

# **Epidemiology of Adolescents Living with HIV in New York City**

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## ❖ ***Background:***

In the United States, as of 2002, the highest proportion of cumulated pediatric (22%) and adult/adolescent (15%) AIDS cases were reported from New York City (NYC) .

## ❖ ***Study Objectives:***

- ✓ To describe the epidemiology of adolescents living with HIV/AIDS, reported to the NYC Department of Health and Mental Hygiene (DOHMH).
- ✓ To compare age at HIV/AIDS diagnosis and AIDS-defining conditions by period of time and transmission risks.

# Methods (I):

## *Data Sources:*

- ❖ Routine Surveillance in NYC:
  - AIDS surveillance began in 1981
  - HIV surveillance began in 2000
- ❖ CDC-funded Projects:
  - Pediatric HIV/AIDS Surveillance Projects
  - Pediatric Spectrum of HIV Disease Project
- ❖ NYC DOHMH Office of Vital Statistics death certificate data.

## *Eligibility:*

- ❖ Diagnosed with HIV infection through December 31, 2003
- ❖ Currently alive and age between 13 and 21 years old, as of December 31, 2003
- ❖ HIV-infected adolescents who died before December 31, 2003 were excluded

# Methods (II):

## ❖ **Period of HIV Diagnosis**

1983-1989, 1990-1996, 1997-2003

## ❖ **HIV Transmission Risks**

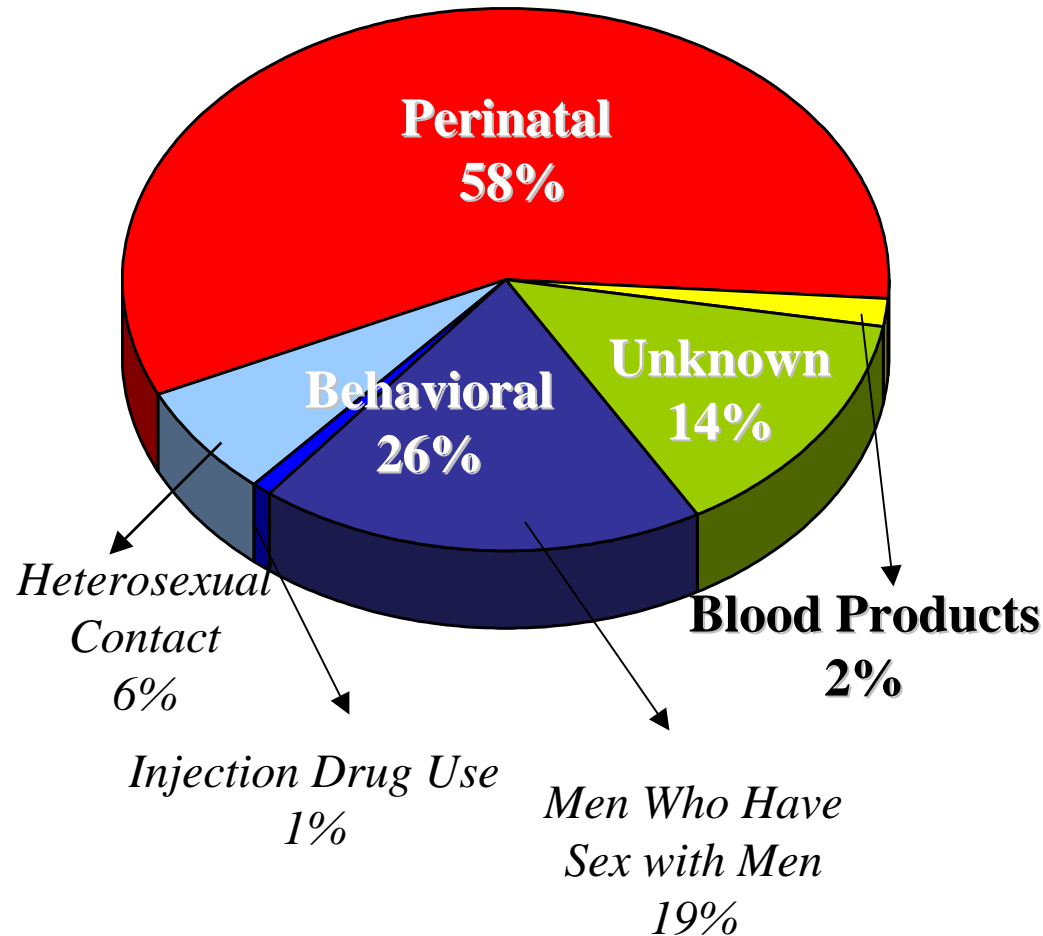
- Behavioral: injection drug user, men who have sex with men, heterosexual contact
- Perinatal (mother was HIV-infected)
- Blood Products (receipt of blood transfusion, blood components, or tissue)
- Unknown/under investigation

