HIV SURVEILLANCE ANNUAL REPORT, 2013

NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE

EXECUTIVE SUMMARY

This report presents 2013 surveillance data on the HIV epidemic in New York City (NYC). It highlights trends in the demographics of the HIV epidemic with a focus on stages of the HIV care continuum from diagnosis to the ultimate goals of linkage to care and viral suppression. New features of this report include: graphic trends in HIV diagnoses over time for key populations, measures of linkage to care and viral suppression, and measures of adherence to antiretroviral medications.

NYC continues to have one of the largest HIV epidemics in the United States, but recent trends persist, with new HIV and AIDS diagnoses, incident HIV infections and deaths among people with HIV (PWH) continuing to decline in NYC through 2013. In 2013, 2,832 people were newly diagnosed with HIV in NYC, and 1,784 people were diagnosed with AIDS. As of the end of 2013, 117,618 people had been diagnosed with HIV/AIDS, reported in NYC, and were presumed to be living. There were 1,527 deaths among NYC PWH in 2013. All populations saw declines in the number of new HIV diagnoses between 2001 and 2013, with the majority of annual declines in that period reaching statistical significance. All-cause mortality rates among PWH in NYC have also fallen dramatically since 2001, driven in large part by the steep decline in the rate of deaths attributed to HIV infection. Perinatal HIV infections remain at historically low levels in NYC.

Disparities by sex, race/ethnicity, HIV transmission risk, geography and poverty level contribute powerfully to the distribution of HIV and AIDS diagnoses, prevalence, HIV care outcomes, survival and mortality rates, incident infections, and detection of acute infections. People newly diagnosed with HIV in NYC in 2013 were predominantly male, black or Hispanic, young, men who have sex with men (MSM), or people living in relatively high-poverty areas. HIV diagnosis rates were strikingly high among black and Hispanic males and females relative to other racial/ethnic groups. PWH of color living in high-poverty neighborhoods had relatively poor short-term survival rates. MSM were overrepresented among people diagnosed in the acute, highly infectious phase of HIV infection in NYC in 2013.

The proportions of people linked to care after HIV diagnosis and of people in HIV care who achieve viral suppression have steadily climbed in NYC in recent years, to approximately three-quarters each in 2013. However, linkage to care varied substantially by transmission risk, with people with heterosexual risk and MSM experiencing higher linkage rates than people in other risk groups. Viral suppression rates varied widely across all demographic and risk groups; disparities by age showed a particularly strong pattern, with suppression rates rising sharply with increasing age. In a sample of NYC PWH in care, self-reported recent adherence to antiretroviral therapy also varied by demographic and risk subgroups.

