

Pediatric & Adolescent HIV/AIDS

*Surveillance Update
New York City*

Data reported through 6/30/2007

HIV Epidemiology Program

TABLE OF CONTENTS

NOTE TO READERS 2

BACKGROUND 3

NEW YORK CITY CHILDREN DIAGNOSED WITH PEDIATRIC HIV/AIDS..... 4

Table 1: Children Diagnosed with HIV Infection Before 13 Years of Age, by HIV Transmission Risk Category and Latest HIV Status, as of December 31, 2006, NYC 4

Figure 1: Children Diagnosed with HIV Infection Before 13 Years of Age (N=3,985), by Year of HIV Diagnosis and Current Vital Status, 1979–2006, NYC 4

Figure 2: Pediatric Cases, Diagnosed with HIV Infection Before 13 Years of Age, Living with HIV/AIDS (N=2,495), by Current Age and Clinical Status, as of December 31, 2006, NYC 5

Figure 3: Number of Deaths of Persons Diagnosed with HIV Infection Before 13 Years of Age (N=1,490), by Age at Death, 1981–2006, NYC 6

NEW YORK CITY NON-PERINATALLY HIV-INFECTED CHILDREN 7

Table 2: Non-Perinatally HIV-infected Children (N=88), by Year of Birth, Current HIV Status and Current Vital Status, as of December 31, 2006, NYC 7

NEW YORK CITY CHILDREN BORN TO HIV-INFECTED MOTHERS..... 8

Table 3: Current HIV Status of Children Born to HIV-infected Women, as of December 31, 2006, NYC 8

Figure 4: Perinatally HIV-infected Children (N=3,895), by Year of Birth and Current Vital Status, 1977–2006, NYC..... 8

Table 4: Demographics of Perinatally HIV-infected Children (N=3,895) and Maternal HIV Risk Transmission Categories, as of December 31, 2006, NYC 9

Figure 5: HIV Risk Factors of Mothers of Perinatally HIV-infected Children (N=3,895), by Year of Infant Birth, 1977–2006, NYC..... 9

Figure 6: Age at HIV Diagnosis of Perinatally HIV-infected Children (N=3,895) by Year of Diagnosis, 1979–2006, NYC..... 10

Figure 7: Age at AIDS Diagnosis of Perinatally HIV-infected Children (N=2,414), by Year of Diagnosis, 1979–2006, NYC..... 11

Table 5: Cumulative Reported AIDS-defining Conditions of 2,414 Perinatally HIV-infected Children with AIDS, by Year of Diagnosis, 1979–2006, NYC 12

TRENDS IN PREVENTION OF PERINATAL HIV TRANSMISSION (NYC SITES)..... 13

Figure 8: Current HIV Classification of Children Born to HIV-infected Women in NYC: A Comparison of NYS DOH Newborn HIV Testing and Comprehensive Newborn Screening Program Data and NYC DOHMH Data at NYC E-PHAS Sites, by Year of Birth, 1988–2005 13

Figure 9: Proportion of HIV-infected Women (N=4,090) who Received Prenatal Care, by Year of Infant Birth, 1997–2005, NYC E-PHAS Sites 14

Figure 10: Prenatal Prescription of Antiretroviral Therapies for HIV-infected Women Known to Have Received Prenatal Care (N=3,274), by Year of Infant Birth, 1997–2005, NYC E-PHAS Sites 14

Figure 11: Infant HIV Infection Status by Prenatal Antiretroviral Therapy for 2,275 Infants Born to HIV-infected Women, 2000–2005, NYC E-PHAS Sites..... 15

Table 6: Perinatal HIV Transmission Rates by Prenatal, Intrapartum, and Neonatal Antiretroviral Use Evaluated for 1,664 of the 2,275 Infants Born 2000-2005, NYC E-PHAS Sites 15

NEW YORK CITY HIV-INFECTED YOUTH DIAGNOSED AT 13-24 YEARS OF AGE 16

Table 7: Demographics of Youth Diagnosed with HIV Infection Between 13 and 24 Years of Age (N=3,596), during 2001-2006, by Current Clinical Status, as of December 31, 2006, NYC 16

NEW YORK CITY YOUTH LIVING WITH HIV/AIDS 17

Figure 12: Males Between 13 and 24 Years of Age Living with HIV/AIDS (N=2,127), by HIV Transmission Risk Category and Current Age, as of December 31, 2006, NYC 17

Figure 13: Females Between 13 and 21 Years of Age Living with HIV/AIDS (N=1,494), by HIV Transmission Risk Category and Current Age, as of December 31, 2006, NYC 17

NOTE TO READERS

This Semiannual Report is published by the HIV Epidemiology and Field Services Program, Pediatric Unit, New York City Department of Health and Mental Hygiene (DOHMH).

To receive this report via e-mail, please send an e-mail request to hivreport@health.nyc.gov.

For electronic versions of this and other HIV-related reports published by the DOHMH, visit: <http://www.nyc.gov/html/doh/html/dires/hivepi.shtml>

Message to Health Care Providers

- HIV-infected individuals are reportable by name in New York State: Article 21 Title III
- AIDS is designated as a reportable condition by New York State Sanitary Code Section 24.1
- All reports are kept confidential as required by New York State Sanitary Code Section 24.2
- If assistance is needed to report a case, or to clarify the CDC AIDS case definition, or for further information, please call (212) 442-3388 or 442-3389

Physician Health Care Provider Hotline

- During business hours, call Provider Access Line at 1-866-NYC-DOH1
- After 5 PM, call the Poison Control Center at 1-800-222-1222
- Provides HIV/AIDS specific information, protocols and guidelines to health care professionals

New York City AIDS Hotline

- Call 1-800-TALKHIV (825-5448) from 9 AM to 9 PM
- Provides counseling, information and referrals to the public and to health care providers
- Assists HIV-infected people in securing referrals for follow-up services
- Refers callers to anonymous HIV testing sites throughout the five boroughs

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BACKGROUND

Pediatric HIV/AIDS surveillance in New York City (NYC) measures trends in prevention of perinatal HIV transmission, trends in perinatal HIV transmission rates, and morbidity and mortality of HIV-infected children who were first diagnosed with HIV infection before 13 years of age. This report contains information on 3,895 children infected through perinatal transmission and diagnosed through December 31, 2006. An additional 88 children were infected through non-perinatal risk (81 through contaminated blood products). Data on 6,976 perinatally HIV-exposed uninfected or indeterminate children from 22 NYC sites are presented with data on trends in perinatal HIV prevention; they represent about two-thirds of such children in NYC. HIV infection status is defined according to the CDC definition (*MMWR 1999; 48 (RR-13): 1-36*) with a modification for presumed uninfected to include children with at least two negative DNA polymerase chain reaction tests between 1 and 3 months of age, one at 2 months of age or older, and no positive HIV diagnostic tests. This report also contains information on 13,493 HIV-infected youth, diagnosed with HIV infection between 13 and 24 years of age, of whom 3,596 were diagnosed during 2001-2006.

Data collection systems from which this report was generated include:

1. Routine AIDS Surveillance: AIDS surveillance began in 1981. Pediatric AIDS refers to AIDS first diagnosed in children before 13 years of age. Adult/Adolescent AIDS refers to AIDS first diagnosed at ≥ 13 years of age.

2. Routine HIV Surveillance: The New York State (NYS) named HIV reporting law took effect on June 1, 2000 and was amended on June 1, 2005. All diagnostic and clinical providers must report diagnoses of HIV infection and HIV illness in a previously unreported individual. Events reportable by laboratories include all positive Western blot test results, all viral load test results [detectable and undetectable (since June 1, 2005)], all CD4 test results (≥ 500 cells/mm³ since June 1, 2005) and all viral nucleotide sequence results (since June 1, 2005).

3. Expanded Pediatric HIV/AIDS Surveillance (E-PHAS): Initiated in 1989 as a special adjunct to AIDS Surveillance, E-PHAS collects data on perinatally exposed children from 22 sites that care for an estimated two-thirds of children exposed to and infected with HIV in NYC. Children are categorized as HIV-infected, with or without AIDS. Uninfected, or indeterminate (which includes children lost to follow-up before determination of their HIV status). Medical records of HIV-exposed and infected children are reviewed periodically. Most perinatally HIV-exposed children are diagnosed as HIV-infected or uninfected by 4 to 6 months of age.

4. Pediatric Spectrum of HIV Disease Project: Ten E-PHAS sites participated in the Pediatric Spectrum of HIV Disease Project (PSD) during 1989-2004. PSD was a CDC-funded, Institutional Review Board-approved longitudinal surveillance project that collected chart review data on children exposed to and infected with HIV.

5. New York City Office of Vital Statistics: Data on mortality are obtained from the NYC Vital Registry. The HIV Epidemiology Program investigates all pediatric deaths in which HIV or AIDS is noted on the death certificates.

6. New York State Health Department, Newborn HIV Testing: Since 1988, NYS Health Department has tested all newborns for HIV, initially as a blinded serosurvey, and since February 1997, through the Comprehensive Newborn Screening Program. Since 1997, data collected through this program are available from the NYS Department of Health, Comprehensive Newborn Screening Program, Annual Summary Report.

Technical note: Prevalent HIV cases, diagnosed before HIV reporting went into effect in NYS, continue to be reported to the DOHMH. Data verification is an ongoing activity. This results in changes in the number of cases reported compared with previous reports.