## ❖ **Age-specific Severe Immunosuppression** (*MMWR 43:RR-12, 1994*)

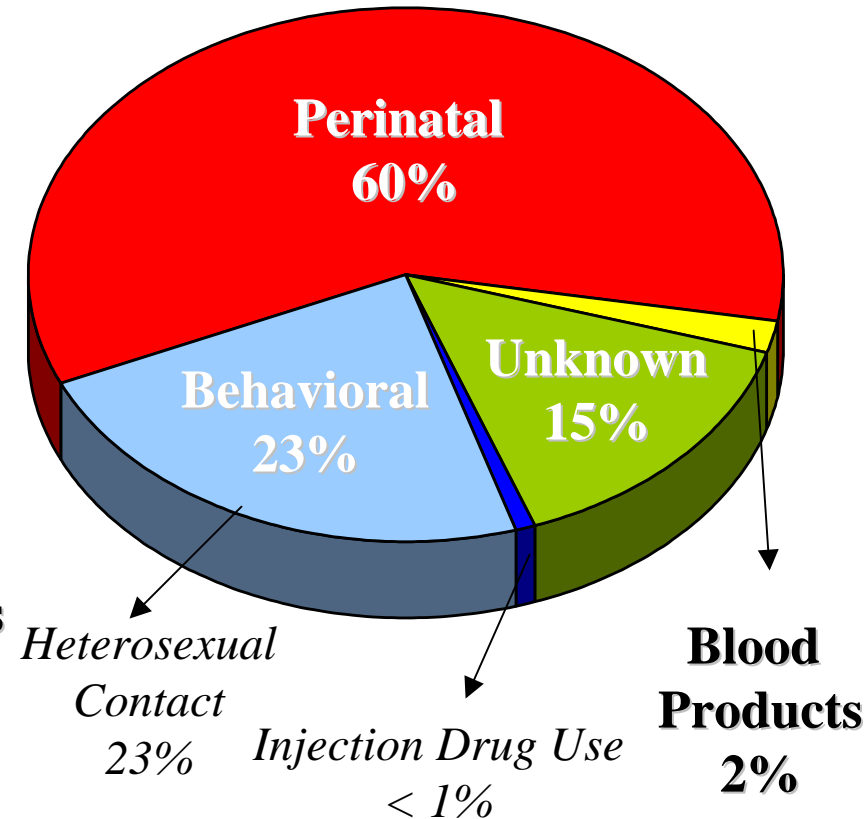
- < 1 year : CD4 count <750 or <15%
- 1-5 years: CD4 count <500 or <15%
- $\geq$  6 years: CD4 count <200 or <15%

# Result 1. HIV Transmission Risks of Adolescents (13-21 years) Living with HIV/AIDS (N=1,731), by Gender, NYC, Reported through 2003

Male  
(N=878)



Female  
(N=853)



