

## **PEDIATRIC HIV DISEASE PEDIATRIC SPECTRUM OF DISEASE (PSD)**

Since March 1988, the Los Angeles County (LAC) Department of Health Services has been conducting active surveillance for human immunodeficiency virus (HIV) infection in children under the age of 13 years as part of the Centers for Disease Control and Prevention's national Pediatric Spectrum of Disease (PSD) research project. As of December 31, 1998, with active case ascertainment at the 10 major LAC pediatric referral centers, a total of 1,428 HIV exposed and infected children had been reported to PSD. This number includes 1,240 LAC resident children and 188 nonresident children receiving care in LAC (including those who had died). PSD collects information at baseline, when the child is initially evaluated for HIV, and then every 6 months for the life of the child.

### **CDC CLASSIFICATION**

Of the total 1,428 children reported to PSD, 557 were infected, 813 were exposed but uninfected, and 58 were exposed and of indeterminate HIV status due to the persistence of maternal HIV antibody. Of the 557 infected children, 52% were classified as AIDS,<sup>1</sup> 223 (40%) were symptomatic but not AIDS-defined, and 42 (8%) were asymptomatic. In 1998, 136 HIV-exposed and infected children were reported to PSD of whom 5% had an AIDS diagnosis at last medical contact, an additional 15% were infected but without AIDS, 24% were of indeterminate status, and 57% were uninfected.

### **MODE OF TRANSMISSION**

Among the 615 HIV-infected and indeterminate children, 443 (72%) had a perinatally acquired (PA) infection from an HIV-infected mother, 123 children (20%) were infected from a contaminated blood transfusion, 39 (6%) were children with hemophilia or a coagulation disorder, and 10 (2%) had an other or unknown mode of transmission. Two children were infected due to breastfeeding. Among the PA group, 24% had a mother who was an intravenous drug user (IDU), 12% had a mother who had sex with an IDU, an additional 24% had a mother who had sex with an HIV+ or high-risk male, 5% had a mother infected through a blood transfusion, and 35% had a mother whose risk factor for HIV infection could not be identified. Sexual abuse is suspected as a risk factor for 4 children and confirmed for 1 child.

The proportion of perinatally exposed children whose mother's risk for HIV was IDU has decreased from 42% in 1988-89 to 13% in 1998 (Figure 1). Correspondingly, the number of children infected due to an HIV-infected mother with unknown risk has increased each year from 17% in 1988-89 to 54% in 1998.

## **DEMOGRAPHICS**

Cumulatively, 33% of the HIV infected and indeterminate children were Black, 41% Hispanic, 22% White, 2% Asian, and 1% other/unknown. Of the 136 HIV-exposed and infected children reported in 1998, 40% were Black, 45% Hispanic, and 11% White.

The distribution of HIV-infected and indeterminate children by gender shows slightly more males than females (53% vs. 47%) due to the disproportionate number of transfusion-associated and hemophiliac cases among males.

Most children (72%) had a biologic parent as their primary caretaker at the latest medical contact, 22% lived with another relative or were in foster care, 3% with adoptive parents, and 3% were in other or unknown living arrangements. The PA group was more likely to be living in foster care or with another relative than the transfused and hemophiliacs (27% vs. 5%, respectively). Within the PA group, the Hispanics were the least likely to be in foster care or living with another relative (15% vs. 39% for Blacks and 32% for Whites).

## **CASE FATALITY AND SURVIVAL**

The cumulative fatality rate for AIDS cases was 64% (187/292). Only 3% (9/323) of the children not meeting the AIDS case definition have died. The mean age at AIDS diagnosis for the PA cases was 28 months (median 14.0 months) compared to the mean age at AIDS diagnosis of 87 months for the transfused cases (median 87 months), and 153 months for the hemophiliacs (median 142 months). Estimated median survival from AIDS diagnosis to death or date of last medical contact was 34 months for PA cases and 23 months for the transfused cases (Kaplan-Meier product-limit estimates). Numbers for the hemophiliacs were too limited to make estimates.

Among the 320 HIV-infected and indeterminate children still alive and not lost to follow-up, 14% were less than 2 years of age, 41% were between 2-7 years, 23% were 8-12 years, and 22% were 13 years or greater. Twenty-seven of the 71 children aged 13+ years met the pediatric criteria for AIDS and an additional 18 met the new adult criteria for AIDS with a CD4 count of <200.