NEW YORK CITY CHILDREN DIAGNOSED WITH PEDIATRIC HIV/AIDS

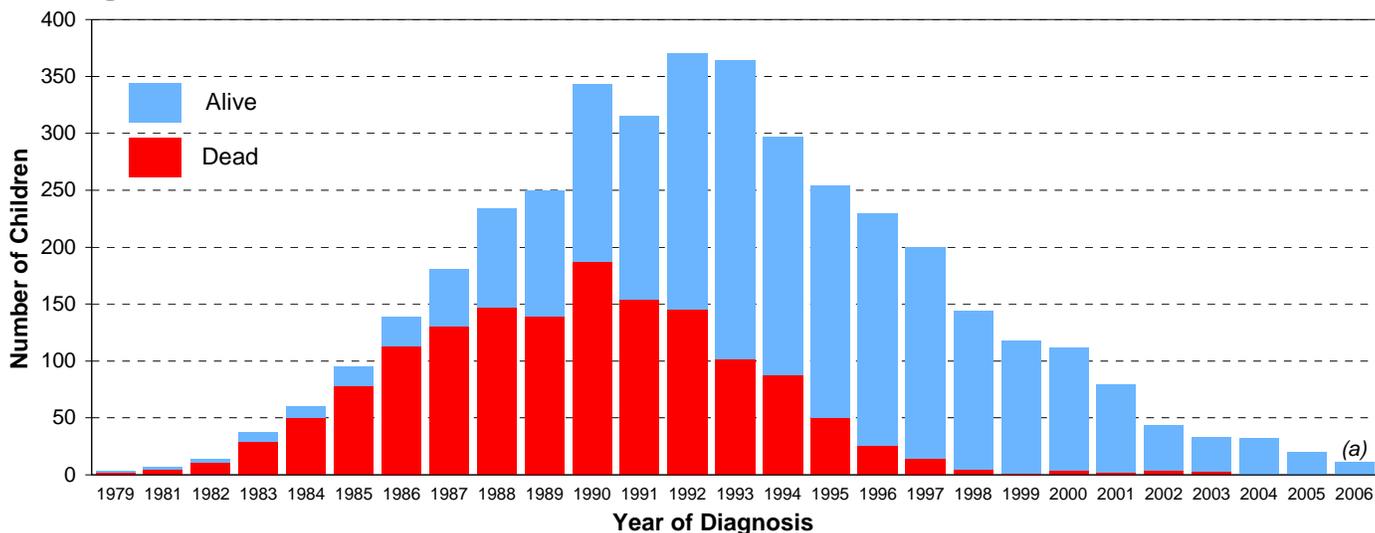
Table 1: Children Diagnosed with HIV Infection Before 13 Years of Age, by HIV Transmission Risk Category and Latest HIV Status, as of December 31, 2006, NYC

| | HIV-infected, non-AIDS | AIDS diagnosed before 13 years | AIDS diagnosed at 13 years or older | Total |
|--|------------------------|--------------------------------|-------------------------------------|---------------------|
| Perinatal HIV Risk^(a) | 1,481 | 2,077 | 337 | 3,895 (98%) |
| Non-perinatal HIV Risk: | | | | 88 (2%) |
| Receipt of blood products ^(b) | 21 | 30 | 30 | 81 |
| Sexual abuse | 4 | 2 | 1 | 7 |
| Pending investigation | 1 | | 1 | 2 (<0.1%) |
| Total (%) | 1,507 (38%) | 2,109 (53%) | 369 (9%) | 3,985 (100%) |

^(a) Sexual abuse was reported in addition to perinatal risk for 17 children.

^(b) Year of diagnosis was between 1983 and 1995 except for one child diagnosed in 1999 in a foreign country.

Figure 1: Children Diagnosed with HIV Infection Before 13 Years of Age (N=3,985), by Year of HIV Diagnosis and Current Vital Status, 1979–2006^(a), NYC



| Vital Status | Year of Diagnosis | | | | | | | | | | | | | | | | | | Total |
|--------------|-------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------------|-------|
| | Pre-1990 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 ^(a) | |
| Alive | 314 | 156 | 161 | 225 | 262 | 209 | 204 | 204 | 186 | 139 | 117 | 108 | 77 | 40 | 30 | 32 | 20 | 11 | 2,495 |
| Dead | 705 | 187 | 154 | 145 | 102 | 88 | 50 | 26 | 14 | 5 | 1 | 4 | 2 | 4 | 3 | 0 | 0 | 0 | 1,490 |
| Total | 1,019 | 343 | 315 | 370 | 364 | 297 | 254 | 230 | 200 | 144 | 118 | 112 | 79 | 44 | 33 | 32 | 20 | 11 | 3,985 |

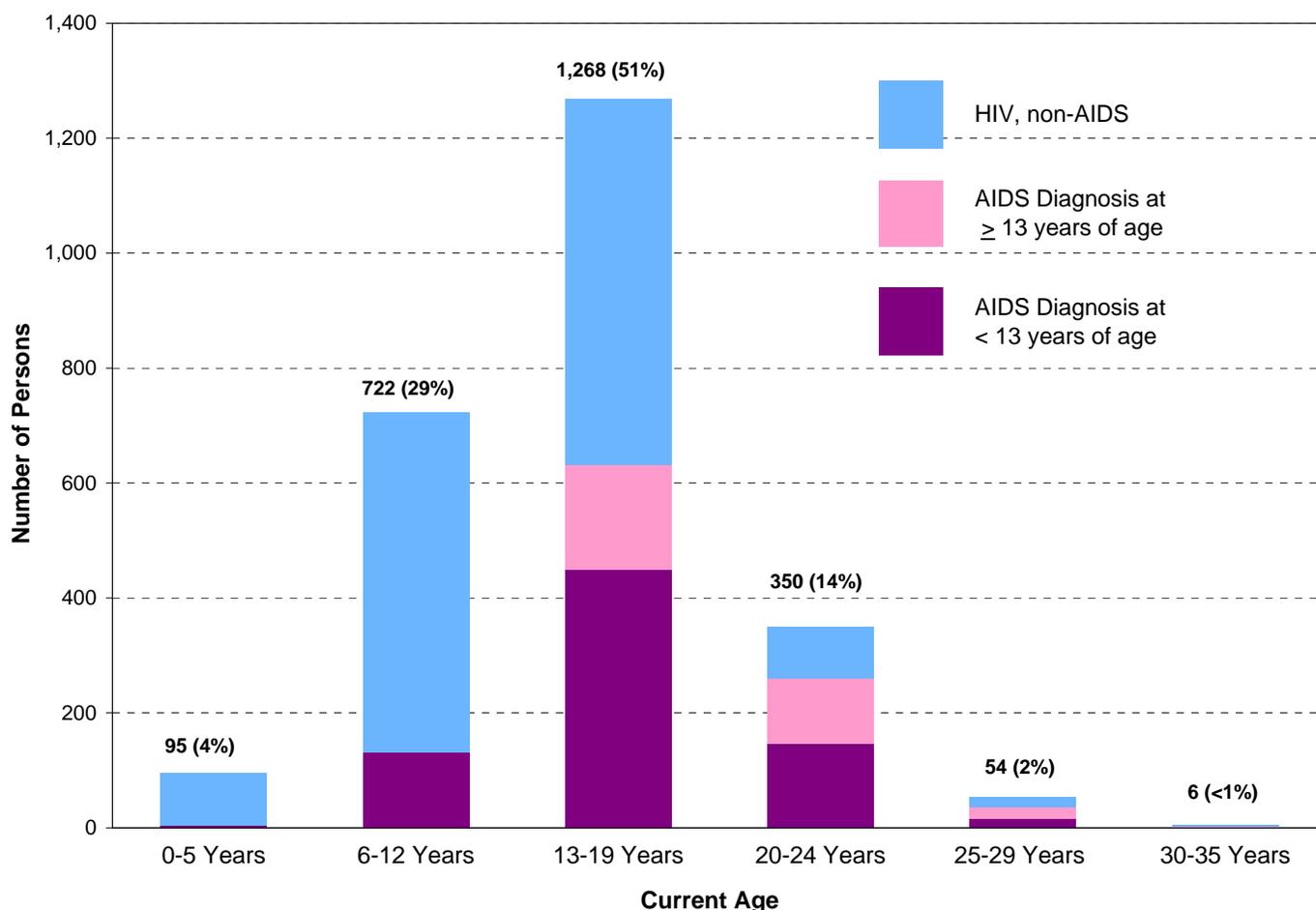
^(a) Data are incomplete for 2006 due to reporting lag.

Table 1 and Figure 1 show data on 3,985 children diagnosed with HIV infection before 13 years of age and reported to the NYC DOHMH. Two thousand four hundred and seventy-eight (62%) developed AIDS (the majority before 13 years of age).

Of the 3,985 children, 1,490 (37%) have died [1,412 (57%) of the 2,478 diagnosed with AIDS and 78 (5%) of the 1,507 diagnosed with HIV infection without AIDS].

Prior to June 2000, only children with AIDS and children enrolled at the 22 expanded pediatric surveillance sites were reported to the NYC DOHMH.

