HIV positive women for year 2007.

**Table 1: Race/Ethnicity of perinatally exposed children born from 2000-2007, Texas**

Race/Ethnicity	All Infants*	Infected Infants*
Black	1777 (63%)	55 (48%)
Hispanic	652 (23%)	43 (37%)
White	330 (12%)	14 (12%)
Other/Unknown	41 (1%)	3 (3%)

- As of the end of 2007, out of the 328 children who had perinatally acquired AIDS, 182 have died.

### Risk Factors and Barriers to Prevention\*\*

The risk of perinatal HIV transmission can be lessened through preventative factors such as receipt of ART therapy, receipt of prenatal care, avoidance of breastfeeding, and through timing of HIV diagnosis.

#### Lack of Awareness of HIV Serostatus

According to the CDC, "the main risk factor, which is also a barrier to the prevention of perinatal HIV transmission, is lack of awareness of HIV status among pregnant women".<sup>4</sup> CDC estimates that

1 in 5 HIV positive persons do not know they are infected.<sup>5</sup>

- Awareness of HIV serostatus is important in decreasing perinatal HIV transmission. By knowing the woman's HIV status, the provider can recommend proper antiretroviral therapy and assure the woman's HIV clinical status is properly monitored until the birth of the child.
- In Texas, the majority (61%) of HIV positive women knew their status prior to becoming pregnant, 31% of women found out they were infected during pregnancy and 7% did not know they were infected until delivery or after the birth of the child. (Texas, 2000-2007) Although women diagnosed at or after delivery represent only 7% of all women delivering, 33% of their infants

became infected compared to only 3% of infants becoming infected when the mother knew her HIV status prior to delivery. (Texas, 2000-2007)

- Because not all pregnant women know they are infected with HIV, Texas law uses the opt-out approach for HIV testing during pregnancy and at delivery.

### **Lack of Antiretroviral Therapy**

Without antiretroviral therapy, approximately 25% of pregnant women infected with HIV will transmit the virus to their child.

- An estimated 71% of women and their children received antiretroviral therapy (ART) at all three opportunities for intervention (during pregnancy, at labor and delivery, and neonatally by the infant). (Texas, 2000-2007)
- When ART was received at all three periods (n=1942), only 2% of infants became infected with HIV, whereas 18% of infants became infected when ART was not administered at any of the three recommended periods (n=44). (Texas, 2000-2007)

### **Lack of Prenatal Care**

Receipt of prenatal care is also important in preventing HIV transmission to the child because it increases women's adherence to ART and provides an opportunity for women to be tested for HIV. A woman who receives prenatal care is also more likely to receive counseling from her prenatal care provider regarding breastfeeding practices. An estimated 54% of HIV-positive women delivering received adequate or intermediate prenatal care (based on the Kessner Index adequacy of care), and approximately 3% of their infants became infected. Whereas, among HIV-positive women that received inadequate prenatal care, 7% of their infants became infected. (Texas, 2000-2007)

### **Breastfeeding**

Breastfeeding is not recommended in the United States for women who are HIV positive.

- Texas data indicates that for children born in years 2000-2007, the proportion of infected children was 8 times higher among children who were breastfed as opposed to those who were not breastfed.
- Less than 2% of HIV-positive women breastfed their infants between 2000-2007

### **Perinatal HIV Prevention Efforts in Texas**

As part of its perinatal prevention efforts, the Department of State Health Services (DSHS) currently funds 3 HIV services and prevention providers in East Texas: Triangle AIDS Network in Beaumont, Special Health Resources for Texas in Longview, and Health Horizons in Nacogdoches. These programs conduct HIV perinatal prevention activities with clients, the community, and care providers in Health Service Region 4/5 counties\*\*\*, Hardin, Orange, and Jefferson counties. Eight percent (n=216) of all perinatal exposures resided in these counties at the time of birth and 10 of these children have been infected with HIV. (Texas, 2000-2007).

DSHS, the Harris County Hospital District, and the Houston Department of Health and Human Services are currently implementing a rapid HIV testing program at labor and delivery units. By ensuring that women that present for delivery with an unknown HIV status or without documented proof of HIV screening during the third trimester be tested and that results are made available within a few hours, proper ART can be administered both to the mother and child, reducing the risk for perinatal HIV transmission.

DSHS has also been instrumental in formulating a statewide perinatal HIV workgroup composed of different agencies, organizations, and health care professionals. This perinatal HIV work group is known as the Texas Consortium for Perinatal HIV Prevention (TCPHP). The purpose of the TCPHP is to reduce or prevent HIV perinatal transmission in Texas through the collaborative efforts of HIV perinatal champions. Some of the larger goals of the TCPHP are to sustain a network of stakeholders, develop and disseminate standards of care recommendations, develop educational tools, and identify centers of excellence which can be used for referrals and guidance.

## REFERENCES

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## ACKNOWLEDGEMENTS

\*This fact sheet has been modeled after the CDC Fact sheet; Mother-to-Child (Perinatal) HIV Transmission and Prevention, October 2007  
<http://www.cdc.gov/hiv/topics/perinatal/resources/factsheets/pdf/perinatal.pdf>

\*\*Texas specific data provided in this fact sheet are based on data collected through the Enhanced Perinatal Surveillance (EPS) System and the HIV AIDS Reporting System (HARS).

\*\*\*Region 4/5 counties include: Anderson, Angelina, Bowie, Camp, Cass, Cherokee, Delta, Franklin, Gregg, Harrison, Henderson, Hopkins, Houston, Jasper, Lamar, Marion, Morris, Nacogdoches, Newton, Panola, Polk, Rains, Red River, Rusk, Sabine, San Augustine, San Jacinto, Shelby, Smith, Titus, Trinity, Tyler, Upshur, Van Zandt, Wood, Hardin, Jefferson, Orange