PEDIATRIC HIV DISEASE
PEDIATRIC SPECTRUM OF DISEASE

Since March 1988, the Los Angeles County (LAC) Department of Health Services has been conducting active surveillance for HIV infection in children under the age of 13 years. As of December 31, 1996, with active case ascertainment at the 10 major LAC pediatric referral centers, 629 LAC resident children and 113 nonresident children receiving care in LAC (including those who had died) had been reported to the surveillance system.

CDC CLASSIFICATION

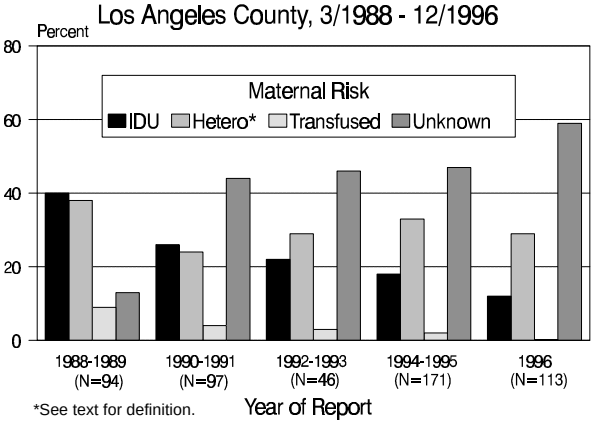
Of the total 742 reported, 265 (36%) were classified as AIDS,[1] 200 (27%) were symptomatic but not AIDS-defined, 30 (4%) were asymptomatic, and 247 (33%) were less than 18 months of age and of indeterminate HIV status because of the persistence of maternal HIV antibody. An additional 421 HIV-antibody-negative children born to HIV-positive women have been reported.

MODE OF TRANSMISSION

Among the 742 HIV-antibody-positive children, 575 (77%) had perinatally acquired (PA) infection from an HIV-infected mother, 120 (16%) were infected from a contaminated blood transfusion, and 39 (5%) were children with hemophilia or a coagulation disorder. There were 16 children transfused prior to 1985 who were first evaluated for HIV in 1991-96. Eight children transfused after 1985 (seven in Mexico and one with a designated donor) have been reported. Two children were infected due to breastfeeding.

Figure 1

Maternal HIV Risk of Children in the HIV-Surveillance Study by Year of Child's Enrollment
Los Angeles County, 3/1988 - 12/1996



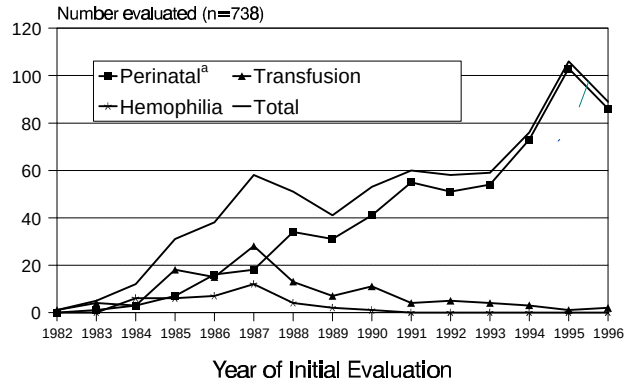
Among the PA group, 22% had a mother who was an intravenous drug user (IDU), 10% had a mother who had sex with an IDU, an additional 22% had a mother who had sex with an HIV+ or high-risk male,

[1]Centers for Disease Control and Prevention. Classification system for HIV infection in children under 13 years of age. *MMWR* 1994;43(RR-12).

3% had a mother infected through a blood transfusion, and 43% had a mother whose risk factor for HIV infection was unknown.

The rate of unknown maternal HIV risk was highest among Black children (51% vs. 20% for Whites and 45% for Hispanics). The proportion of PA infections due to maternal IDU has decreased from 40% in 1988-89 to 12% in 1996. Correspondingly, the number of children infected due to an HIV-infected mother with an unknown risk factor has increased each year from 13% in 1988, to 59% in 1996 (Figure 1).

Figure 2
Pediatric HIV Infection by Year of Initial Evaluation and Mode of Transmission
Los Angeles County, 6/1982-12/1996



[a]Two due to breastfeeding

Since 1988, the proportion of newly reported HIV-infected children with PA infection has increased incrementally each year from 26% in 1988 to 97% in 1996 (Figure 2).

AIDS-DEFINING CONDITIONS

The most common AIDS-defining diagnosis reported was *Pneumocystis carinii* pneumonia (PCP) occurring in 109 (41%) of the 265 AIDS cases. *Mycobacterium avium* complex was the second most frequently reported initial opportunistic infection, occurring in 63 (24%) cases.

Despite the availability and use of preventative treatment since 1991, PCP among perinatally infected children did not begin to decrease in LAC until 1995 and 1996. In 1995, 20% (4/20) of the new AIDS cases reported had PCP and in 1996 only 8% (1/12) of the new AIDS cases had PCP.