Figure 2: Pediatric Cases, Diagnosed with HIV Infection Before 13 Years of Age, Living with HIV/AIDS (N=2,495), by Current Age and Clinical Status, as of December 31, 2006, NYC

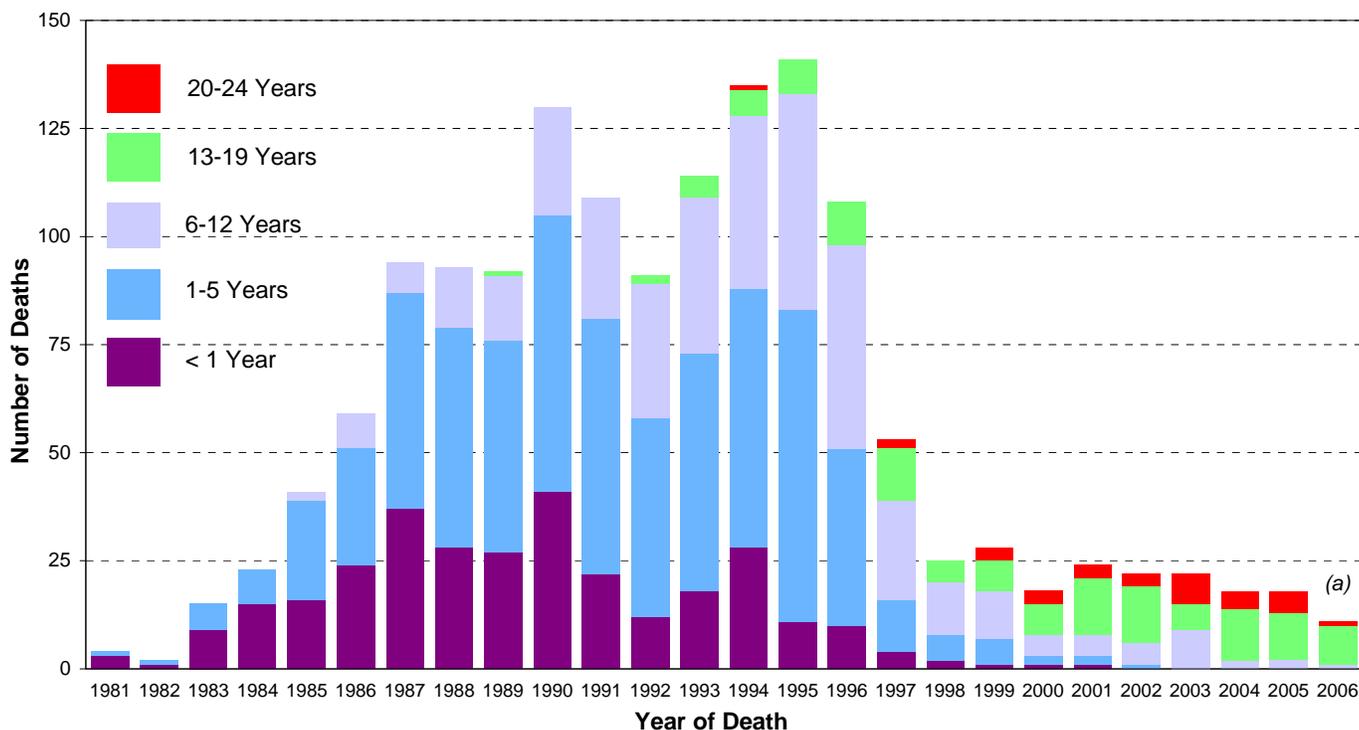


| | Current Age | | | | | | | | | | Total | | | |
|------------------------------------|-------------|-----|------------|-----|-------------|-----|-------------|-----|-------------|-----|-------|-----|-------------|-----|
| | 0-5 years | | 6-12 years | | 13-19 years | | 20-24 years | | 25-29 years | | | | 30-35 years | |
| Clinical Status | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| HIV, non-AIDS | 91 | 96 | 591 | 82 | 637 | 50 | 90 | 26 | 17 | 31 | 3 | 50 | 1,429 | 57 |
| AIDS at <13 years of age | 4 | 4 | 131 | 18 | 449 | 35 | 147 | 42 | 16 | 30 | 0 | 0 | 747 | 30 |
| AIDS at ≥13 years of age | – | – | – | – | 182 | 14 | 113 | 32 | 216 | 39 | 3 | 50 | 319 | 13 |
| Total | 95 | 100 | 722 | 100 | 1,268 | 100 | 350 | 100 | 54 | 100 | 6 | 100 | 2,495 | 100 |

HIV-infected children surviving into adolescence and young adulthood are a growing population. Sixty-seven percent of living persons diagnosed with HIV infection before 13 years of age are currently 13 years of age or older.

Only four percent of 0-5-year-olds have developed AIDS, compared with 18% among 6-12-year-olds, 49% among 13-19-year-olds, 74% of 20-24-year-olds, 69% of 25-29-year-olds and 50% of 30-35-year-olds.

Figure 3: Number of Deaths of Persons Diagnosed with HIV Infection Before 13 Years of Age (N=1,490), by Age at Death, 1981–2006^(a), NYC



| Age at Death (Years) | Year of Death | | | | | | | | | | | | | | | | | | Total |
|----------------------|---------------|------------|------------|-----------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------|--------------|
| | Pre-1990 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 ^(a) | |
| <1 | 160 | 41 | 22 | 12 | 18 | 28 | 11 | 10 | 4 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 311 |
| 1-5 | 216 | 64 | 59 | 46 | 55 | 60 | 72 | 41 | 12 | 6 | 6 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 642 |
| 6-12 | 46 | 25 | 28 | 31 | 36 | 40 | 50 | 47 | 23 | 12 | 11 | 5 | 5 | 5 | 9 | 2 | 2 | 1 | 378 |
| 13-19 | 1 | 0 | 0 | 2 | 5 | 6 | 8 | 10 | 12 | 5 | 7 | 7 | 13 | 13 | 6 | 12 | 11 | 9 | 127 |
| 20-26 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 3 | 3 | 3 | 3 | 7 | 4 | 5 | 1 | 32 |
| Total | 423 | 130 | 109 | 91 | 114 | 135 | 141 | 108 | 53 | 25 | 28 | 18 | 24 | 22 | 22 | 18 | 18 | 11 | 1,490 |

^(a) Data are incomplete for 2006 due to reporting lag.

Figure 3 shows the number of deaths by year of death in persons first diagnosed with HIV infection before 13 years of age. The number of deaths peaked in 1995. Recent declines in pediatric HIV deaths can be attributed to declining numbers of newly infected children, widespread use of combination antiretroviral therapy and prophylaxis against opportunistic infections. Data on mortality are obtained from HIV/AIDS surveillance and the NYC Office of Vital Statistics.

NEW YORK CITY NON-PERINATALLY HIV-INFECTED CHILDREN

Table 2: Non-Perinatally HIV-infected Children (N=88), by Year of Birth, Current HIV Status and Current Vital Status, as of December 31, 2006, NYC

| Year of Birth | HIV (non-AIDS) | | AIDS | | TOTAL | | |
|---------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Dead | Alive | Dead | Alive | Dead | Alive | Total |
| 1971 | 0 | 0 | 0 | 2 | 0 | 2 | 2 |
| 1973 | 0 | 0 | 1 | 1 | 1 | 1 | 2 |
| 1974 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 1976 | 0 | 2 | 1 | 0 | 1 | 2 | 3 |
| 1977 | 0 | 2 | 7 | 1 | 7 | 3 | 10 |
| 1978 | 0 | 3 | 8 | 1 | 8 | 4 | 12 |
| 1979 | 0 | 1 | 3 | 3 | 3 | 4 | 7 |
| 1980 | 1 | 3 | 1 | 2 | 2 | 5 | 7 |
| 1981 | 0 | 3 | 4 | 1 | 4 | 4 | 8 |
| 1982 | 1 | 1 | 6 | 6 | 7 | 7 | 14 |
| 1983 | 0 | 1 | 5 | 2 | 5 | 3 | 8 |
| 1984 | 0 | 0 | 5 | 2 | 5 | 2 | 7 |
| 1985 | – | – | – | – | – | – | – |
| 1986 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 1987 | 0 | 1 | 1 | 0 | 1 | 1 | 2 |
| 1988 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 1989 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 1991 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 1992 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| Total | 2 | 23 | 42 | 21 | 44 | 44 | 88 |

Non-perinatally HIV-infected children represent two percent of NYC’s HIV-infected children. Most were born during the 1970s and 1980s, none since 1992. Among all 88 children, 44 (50%) died.

Among the 88 children infected with HIV through non-perinatal risk, the risk was receipt of blood products for 81 (see also Table 1). Sixty of the 81 developed AIDS (74%), of whom 41 died. They were diagnosed with HIV infection between 1983 and 1995 except one child who diagnosed in 1999 in a foreign country.

The risk factor for HIV for 7 children was sexual abuse; three developed AIDS (43%), of whom 2 died. They were diagnosed with HIV infection between 1986 and 2003.