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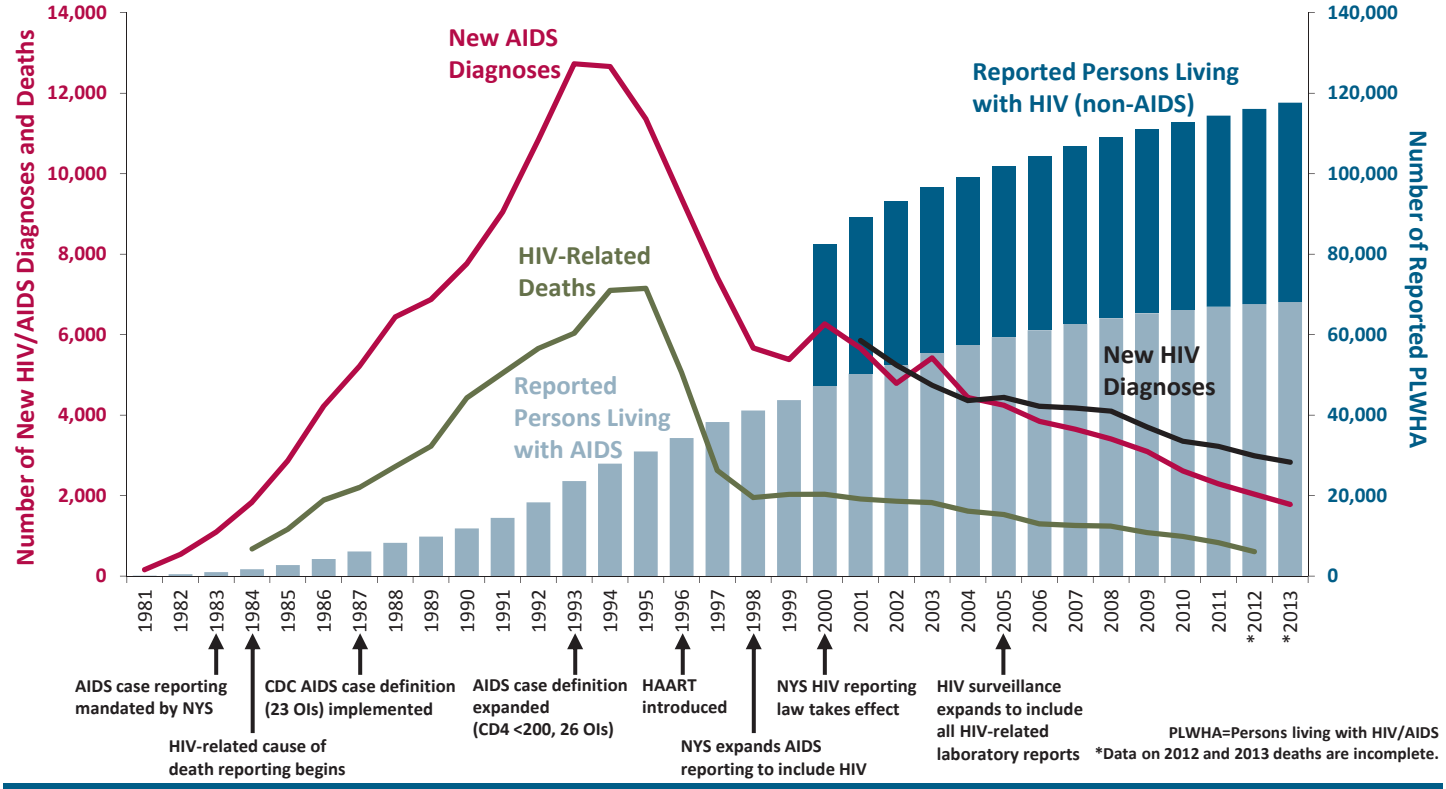
HISTORY OF THE EPIDEMIC

FIGURE 1.1: History of the HIV epidemic, NYC 1981-2013



HIV DIAGNOSES OVER TIME

FIGURE 2.1: Trends in HIV diagnoses, NYC 2001-2013

HIV Diagnoses	2001	2013	EAPC	*P* Value
Total	5,852	2,832	-5.28	<0.01
Sex				
Male	3,901	2,280	-3.76	<0.01
Female	1,951	552	-9.40	<0.01
Race/Ethnicity				
Black	3,071	1,191	-6.77	<0.01
Hispanic	1,762	955	-4.36	<0.01
White	888	517	-3.69	<0.01
Asian/Pacific Islander	115	113	0.17	0.81
Native American	13	5	-10.40	<0.01
Age Group (Years)				
0-12	85	2	-24.11	<0.01
13-19	183	114	-1.81	<0.01
20-29	1,106	1,006	0.09	0.69
30-39	2,089	662	-9.09	<0.01
40-49	1,538	589	-7.30	<0.01
50-59	629	307	-4.66	<0.01
60+	222	152	-2.22	<0.01

HIV Diagnoses	2001	2013	EAPC	*P* Value
Borough of Residence				
Bronx	1,357	565	-6.91	<0.01
Brooklyn	1,635	723	-5.34	<0.01
Manhattan	1,539	741	-5.63	<0.01
Queens	767	471	-3.90	<0.01
Staten Island	105	56	-6.85	<0.01
Outside NYC	349	259	-1.28	<0.01
Transmission Risk				
MSM	1,689	1,609	0.06	0.74
IDU	844	49	-18.73	<0.01
MSM & IDU	120	40	-8.32	<0.01
Heterosexual	1,450	520	-6.02	<0.01
Perinatal	86	2	-23.48	<0.01

EAPC = Estimated annual percent change
IDU = Injection drug use history
MSM = Men who have sex with men

The number of new HIV diagnoses reported in New York City from 2001 to 2013 decreased overall and by sex, race/ethnicity, age at diagnosis, borough of residence at diagnosis, and transmission risk. This decrease is significant (*P* value <0.01) for all subgroups except Asian/Pacific Islanders, 20-29 year olds, and MSM.