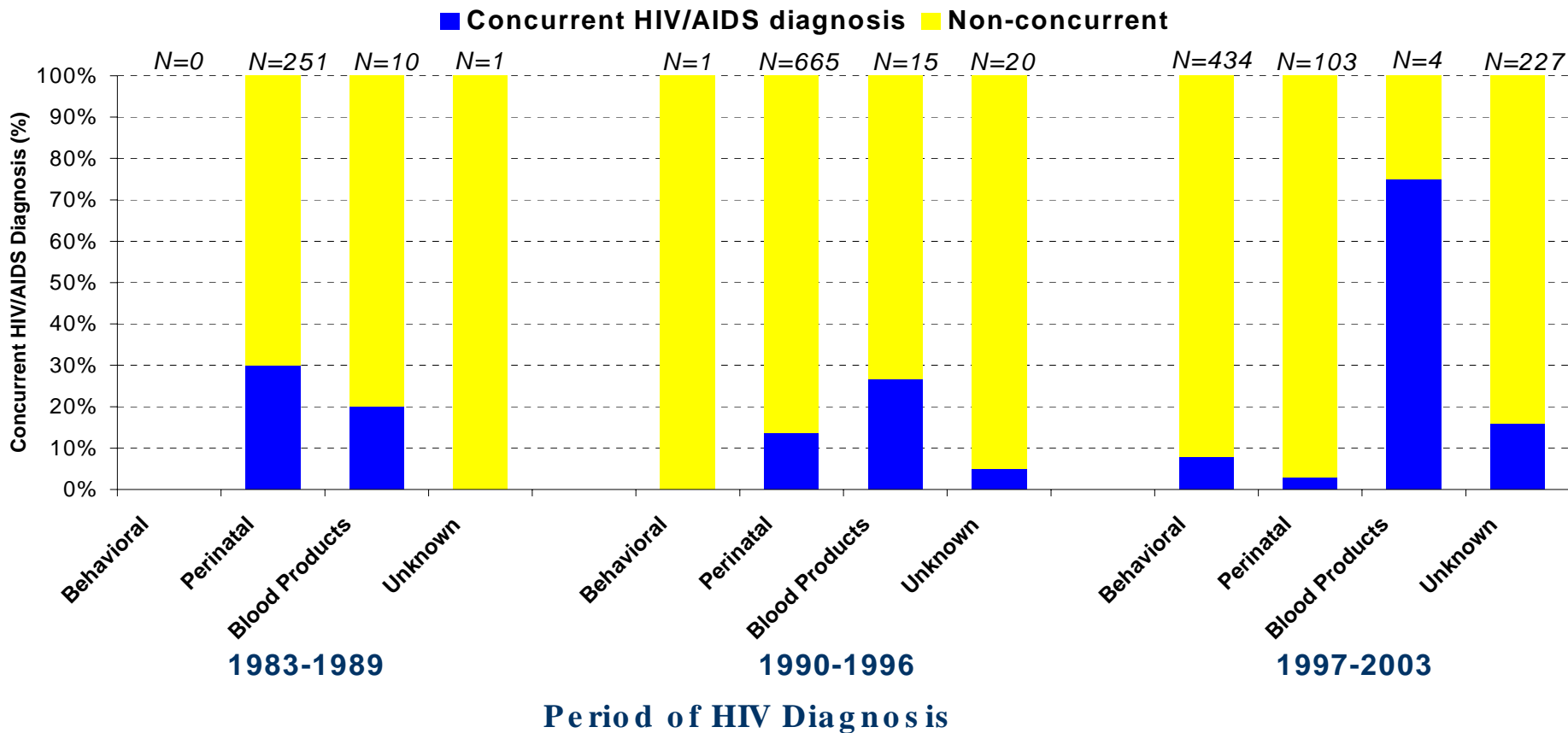
## Result 2. Characteristics (%) of Adolescents (13-21 years) Living with HIV/AIDS (N=1,731), by HIV Transmission Risks, NYC, Reported through 2003

	Behavioral (N=435)	Perinatal (N=1,019)	Blood Products (N=29)	Unknown (N=248)	TOTAL (N=1,731)
<b>Gender (%)</b>					
Male	53	50	48	49	51
Female	47	50	52	51	49
<b>Race/Ethnicity (%)</b>					
White	7	7	10	7	7
Black	60	54	42	59	56
Hispanic	32	37	45	28	35
Other	1	<1	0	2	1
Unknown	0	1	3	4	1
<b>Period of HIV Diagnosis (%)</b>					
1983-1989	0	25	34	<1	15
1990-1996	<1	65	52	8	41
1997-2003	99	10	14	91	44
<b>Current HIV/AIDS Status (%)</b>					
HIV, Non-AIDS	80	51	31	65	60
AIDS: Diagnosis < 13 Years	0	37	31	3	23
AIDS: Diagnosis > 13 Years	20	12	38	32	17
<b>TOTAL</b>	100%	100%	100%	100%	100%

### Result 3. Timing of HIV/AIDS Diagnosis of Adolescents (13-21 years) Living with HIV/AIDS (N=1,731), by HIV Transmission Risks, NYC, Reported through 2003