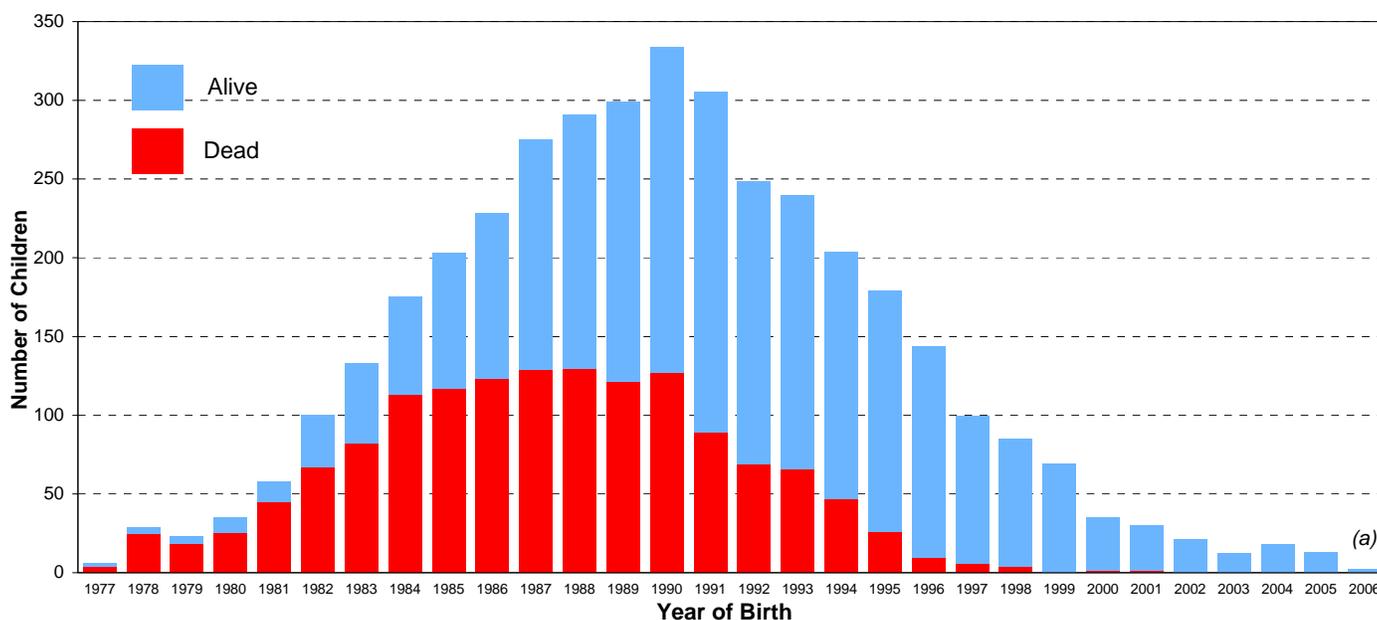
NEW YORK CITY CHILDREN BORN TO HIV-INFECTED MOTHERS

Table 3: Current HIV Status of Children Born to HIV-infected Women, as of December 31, 2006, NYC

| Perinatally HIV-infected Children (Citywide) | N |
|--|---------------|
| HIV-infected, non-AIDS | 1,481 |
| AIDS | 2,414 |
| <i>Diagnosed before 13 years</i> | 2,077 |
| <i>Diagnosed at 13 years or older</i> | 337 |
| Total HIV-infected Children | 3,895 |
| Children with Perinatal HIV Exposure (NYC Expanded Pediatric HIV/AIDS Surveillance (E-PHAS) ^(a)) | N |
| HIV-uninfected | 5,813 |
| Indeterminate status | 1,163 |
| Total Children | 10,871 |

^(a) Children from E-PHAS sites (from among 22 NYC sites) represent about 67% of exposed children overall.

Figure 4: Perinatally HIV-infected Children (N=3,895), by Year of Birth and Current Vital Status, 1977–2006^(a), NYC



| Vital Status | Year of Birth | | | | | | | | | | | | | | | | | | Total |
|--------------|---------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------|--------------|
| | Pre-1990 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 ^(a) | |
| Alive | 856 | 207 | 216 | 180 | 174 | 157 | 153 | 134 | 94 | 81 | 69 | 34 | 29 | 21 | 12 | 18 | 13 | 2 | 2,450 |
| Dead | 999 | 127 | 89 | 69 | 66 | 47 | 26 | 10 | 6 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1,445 |
| Total | 1,855 | 334 | 305 | 249 | 240 | 204 | 179 | 144 | 100 | 85 | 69 | 35 | 30 | 21 | 12 | 18 | 13 | 2 | 3,895 |

^(a) Data are incomplete for 2006 due to reporting lag.

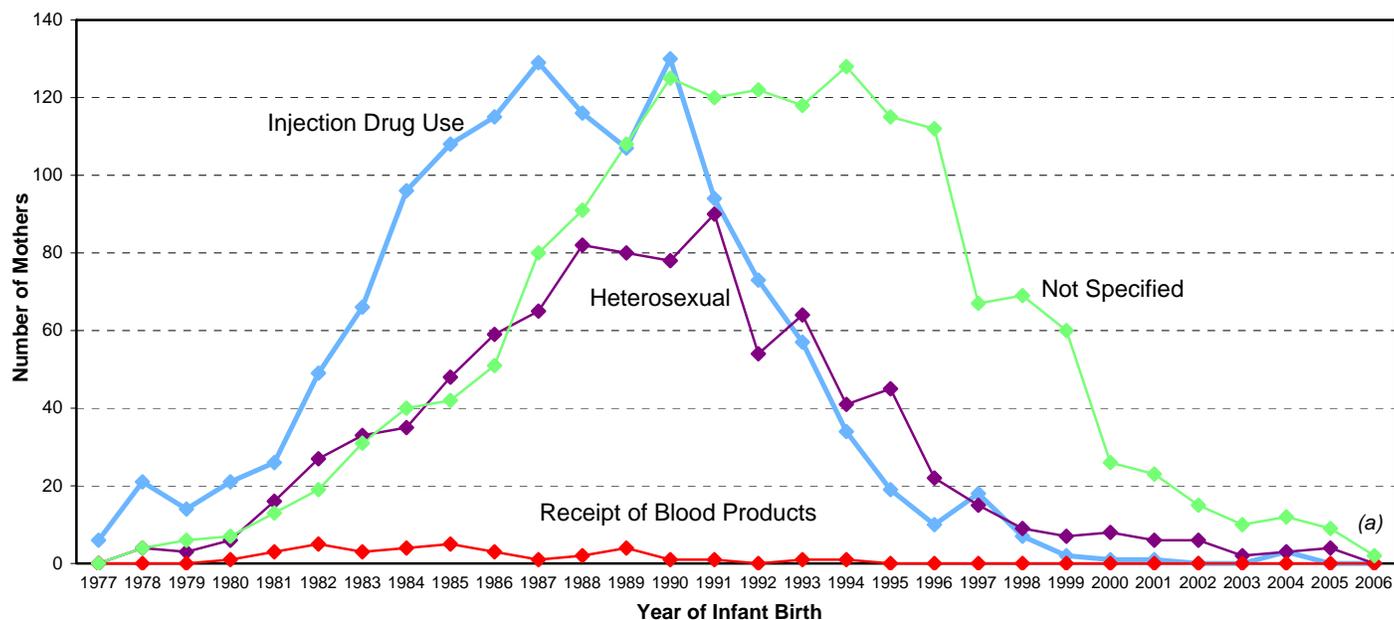
Figure 4 shows the number of perinatally HIV-infected children in care in NYC and reported to the NYC DOHMH of whom 93% were born in NYC. Prior to June 2000, only children with AIDS and children enrolled at the E-PHAS surveillance sites were reported to the NYC DOHMH. The number of HIV-exposed births (see Figure 8) and the number of infected infants born both peaked in 1990.

Table 4: Demographics of Perinatally HIV-infected Children (N=3,895) and Maternal HIV Risk Transmission Categories, as of December 31, 2006, NYC

| | | | |
|--|---|-------|-----|
| Sex | Male | 1,917 | 49% |
| | Female | 1,978 | 51% |
| Borough of Residence at Diagnosis | Bronx | 1,175 | 30% |
| | Brooklyn | 1,243 | 32% |
| | Manhattan | 705 | 18% |
| | Queens | 490 | 12% |
| | Staten Island | 82 | 2% |
| | Outside NYC | 148 | 4% |
| | Unknown | 52 | 1% |
| Race/Ethnicity | Black | 2,246 | 58% |
| | Hispanic | 1,365 | 35% |
| | White | 238 | 6% |
| | Asian/Pacific Islander/Native American/Multiracial | 24 | <1% |
| | Unknown | 22 | <1% |
| CDC-defined Maternal HIV Transmission Risk Categories | Injection drug use (IDU) | 1,323 | 34% |
| | Sex partner of an IDU man ^(a) | 413 | 11% |
| | Sex partner of man with HIV/AIDS, or with hemophilia, or in receipt of blood products, or a bisexual man ^(a) | 499 | 13% |
| | Receipt of blood products | 35 | <1% |
| | Not specified | 1625 | 42% |

^(a) Maternal HIV risk factors that constitute heterosexual risks.

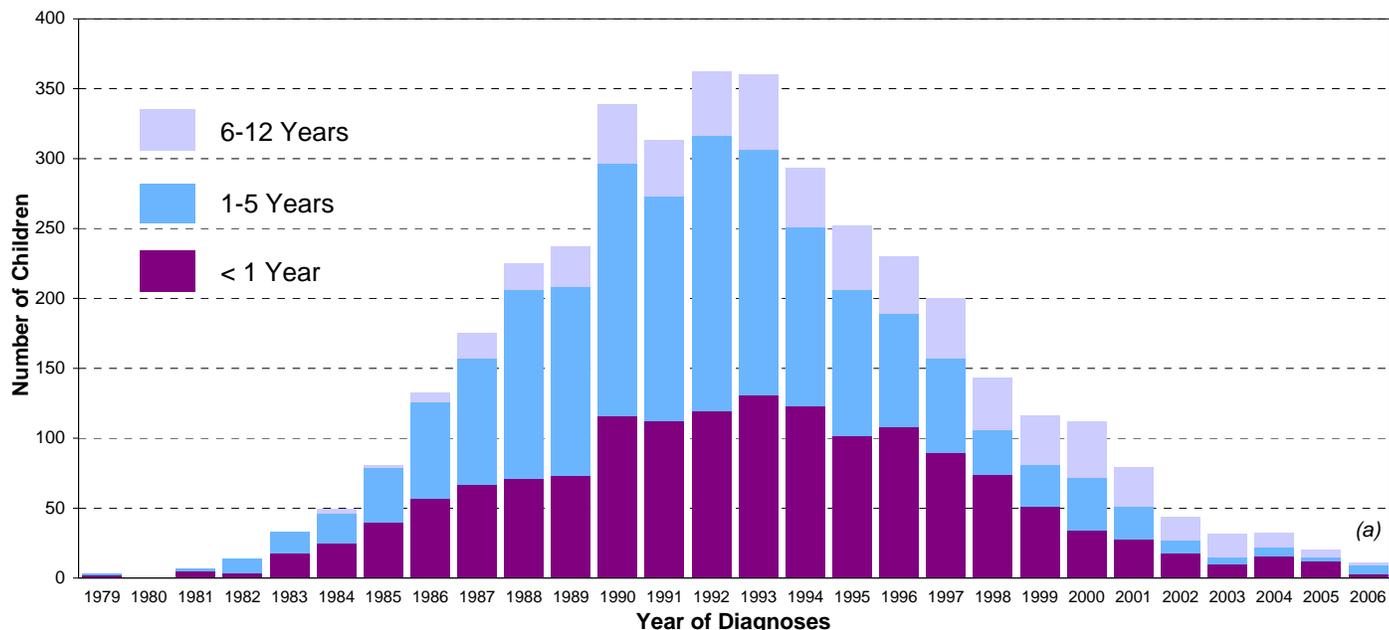
Figure 5: HIV Risk Factors of Mothers of Perinatally HIV-infected Children (N=3,895), by Year of Infant Birth, 1977–2006^(a), NYC



^(a) Data are incomplete for 2006 due to reporting lag.