DEMOGRAPHIC AND CLINICAL CHARACTERISTICS

TABLE 3.1: HIV/AIDS diagnoses and deaths occurring January 1, 2013 through December 31, 2013; and persons diagnosed with HIV/AIDS, reported in New York City, and presumed to be living as of December 31, 2013

	HIV diagnoses[1]							AIDS diagnoses[3]		PLWHA as of 12/31/2013		Deaths[4]	
	Total		Without AIDS		Concurrent with AIDS diagnosis[2]								
	N	%	N	%	N	%	Row %	N	%	N	%	N	%
Total	2,832	100.0	2,258	100.0	574	100.0	20.3	1,784	100.0	117,618	100.0	1,527	100.0
Sex													
Male	2,280	80.5	1,836	81.3	444	77.4	19.5	1,348	75.6	84,848	72.1	1,065	69.7
Female	552	19.5	422	18.7	130	22.6	23.6	436	24.4	32,770	27.9	462	30.3
Race/Ethnicity[5]													
Black	1,191	42.1	929	41.1	262	45.6	22.0	912	51.1	52,186	44.4	757	49.6
Hispanic	955	33.7	760	33.7	195	34.0	20.4	570	32.0	38,063	32.4	541	35.4
White	517	18.3	434	19.2	83	14.5	16.1	235	13.2	24,376	20.7	206	13.5
Asian/Pacific Islander	113	4.0	86	3.8	27	4.7	23.9	51	2.9	2,184	1.9	17	1.1
Native American	5	0.2	5	0.2	0	0.0	0.0	3	0.2	253	0.2	4	0.3
Multiracial	51	1.8	44	1.9	7	1.2	13.7	13	0.7	168	0.1	2	0.1
Unknown	0	0.0	0	0.0	0	0.0	0.0	0	0.0	388	0.3	0	0.0
Age group (years)[6]													
0-12	2	0.1	2	0.1	0	0.0	0.0	0	0.0	163	0.1	0	0.0
13-19	114	4.0	107	4.7	7	1.2	6.1	32	1.8	931	0.8	0	0.0
20-29	1,006	35.5	886	39.2	120	20.9	11.9	368	20.6	9,294	7.9	41	2.7
30-39	662	23.4	537	23.8	125	21.8	18.9	419	23.5	16,821	14.3	74	4.8
40-49	589	20.8	417	18.5	172	30.0	29.2	492	27.6	33,119	28.2	322	21.1
50-59	307	10.8	213	9.4	94	16.4	30.6	324	18.2	37,390	31.8	576	37.7
60+	152	5.4	96	4.3	56	9.8	36.8	149	8.4	19,900	16.9	514	33.7
Borough of residence[7]													
Bronx	565	20.0	452	20.0	113	19.7	20.0	398	22.3	27,349	23.3	479	31.4
Brooklyn	723	25.5	561	24.8	162	28.2	22.4	473	26.5	28,860	24.5	442	28.9
Manhattan	741	26.2	597	26.4	144	25.1	19.4	423	23.7	31,710	27.0	348	22.8
Queens	471	16.6	366	16.2	105	18.3	22.3	269	15.1	17,496	14.9	155	10.2
Staten Island	56	2.0	45	2.0	11	1.9	19.6	27	1.5	2,239	1.9	61	4.0
Outside NYC	259	9.1	221	9.8	38	6.6	14.7	140	7.8	9,761	8.3	39	2.6
Unknown	17	0.6	16	0.7	1	0.2	5.9	54	3.0	203	0.2	3	0.2
Area-based poverty level[8]													
Low poverty (<10% below FPL)	241	8.5	189	8.4	52	9.1	21.6	128	7.2	12,479	10.6	107	7.0
Medium poverty (10 to <20% below FPL)	782	27.6	627	27.8	155	27.0	19.8	462	25.9	31,467	26.8	294	19.3
High poverty (20 to <30% below FPL)	807	28.5	635	28.1	172	30.0	21.3	465	26.1	29,879	25.4	457	29.9
Very high poverty (≥30% below FPL)	717	25.3	562	24.9	155	27.0	21.6	528	29.6	32,345	27.5	617	40.4
Area-based poverty level not available	285	10.1	245	10.9	40	7.0	14.0	201	11.3	11,448	9.7	52	3.4
Transmission risk													
Men who have sex with men (MSM)	1,609	56.8	1,347	59.7	262	45.6	16.3	767	43.0	43,940	37.4	299	19.6
Injection drug use history (IDU)	49	1.7	35	1.6	14	2.4	28.6	111	6.2	16,649	14.2	465	30.5
MSM & IDU	40	1.4	36	1.6	4	0.7	10.0	19	1.1	2,522	2.1	55	3.6
Heterosexual[9]	520	18.4	397	17.6	123	21.4	23.7	386	21.6	23,192	19.7	284	18.6
Perinatal	2	0.1	2	0.1	0	0.0	0.0	26	1.5	2,515	2.1	6	0.4
Other	0	0.0	0	0.0	0	0.0	0.0	0	0.0	214	0.2	11	0.7
Unknown	612	21.6	441	19.5	171	29.8	27.9	475	26.6	28,586	24.3	407	26.7
Clinical status as of 12/31/2013													
HIV (non-AIDS)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	49,518	42.1	253	16.6
AIDS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	68,100	57.9	1,274	83.4