		Behavioral	Perinatal	Blood Products	Unknown	TOTAL
<b>Current Age (years)</b>	N	435	1,019	29	248	1,731
	Median	20	15	19	19	17
	Range	14 - 21	13 - 21	13 - 21	13 - 21	13 - 21
<b>Age at HIV (years)</b>	N	435	1,019	29	248	1,731
	Median	18	3	6	15	7
	Range	13 - 21	0 - 12	0 - 17	4 - 21	0 - 21
<b>Age at AIDS (years)</b>	N	86	497	20	86	689
	Median	19	5	13	15	9
	Range	14 - 21	0 - 19	0 - 18	6 - 20	0 - 21
<b>Time from HIV Diagnosis to AIDS (months)</b>	N	86	497	20	86	689
	Median	2.5	11	11	3	7
	Range	0 - 48	0 - 200	0 - 148	0 - 178	0 - 200

# Result 4. Concurrent\* HIV/AIDS Diagnosis among Adolescents (13-21 years) Living with HIV/AIDS (N=1,731), by Period of HIV Diagnosis and HIV Transmission Risks, NYC, Reported through 2003

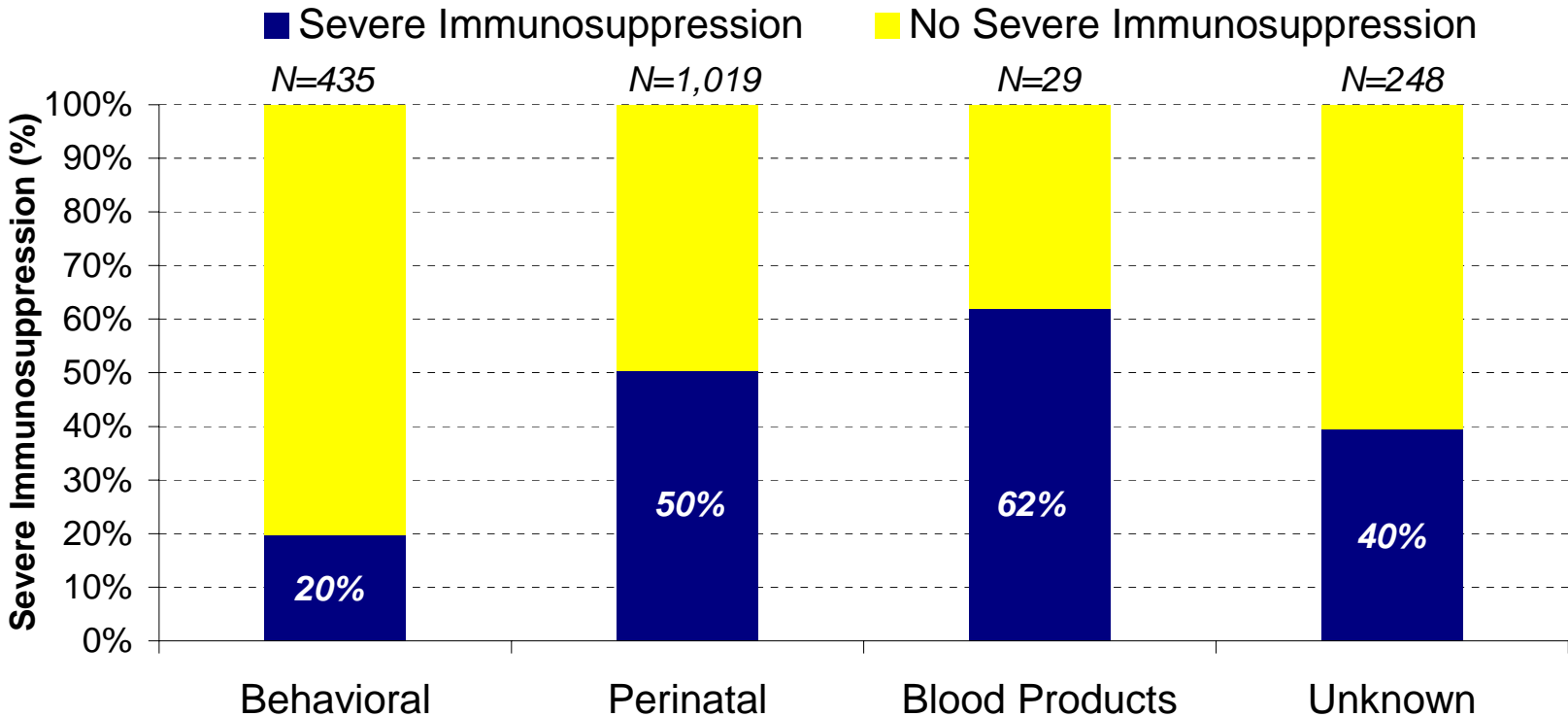


\* AIDS diagnosis within 31 days after the HIV diagnosis.