CDC-defined maternal HIV risk factor is known for only 58% of women. Among the known risk factors, injection drug was the most common through 1992 and since then heterosexual sex with a man at risk for HIV infection or infected is the most common known risk factor.

Figure 6: Age at HIV Diagnosis of Perinatally HIV-infected Children (N=3,895) by Year of Diagnosis, 1979–2006^(a), NYC



| Age at Diagnosis (Years) | Year of Diagnosis | | | | | | | | | | | | | | | | | | Total |
|--------------------------|-------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|---------------------|--------------|
| | Pre-1990 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 ^(a) | |
| <1 | 362 | 116 | 112 | 119 | 131 | 123 | 102 | 108 | 90 | 74 | 51 | 34 | 28 | 18 | 10 | 16 | 12 | 3 | 1,509 |
| 1-5 | 517 | 181 | 161 | 197 | 175 | 128 | 104 | 81 | 67 | 32 | 30 | 38 | 23 | 9 | 5 | 6 | 3 | 6 | 1,763 |
| 6-12 | 78 | 42 | 40 | 46 | 54 | 42 | 46 | 41 | 43 | 37 | 35 | 40 | 28 | 17 | 17 | 10 | 5 | 2 | 623 |
| Total | 957 | 339 | 313 | 362 | 360 | 293 | 252 | 230 | 200 | 143 | 116 | 112 | 79 | 44 | 32 | 32 | 20 | 11 | 3,895 |

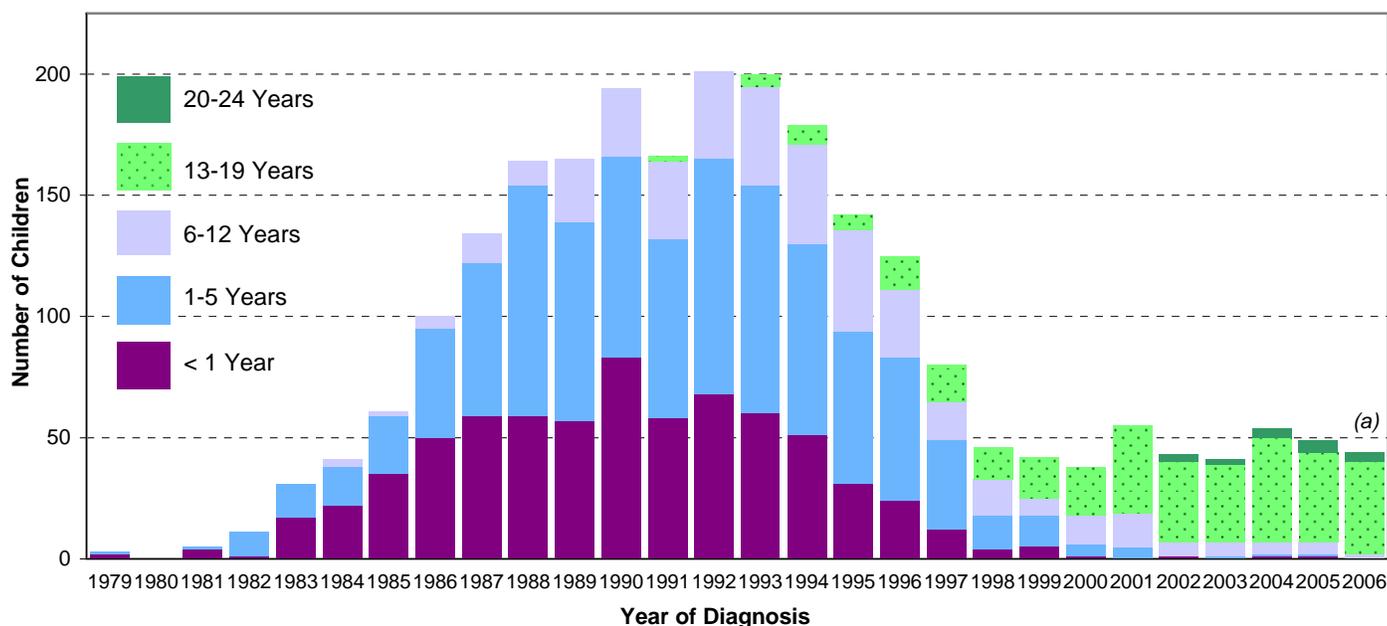
^(a) Data are incomplete for 2006 due to reporting lag.

Figure 6 shows the number of HIV-infected children by year of initial diagnosis of HIV infection. The number of diagnoses peaked in 1992-93. Declines in HIV diagnoses among children under 13 years of age are due to decreasing numbers of HIV-infected women delivering (see Figure 8) and increasing use of prenatal antiretroviral therapies to prevent transmission (see Figure 10).

Cumulatively, 93% of children were born in NYC. During 2005-2006, of the 31 children newly diagnosed with HIV infection, 23 (74%) were born in New York (22 in NYC), two (7%) were born in the United States outside of New York, one (3%) in a United States possession, and 5 (16%) were foreign-born.

Overall, 1,354 children (35%) were concurrently diagnosed with HIV and AIDS (i.e. the AIDS diagnosis was within 60 days of the HIV diagnosis) (data not shown in figure and table). Among children diagnosed before 1990, this occurred in 66% of children; this occurred in only 9% of children diagnosed during 2001-2006.

Figure 7: Age at AIDS Diagnosis of Perinatally HIV-infected Children (N=2,414), by Year of Diagnosis, 1979–2006^(a), NYC



| Age at Diagnosis (Years) | Year of Diagnosis | | | | | | | | | | | | | | | | | | Total |
|--------------------------|-------------------|------------|------------|------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------|--------------------|
| | Pre-1990 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 ^(a) | |
| <1 | 306 | 83 | 58 | 68 | 60 | 51 | 31 | 24 | 12 | 4 | 5 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 706 |
| 1-5 | 351 | 83 | 74 | 97 | 94 | 79 | 63 | 59 | 37 | 14 | 13 | 5 | 5 | 0 | 1 | 1 | 1 | 0 | 977 |
| 6-12 | 58 | 28 | 32 | 36 | 41 | 41 | 42 | 28 | 16 | 15 | 7 | 12 | 14 | 6 | 6 | 5 | 5 | 2 | 394 |
| 13-19 | 0 | 0 | 2 | 0 | 5 | 8 | 6 | 14 | 15 | 13 | 17 | 20 | 36 | 33 | 32 | 43 | 37 | 38 | 319 ^(b) |
| 20-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 4 | 5 | 4 | 18 ^(b) |
| Total | 715 | 194 | 166 | 201 | 200 | 179 | 142 | 125 | 80 | 46 | 42 | 38 | 55 | 43 | 41 | 54 | 49 | 44 | 2,414 |

^(a) Data are incomplete for 2006 due to reporting lag.

^(b) 303 of 337 cases were diagnosed on the basis of a CD4 cell count <200 cells/mm³ or <14%.

Figure 7 shows trends in AIDS cases by age at AIDS diagnosis. Among 3,895 perinatally HIV-infected children, 2,414 (62%) developed AIDS as of December 2006. One thousand three hundred and forty-four (56%) were diagnosed concurrently with HIV and AIDS (i.e. the AIDS diagnosis was within 60 days of the HIV diagnosis) (data not shown in figure and table) and 1,060 (44%) were subsequently diagnosed with AIDS.

Starting in 1994, there have been declining numbers of reported and diagnosed AIDS cases in NYC children under 13 years of age. Declines in children under 13 years of age are due to increasing use of PCP prophylaxis and increasing use of antiretroviral therapy.

Through December 2006, 337 perinatally infected youth were diagnosed with AIDS at age 13 or older; 303 (90%) were diagnosed on the basis of a CD4 cell count <200 cells/mm³ or <14% without any AIDS-defining illnesses.