## **PRENATAL ZDV AND PERINATAL TRANSMISSION**

Beginning in 1994, zidovudine (ZDV) use during pregnancy, labor and delivery became a recognized means to prevent perinatal HIV transmission. Of the 422 infants born in 1995-1998 to HIV-infected women and reported to PSD, 310 (73%) of their mothers received ZDV during pregnancy. Similarly, 293 (69%) received ZDV during labor and

delivery. Rates of vertical transmission for LAC resident children followed from birth have decreased from a high of 29% in 1990 to 5% in '95, 3% in '97 and 0% thus far for '98. At the same time, receipt of ZDV during pregnancy and/or labor and delivery increased from 59% in 1994 to 92% of the reported infected mothers in 1998 (Figure 2). Overall, however, the rate of HIV transmission is higher because some children are still not being identified at birth. The overall rate of transmission for all children born in 1995-98 and reported to PSD was 10%.

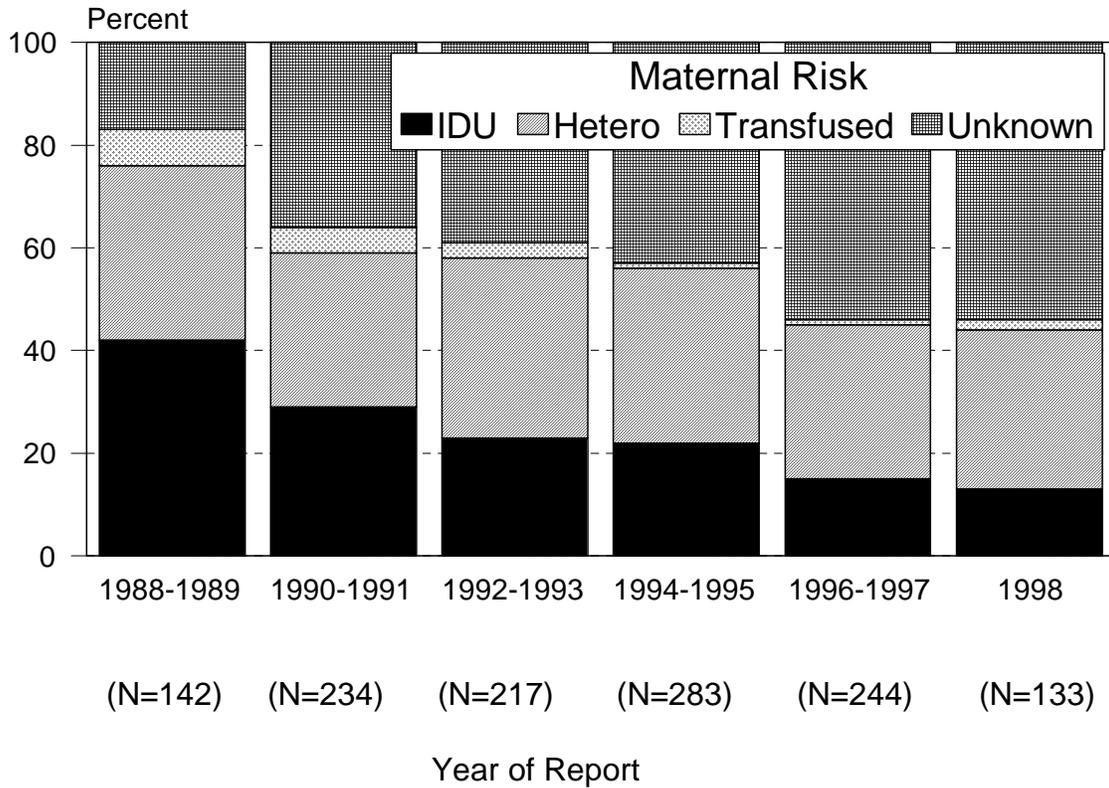
### **UNIVERSAL OFFERING OF PRENATAL HIV TESTING AND COUNSELING**

As of January 1, 1996, all prenatal providers are legally required to offer HIV testing and counseling and document the offering in the patient's medical record. Statistics from 6 health centers who directly report to Acute Communicable Disease Control (ACDC) showed an 81% acceptance rate for 1998. No HIV-positive woman was identified in 1998. ACDC continues to evaluate risk assessment data on pregnant women who test HIV positive. Seventy-eight women since 1989 have been identified in LAC clinics; 56 (71%) reported risk assessment information to ACDC. Twenty-eight (50%) of these women could not identify any known risk factor for HIV infection. Women identified as HIV positive are referred to tertiary care centers to receive specialized care for themselves and their unborn infants.

### **REFERENCE**

1. Centers for Disease Control and Prevention 1994 revised classification system for human immunodeficiency virus infection in children less than 13 years of age. *MMWR*1994;43:RR-12:1-10.

**Figure 1. Maternal Risk for HIV in Children with Perinatally Acquired HIV Exposure by Year of Child's Enrollment Los Angeles County, 3/1988 - 12/1998**



Source: DHS, Pediatric Spectrum of HIV Disease Study

**Figure 2. Rates of Perinatal HIV Transmission and Use of Maternal Zidovudine for HIV-Exposed and Infected Children Identified at Birth by Birth Year**