Overall in our study, 8% of living adolescents with behavioral risk had a concurrent HIV/AIDS diagnosis, 17% with perinatal risk, 31% with blood-product risk, and 15% with unknown risk.



# Result 5. Age-Specific Severe Immunosuppression among Adolescents Living with HIV/AIDS (N=1,731), by HIV Transmission Risks, NYC, Reported through 2003



	Behavioral	Perinatal	Blood Products	Unknown
Median Age at First Severe Immunosuppression (years)	19	9	14	15
Age Range	14 - 21	0 - 20	1 - 19	6 - 21

# Result 6. First AIDS-Defining Condition (ADC) (%) among Living Adolescents Diagnosed with AIDS (N=689), NYC, Reported through 2003

	HIV Transmission Risks				Year of ADC Diagnosis		
	Behavioral (N=84)	Perinatal (N=436)	Blood Products (N=19)	Unknown (N=81)	1983-1989 (N=89)	1990-1996 (N=254)	1997-2003 (N=277)
Low CD4 (%)*	94	13	42	81	0	3	74
Opportunistic Illnesses (%)	6	87	58	19	100	97	26
Lymphoid interstitial pneumonia	0	28	5	0	33	37	<1
Pneumocystis jiroveci pneumonia	1	13	11	2	17	15	3
Recurrent bacterial infections	0	11	5	1	28	10	<1
HIV encephalopathy	0	8	5	1	7	9	3
Mycobacterium avium complex & other species disease	0	6	5	4	0	7	5
Esophageal candidiasis	0	2	0	2	0	2	3
Chronic mucocutaneous herpes simplex	1	4	11	1	2	5	2
Wasting syndrome	1	2	5	0	2	2	2
Chronic intestinal cryptosporidiosis	0	3	5	0	3	5	0
Other OIs	3	10	6	8	8	4	7

\* Low CD4 count only includes CD4 <200 after 13 years of age; additionally, Result 5 shows all adolescents with an age-specific severe immunosuppression.

# Conclusions

- This study is limited to adolescents living with HIV infection.
- In NYC, most adolescents living with HIV/AIDS (59%) were perinatally infected.
- Approximately 15% of adolescents living with HIV/AIDS had a concurrent HIV/AIDS diagnosis.
- A concurrent HIV/AIDS diagnosis suggests a diagnosis late in the course of HIV infection.
- HIV testing is crucial to identify adolescents early in the course of their disease.
- An early diagnosis is the best opportunity
  - to provide comprehensive care
  - to prevent HIV transmission to their drug use or sexual partners

## Project Staff at the NYC DOHMH

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- **Janine Brewton**
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- **Rosamond Vaivao**

- **Albert Einstein Hospital (Arye Rubinstein)**
- **Bronx Lebanon Hospital (Saroj Bakshi)**
- **University Hospital of Brooklyn (Edward Handelsman)**
- **Harlem Hospital Center (Elaine Abrams)**
- **Incarnation Children's Center (Cathy Painter)**
- **Jacobi Medical Center (Andrew Wiznia)**
- **Kings County Hospital Center (Ninad Desai)**
- **Montefiore Hospital (Nathan Litman)**
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- **North Central Bronx Hospital (Jacob Abadi)**
- **Beth Israel Medical Center (Joanna Dobroszycki)**
- **Brookdale Hospital (Mahmoud Hassanein)**
- **Lincoln Hospital (Herman Mendez)**
- **Long Island College Hospital (John Belko)**
- **Long Island Jewish Medical Center (Vincent Bonagura)**
- **Metropolitan Hospital Center (Marukh Bamji)**
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- **Queens Hospital Center (Paul Zam)**
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