Table 5: Cumulative Reported AIDS-defining Conditions of 2,414 Perinatally HIV-infected Children with AIDS^(a), by Year of Diagnosis, 1979–2006^(b), NYC

| | 1979 -1986 | 1987 -1994 | 1995 -1998 | 1999 -2002 | 2003 -2006 ^(b) | Total | % |
|--|---------------|---------------|---------------|---------------|------------------------------|-------|-----|
| <i>Pneumocystis jiroveci</i> pneumonia ^(c) | 112 | 560 | 103 | 38 | 10 | 823 | 20 |
| Lymphoid interstitial pneumonia | 65 | 440 | 94 | 10 | 3 | 612 | 15 |
| HIV encephalopathy | 8 | 236 | 104 | 34 | 7 | 389 | 9 |
| <i>Mycobacterium avium</i> complex & other species disease | 21 | 203 | 115 | 34 | 16 | 389 | 9 |
| Recurrent bacterial infections | 31 | 231 | 46 | 6 | 6 | 320 | 8 |
| Wasting syndrome | 10 | 143 | 62 | 19 | 10 | 244 | 6 |
| Esophageal candidiasis | 26 | 112 | 42 | 28 | 11 | 219 | 5 |
| Cytomegalovirus disease | 23 | 112 | 25 | 8 | 1 | 169 | 4 |
| Chronic mucocutaneous herpes simplex | 14 | 70 | 22 | 7 | 6 | 119 | 3 |
| Chronic intestinal cryptosporidiosis | 10 | 48 | 18 | 3 | 0 | 79 | 2 |
| Pulmonary candidiasis | 2 | 42 | 7 | 3 | 1 | 55 | 1 |
| Cytomegalovirus retinitis | 0 | 23 | 18 | 5 | 2 | 48 | 1 |
| Extrapulmonary tuberculosis | 5 | 19 | 7 | 5 | 3 | 39 | 1 |
| Cryptococcosis | 2 | 16 | 5 | 2 | 2 | 27 | <1 |
| Burkitt's lymphoma | 4 | 13 | 2 | 0 | 2 | 21 | <1 |
| Toxoplasmosis, brain | 1 | 12 | 5 | 1 | 1 | 20 | <1 |
| Immunoblastic lymphoma | 0 | 6 | 6 | 2 | 3 | 17 | <1 |
| Lymphoma, brain | 5 | 5 | 2 | 2 | 0 | 14 | <1 |
| Progressive multifocal leukoencephalopathy | 0 | 4 | 3 | 2 | 0 | 9 | <1 |
| Recurrent pneumonia ^(d) | 0 | 1 | 2 | 4 | 1 | 8 | <1 |
| Histoplasmosis | 0 | 2 | 2 | 0 | 1 | 5 | <1 |
| Kaposi's sarcoma | 0 | 1 | 2 | 0 | 1 | 4 | <1 |
| Coccidioidomycosis | 0 | 0 | 0 | 0 | 1 | 1 | <1 |
| CD4 cell count <200 cells/mm ³ or <14% ^(d) | 0 | 34 | 93 | 197 | 182 | 506 | 12 |
| Total | 339 | 2,333 | 785 | 410 | 270 | 4,137 | 100 |

^(a) Some have more than one AIDS-defining condition.

^(b) Data are incomplete for 2006 due to reporting lag.

^(c) Previously named *Pneumocystis carinii* pneumonia.

^(d) In 1993, the CDC AIDS case definition was expanded to include CD4 cell counts <200 cells/mm³ or <14%, pulmonary tuberculosis, recurrent pneumonia, and invasive cervical cancer in adolescents and adults >13 years of age.

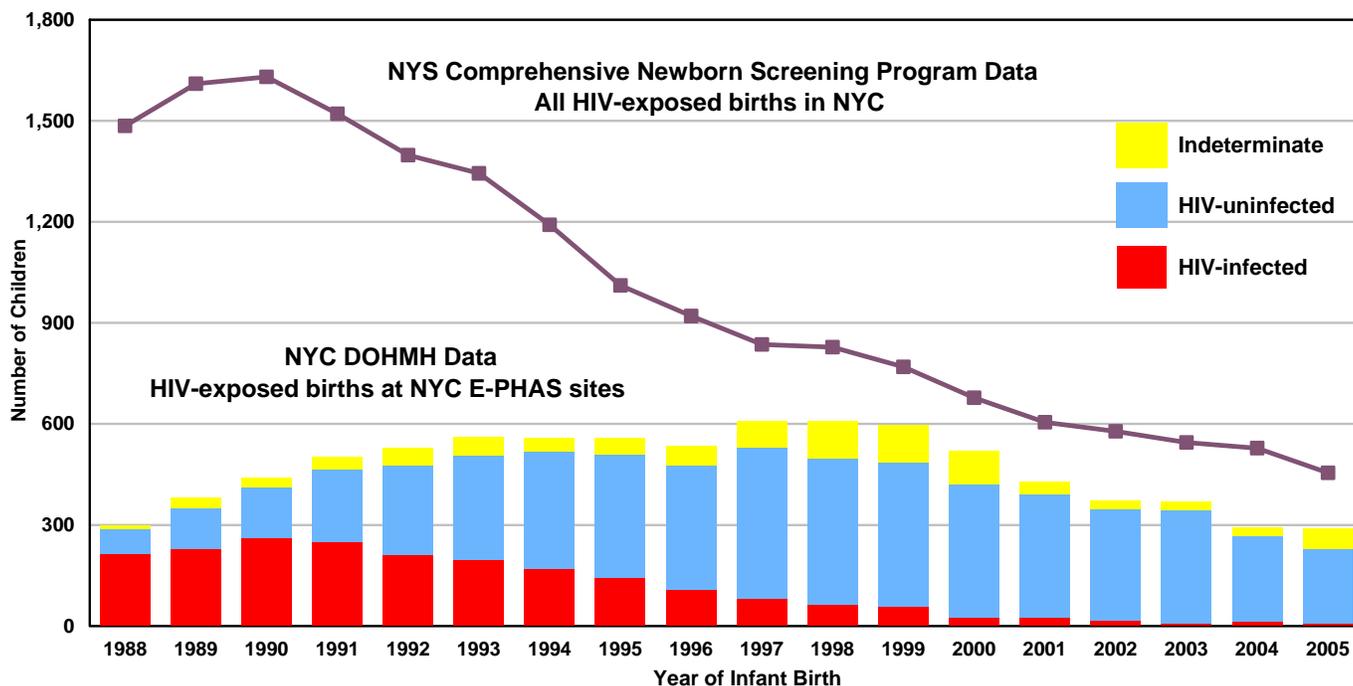
Table 5 includes the cumulative number of AIDS-defining conditions reported in children diagnosed with AIDS, including the first and subsequent conditions. Conditions are reported through active case surveillance and physician report forms and do not reflect all AIDS-defining conditions that have been diagnosed in perinatally HIV-infected children.

The number of AIDS-defining conditions declined dramatically after the mid-1990s. *Pneumocystis* pneumonia was the most common AIDS-defining condition during 1979-1994. Declines after 1994 are associated with the publication of revised guidelines for PCP prophylaxis in children [MMWR 1995. 44 (RR-4):1-11]. During 1999-2006, the majority of AIDS-defining conditions occurred among children ≥13 years of age and were based solely on CD4 cell count under 200 cells/mm³ or <14%.

TRENDS IN PREVENTION OF PERINATAL HIV TRANSMISSION IN NYC

Since 1988, data on the number of HIV-exposed births in New York are available through NYS DOH newborn HIV testing program as described on page 3. Data on trends in prevention of perinatal HIV transmission are from Expanded Pediatric HIV/AIDS Surveillance (E-PHAS) sites where perinatal HIV exposure surveillance has been conducted since 1989. E-PHAS sites care for an estimated two-thirds of children exposed to and infected with HIV in NYC. Since 1997, all HIV-exposed children are identified through the Comprehensive Newborn Screening Program (CNSP) allowing for evaluation of successive birth cohorts. Data presented in this section are presented on infants born through 2005; determination of infant HIV infection status is not complete for infants born in 2006.

Figure 8: Current HIV Classification of Children Born to HIV-infected Women in NYC: A Comparison of NYS DOH Newborn HIV Testing and Comprehensive Newborn Screening Program Data and NYC DOHMH Data at E-PHAS NYC Sites, by Year of Birth, 1988–2005

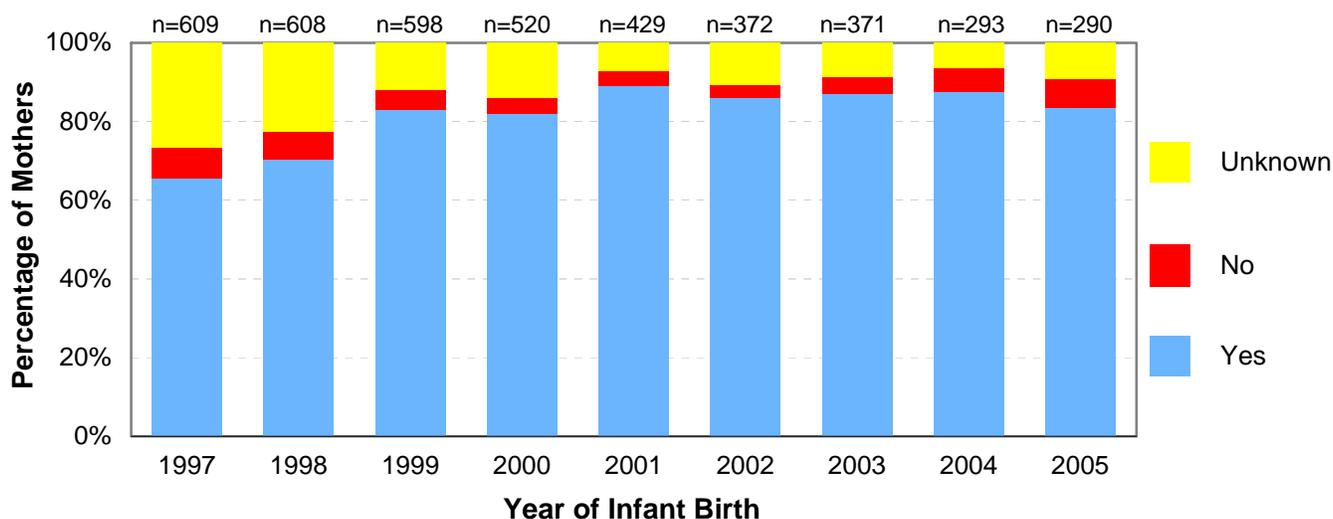


Children born to HIV-infected Women, by HIV Status, NYC DOHMH Data, NYC E-PHAS Sites

| HIV status | Year of Birth | | | | | | | | | | | | | | | | | |
|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
| Infected | 214 | 228 | 260 | 251 | 210 | 198 | 168 | 143 | 107 | 82 | 65 | 56 | 25 | 25 | 16 | 6 | 13 | 9 |
| Uninfected | 75 | 122 | 153 | 214 | 268 | 308 | 351 | 366 | 368 | 450 | 431 | 431 | 396 | 366 | 332 | 339 | 255 | 222 |
| Indeterminate | 11 | 30 | 28 | 38 | 51 | 56 | 41 | 50 | 59 | 77 | 112 | 111 | 99 | 38 | 24 | 26 | 25 | 59 |