PLWHA=Persons living with HIV/AIDS; FPL=Federal Poverty Level; n/a=Not applicable. All percents are column percents unless otherwise indicated.
[1]Excludes persons known to have been diagnosed outside of NYC. [2]HIV diagnosed concurrently with AIDS (within 31 days of HIV diagnosis). Row percent is percent of total HIV diagnoses that were concurrent with AIDS diagnoses. [3]AIDS was diagnosed in 2013 and includes concurrent HIV/AIDS diagnoses. [4]Includes deaths from any cause in persons with HIV/AIDS. Death data for 2013 are incomplete. [5]For technical notes on race/ethnicity: http://www.nyc.gov/html/doh/html/data/hivtables.shtml#abbrev. [6]For HIV and AIDS diagnoses, age at diagnosis; for PLWHA, age as of December 31, 2013; and for deaths, age at death. [7]For HIV and AIDS diagnoses, residence at diagnosis. For PLWHA and deaths, residence based on most recent record available (most recent record is >5 years old for 25% of persons with HIV/AIDS in 2013). [8]Area-based poverty based on NYC ZIP code of residence at diagnosis or most recent residence (*see footnote 7*). [9]Includes persons who had heterosexual sex with a person they know to be HIV-infected, an injection drug user, or a person who has received blood products. For females only, also includes history of prostitution, multiple sex partners, sexually transmitted disease, crack/cocaine use, sex with a bisexual male, probable heterosexual transmission as noted in medical chart, or sex with a male and negative history of injection drug use.

In 2013, there were 2,832 new HIV diagnoses and 1,784 new AIDS diagnoses in New York City. Among persons newly diagnosed with HIV, 574 (20.3%) were diagnosed concurrently with AIDS. As of the end of 2013, 117,618 persons had been diagnosed with HIV/AIDS and reported in New York City and were presumed to be living. In 2013, there were 1,527 deaths among persons with HIV.