DEMOGRAPHICS

Cumulatively, 36% of the HIV-positive children were Black, 41% Hispanic, 20% White, 2% Asian, and 1% other/unknown. The proportion of HIV-positive children who were Black or Hispanic has increased from 61% in 1988-90, to 86% in 1991-96. This increase is due in part to the decrease in new transfusion-associated and hemophiliac children which occurred disproportionately among Whites. Among the 575 children with PA infection, the percentage

of Blacks and Hispanics has increased from 69% in 1988-90 to 87% in 1991-96 (Figure 3).

The distribution of HIV-infected 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.

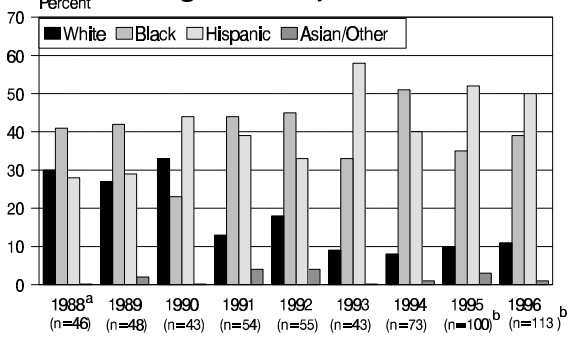
The majority of the 742 HIV-positive children (76%) had a biologic parent as their primary caretaker at the time of report: 18% lived with another relative or were in foster care, 2% with adoptive parents, and 4% were in other or unknown living arrangements. The PA group was more likely to be living in foster care or with another relative than the transfused and hemophiliacs (22% vs. 4%, respectively). Within the PA group, Hispanics were the least likely to be in foster care or living with another relative (13% vs. 31% for Blacks and 27% for Whites). Similarly, children in foster care or living with another relative were more likely to have a mother who was an IDU compared to children living with a biologic parent (51% vs. 13%). Among the PA group, 13% have a mother who has died, with 41% being cared for by the father and another 41% cared for by another relative.

Among the PA group, 64% of the 368 children were evaluated by five months of age. Only 59 (10%) children were three years or older when first evaluated for HIV, with the oldest child being older than 12 years.

CASE FATALITY AND SURVIVAL

The cumulative fatality rate for AIDS cases was 66% (174/265). Only 3% (16/477) of the children not meeting the AIDS case definition have died. The mean age at AIDS diagnosis for the PA cases was 41 months (median 25.0 months) compared to the mean age at AIDS diagnosis of 164 months for transfused cases (median 165 months), and 202 months for hemophiliacs (median 202 months). Median survival from AIDS diagnosis to death or date of last medical contact was 24 months for PA cases and 21 months for the transfused cases (Kaplan-Meier product-limit estimates). Numbers for hemophiliacs were too limited to make estimates.

Figure 3
Pediatric HIV Infection Rates
by Race/Ethnicity and Year Enrolled in Study
Los Angeles County, 1988-1996



[a] Includes all previously diagnosed AIDS cases and all known seropositive children.
[b] Includes exposed children who will later serorevert to uninfected status.

Among the 427 HIV-positive children still alive and not lost to follow-up as of

December 31, 1996, 56% were less than four years of age. The children 10 years of age or older were primarily in the transfusion and hemophilia groups, although 6% of 356 PA children are now 10 years of age or older. Fifty-two adolescents (≥13 years at last medical contact) are currently being followed. Seventeen of these children are pediatric AIDS cases and an additional 13 meet the new adult criteria for AIDS.

UNIVERSAL OFFERING OF PRENATAL HIV TESTING AND COUNSELING

From February to August 1989, LAC conducted a pilot project providing universal, voluntary HIV education and screening to all pregnant women receiving prenatal care at six county health clinics. The success of this project led to its continuance with a maximum of nine clinics participating through 1995. The project demonstrated the feasibility of integrating universal HIV testing and counseling into clinics without disruption of concurrent services. Commencing January 1, 1995, the LAC Board of Supervisors voted to offer mandatory universal prenatal HIV testing and counseling in all LAC clinics, comprehensive health centers and hospitals as standard of care for a prenatal patient. A statewide mandate in the form of SB 889 became law January 1, 1996, legally requiring all prenatal providers to offer HIV testing and counseling and document the offering in the patient's medical record. With the LAC reorganization of public and personal health services, there has been a significant drop in county prenatal clinic attendance. A small sample of health centers that directly report statistics to Acute Communicable Disease Control (ACDC) continue to show 80% acceptance rates. One HIV- positive woman was identified in 1996. The LAC AIDS Program Office, through CDC funding, now oversees data collection to monitor acceptance rates in LAC clinics. ACDC continues to evaluate risk assessment data on pregnant women who test HIV positive. Seventy-six women since 1989 have been identified in LAC clinics, 56 (74%) 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.