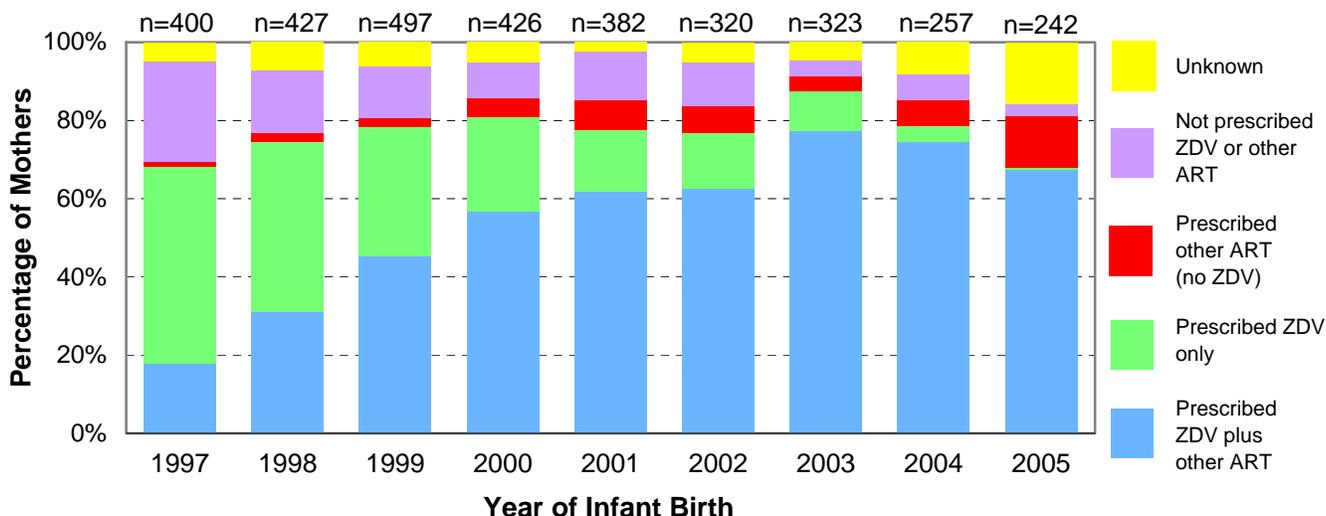
Figure 8 shows the number of HIV-exposed children born in NYC since 1988 from the NYS Newborn HIV Testing and CNSP data (line), in comparison with the number reported to the NYC DOHMH from the Expanded Pediatric HIV/AIDS Surveillance sites (bars). In 1997, statewide universal newborn screening for HIV began through the CNSP. From 1997-2005, 70% of NYC's HIV-exposed infants were born at and/or were in care at the E-PHAS sites.

Figure 9: Proportion of HIV-infected Women (N=4,090) who Received Prenatal Care, by Year of Infant Birth, 1997–2005, NYC E-PHAS Sites



Eighty-six percent of the 4,090 HIV-infected women had prenatal care data documented in the pediatric medical records. Among the women with prenatal care data, 3,274 (94%) had prenatal care.

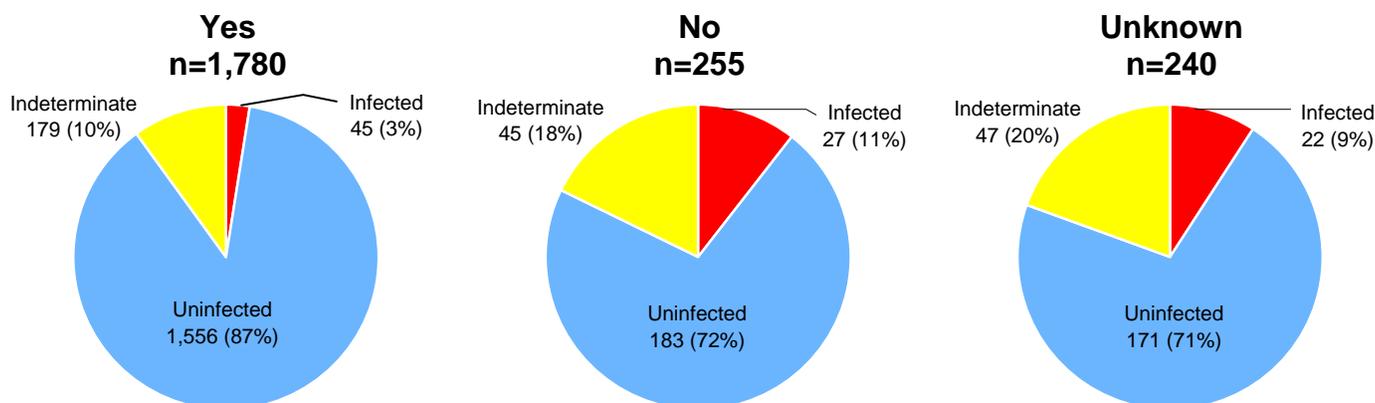
Figure 10: Prenatal Prescription of Antiretroviral Therapies for HIV-infected Women Known to Have Received Prenatal Care (N=3,274), by Year of Infant Birth, 1997–2005, NYC E-PHAS Sites



During 2004-05, 88% of women in prenatal care had data on antiretroviral therapies (ART) prescriptions documented in the pediatric medical records. Among women with ART data, 2% were prescribed prenatal zidovudine (ZDV) alone, 81% were prescribed prenatal ZDV in combination with other antiretroviral therapies (ART), and another 11% were prescribed a prenatal ART regimen that did not contain ZDV. For 6%, no ART was prescribed. Data on adherence are not collected.

Figure 11: Infant HIV Infection Status by Prenatal Antiretroviral Therapy for 2,275 Infants Born to HIV-infected Women, 2000–2005, NYC E-PHAS Sites

Mother Prescribed Any Prenatal Antiretroviral Therapy^(a)



^(a) Any prenatal antiretroviral therapy includes zidovudine alone or with other antiretrovirals, or other antiretrovirals without zidovudine, regardless of intrapartum and neonatal antiretroviral therapy.

Among 2,275 infants born to HIV-infected women 2000-2005, 94 (4%) were infected, 1,910 (84%) uninfected, and 271 (12%) indeterminate. Transmission was 3% in infants born to mothers prescribed ART and 11% in those born to mothers who did not receive ART.

Table 6: Perinatal HIV Transmission Rates by Prenatal, Intrapartum, and Neonatal Antiretroviral Use Evaluated for 1,664 of the 2,275 Infants Born 2000-2005, NYC E-PHAS Sites^(a)

| Timing of ART use | N | % Infected | % Uninfected | % Indeterminate |
|--|-------|------------|--------------|-----------------|
| Prenatal ZDV with other ART ^(b) plus intrapartum and neonatal ZDV | 1,187 | 2 | 90 | 8 |
| Prenatal, intrapartum and neonatal ZDV | 255 | 4 | 86 | 10 |
| Intrapartum and neonatal ZDV only | 108 | 8 | 75 | 17 |
| Neonatal ZDV with other ART (started within 24 hours of birth) | 51 | 4 | 78 | 18 |
| Neonatal ZDV only (started within 24 hours of birth) | 40 | 10 | 62.5 | 27.5 |
| None (no ART) ^(c) | 23 | 30 | 57 | 13 |

ART=antiretroviral therapy; ZDV=zidovudine

^(a) Enrollment decreased to 19 sites during 2002-2005.

^(b) Reverse transcriptase inhibitors and/or protease inhibitors.

^(c) All infants were evaluated for HIV exposure within 3 months of birth.

Table 6 examines the relationship between prenatal, intrapartum, and neonatal antiretroviral prescriptions and infants' HIV infection status. The 1,664 infants are among 2,275 infants born 2000-2005 for whom we have complete information on maternal and neonatal antiretroviral use and for whom the ART included ZDV. Transmission rates were lowest among deliveries with prenatal ZDV with other ART in addition to intrapartum and neonatal ZDV.

NEW YORK CITY HIV-INFECTED YOUTH DIAGNOSED AT 13-24 YEARS OF AGE

Cumulatively, among youth diagnosed through December 31, 2006, HIV infection was reported in 2,893 adolescents diagnosed at 13-19 years of age, of whom 60% were males, and in 10,600 young adults diagnosed at 20-24 years of age, of whom 65% were males. Before June 2000, only persons with AIDS were reported. The most common CDC-defined risk factor for males in both age groups is sex with other men (MSM) (59%), and for females, heterosexual sex (43%). AIDS was diagnosed in 67% of males and 66% of females. Overall, 27% of persons have died. Table 7 shows data on 3,596 HIV-infected youth diagnosed during 2001-2006.