GEOGRAPHIC DISTRIBUTION OF HIV

FIGURE 4.1: Poverty level, NYC 2008-2012

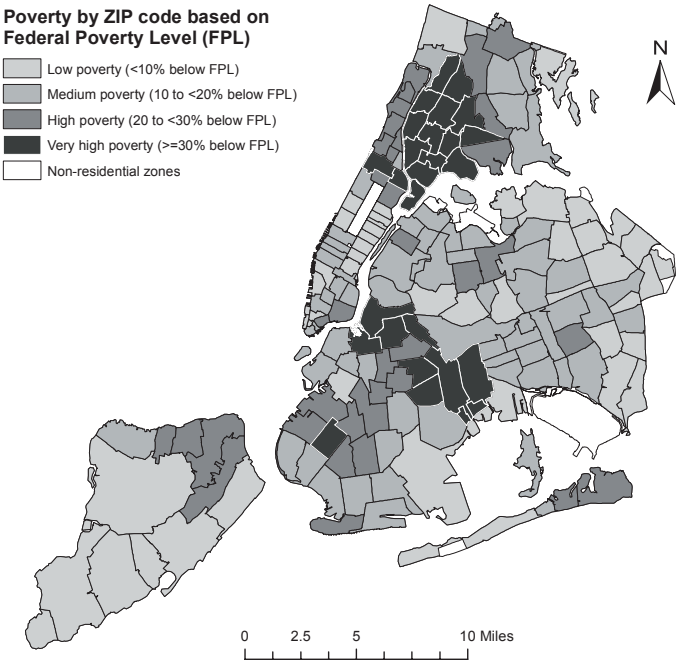
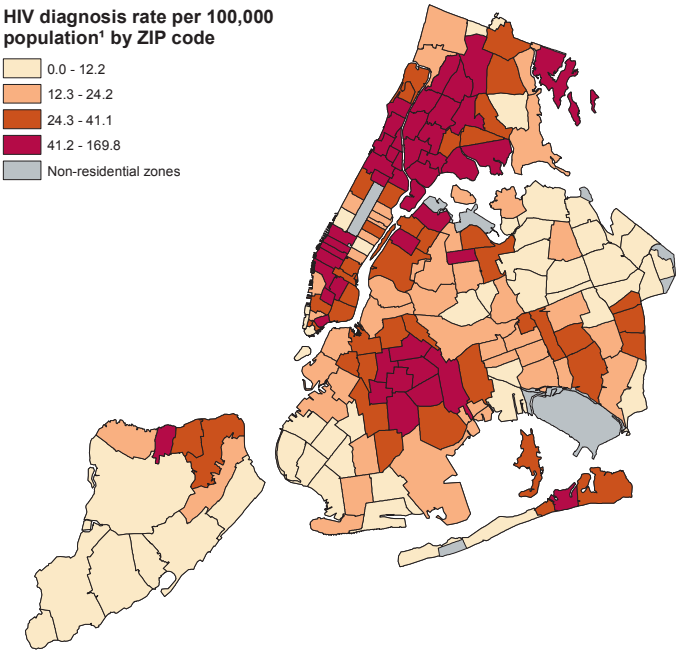


FIGURE 4.2: HIV diagnosis rates, NYC 2013



ZIP codes in the Chelsea-Clinton, Central Harlem-Morningside Heights and Williamsburg-Bushwick neighborhoods had the highest HIV diagnosis rates in 2013 (Figure 4.2). In 2013, ZIP codes in Chelsea-Clinton, West Queens and East Harlem had the highest HIV prevalence (Figure 4.3), and ZIP codes in Lower Manhattan, Stapleton-St. George and Willowbrook had the highest mortality among persons with HIV (Figure 4.4). Many ZIP codes with high HIV diagnosis rates also had among the highest poverty rates (Figure 4.1), including Central Harlem-Morningside Heights, Williamsburg-Bushwick and Bedford Stuyvesant-Crown Heights. However, the Chelsea-Clinton neighborhood was the exception with the highest HIV diagnosis rates but relatively low poverty and mortality rates.