Table 7: Demographics of Youth Diagnosed with HIV Infection Between 13 and 24 Years of Age (N=3,596) during 2001-2006, by Current Clinical Status, as of December 31, 2006, NYC

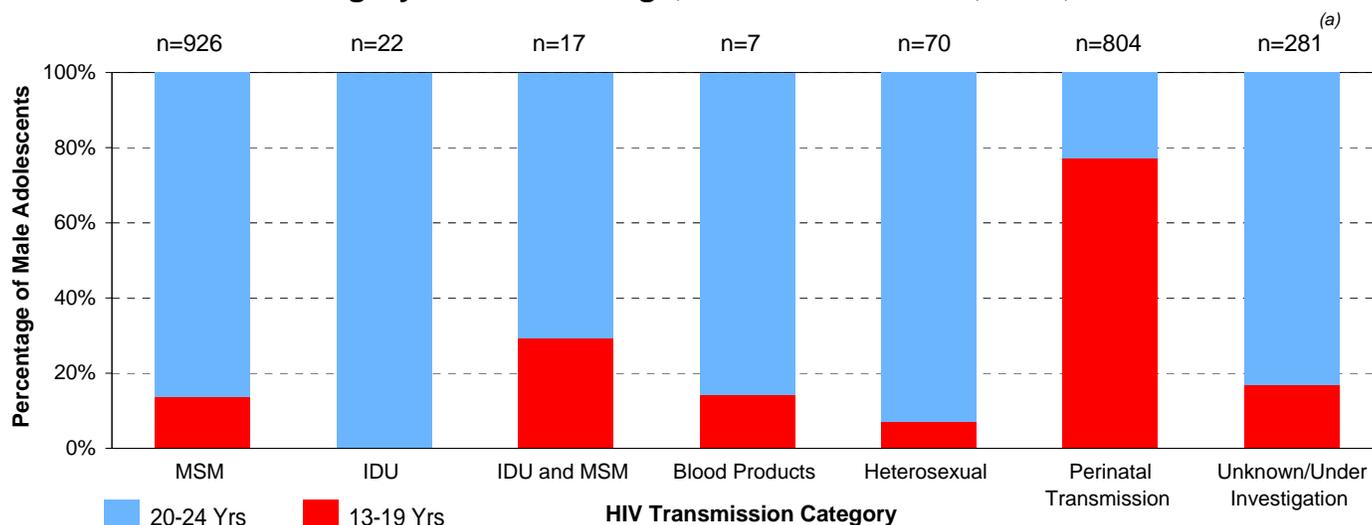
| | | Males (Age at diagnosis) | | | | Females (Age at diagnosis) | | | |
|--|---------------------------------|--------------------------|----|--------------------------|----|----------------------------|----|------------------------|----|
| | | 13-19 years (N=603) | | 20-24 years (N=1,785) | | 13-19 years (N=352) | | 20-24 years (N=856) | |
| | | N | % | N | % | N | % | N | % |
| HIV Transmission Risk Categories | Men Who Have Sex With Men (MSM) | 422 | 70 | 1,211 | 68 | – | – | – | – |
| | Injection drug use (IDU) | 6 | 1 | 47 | 2 | 8 | 2 | 42 | 5 |
| | MSM and IDU | 10 | 2 | 33 | 2 | – | – | – | – |
| | Heterosexual | 29 | 5 | 102 | 6 | 159 | 45 | 354 | 41 |
| | Perinatal transmission | 1 | <1 | 0 | 0 | 1 | <1 | 0 | 0 |
| | Sexual Abuse | 1 | 0 | 0 | 0 | 14 | 4 | 12 | 2 |
| | Unknown/Under Investigation | 134 | 22 | 392 | 22 | 170 | 49 | 448 | 52 |
| Race/ Ethnicity | Black | 360 | 60 | 870 | 49 | 236 | 67 | 565 | 66 |
| | Hispanic | 194 | 32 | 625 | 35 | 95 | 27 | 225 | 26 |
| | White | 37 | 6 | 253 | 14 | 11 | 3 | 52 | 6 |
| | Other ^(a) | 10 | 2 | 33 | 2 | 9 | 3 | 13 | 2 |
| | Unknown | 2 | <1 | 4 | <1 | 1 | <1 | 1 | <1 |
| Borough of Residence at Diagnosis | Bronx | 142 | 23 | 393 | 22 | 116 | 33 | 264 | 31 |
| | Brooklyn | 184 | 30 | 475 | 27 | 119 | 34 | 293 | 34 |
| | Manhattan | 131 | 22 | 491 | 27 | 53 | 15 | 153 | 18 |
| | Queens | 88 | 15 | 279 | 16 | 44 | 13 | 105 | 12 |
| | Staten Island | 18 | 3 | 29 | 2 | 7 | 2 | 15 | 2 |
| | Outside NYC | 29 | 5 | 93 | 5 | 5 | 1 | 22 | 3 |
| | Unknown | 11 | 2 | 25 | 1 | 8 | 2 | 4 | 0 |
| Clinical Status | AIDS | 170 | 28 | 573 | 32 | 97 | 28 | 245 | 29 |
| | HIV | 433 | 72 | 1,212 | 68 | 255 | 72 | 611 | 71 |
| Survival Status | Dead | 8 | 1 | 43 | 2 | 12 | 3 | 22 | 3 |
| | Alive | 595 | 99 | 1742 | 98 | 340 | 97 | 834 | 97 |

^(a) Includes Asian, Pacific Islander, Native American, and multiracial persons.

During 2001-2006, 73% of new HIV diagnoses among youth were in persons, 20-24 years of age. For males, the predominant known HIV transmission risk was MSM (68%), and for females, it was heterosexual contact (42%). Overall, 14% of males and 12% of females had a concurrent HIV/AIDS diagnosis (i.e. the AIDS diagnosis was within 60 days of the HIV diagnosis), indicating an HIV diagnosis late in the course of infection. Subsequently, another 18% of males and 16% of females developed AIDS.

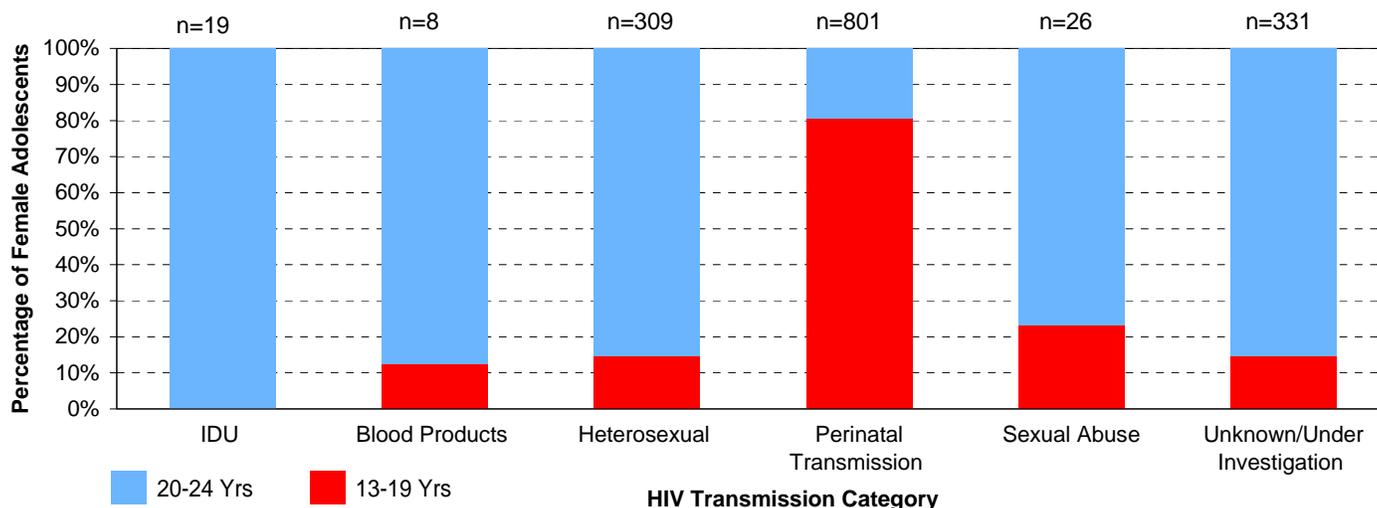
NEW YORK CITY YOUTH LIVING WITH HIV/AIDS

Figure 12: Males Between 13 and 24 Years of Age Living with HIV/AIDS (N=2,127), by HIV Transmission Risk Category and Current Age, as of December 31, 2006, NYC



^(a) Sexual abuse is reported for two persons.

Figure 13: Females Between 13 and 24 Years of Age Living with HIV/AIDS (N=1,494), by HIV Transmission Risk Category and Current Age, as of December 31, 2006, NYC



Figures 12 and 13 show data on 3,621 HIV-infected youth 13-24 years of age living with HIV/AIDS. They include 1,618 youth diagnosed before 13 years of age, for whom 99% had perinatal HIV transmission risk, and 2,003 diagnosed at 13-24 years of age. Among males diagnosed at 13-24 years of age, the predominant known risk is men who have sex with men, and among females diagnosed at 13-24 years of age it is heterosexual sex. Overall, 1,428 of the living youth (39%) have been diagnosed with AIDS: 56% of those with perinatal HIV transmission risk, 67% of those infected through receipt of contaminated blood products, and 26% of the remaining youth. Complete reporting of prevalent diagnosed cases and detection of newly infected persons (through early diagnosis) are necessary to more fully describe the extent of the epidemic among adolescents and young adults.