FIGURE 4.3: HIV prevalence, NYC 2013

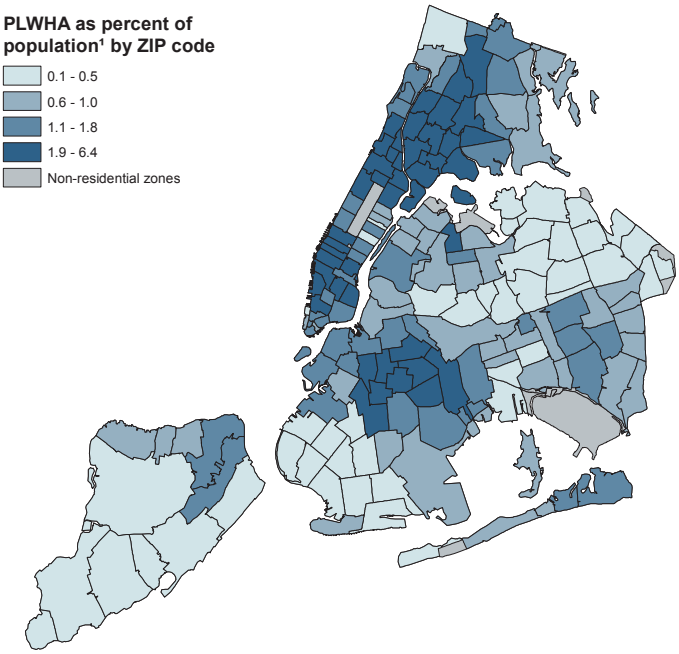
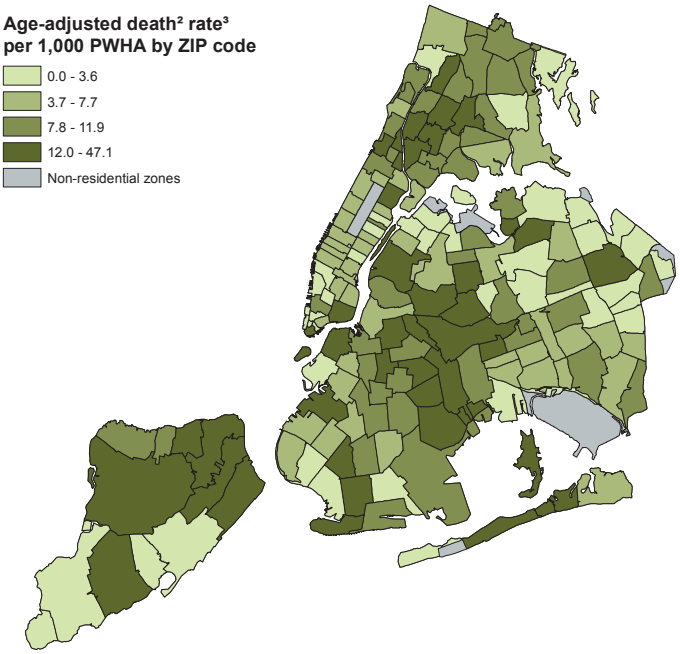


FIGURE 4.4: Age-adjusted death rates among persons with HIV/AIDS, NYC 2013



PLWHA=Persons living with HIV/AIDS
[1] Rates calculated using the intercensal 2013 NYC population.
[2] 2013 death data are incomplete.
[3] Age-adjusted to the NYC Census 2010 population.

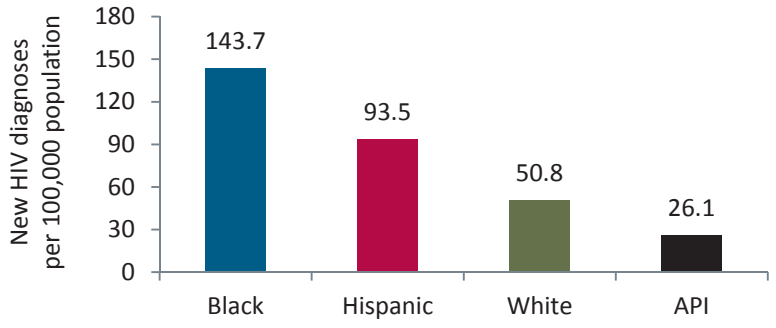
HIV AMONG MALES

TABLE 5.1: HIV/AIDS diagnoses and deaths among males, January 1, 2013 through December 31, 2013; and males diagnosed with HIV/AIDS, reported in New York City, and presumed to be living as of December 31, 2013

	HIV diagnoses[1]							AIDS diagnoses[3]		PLWHA as of 12/31/2013		Deaths[4]	
	Total		Without AIDS		Concurrent with AIDS diagnosis[2]								
	N	%	N	%	N	%	Row %	N	%	N	%	N	%
Total	2,280	100.0	1,836	100.0	444	100.0	19.5	1,348	100.0	84,848	100.0	1,065	100.0
Race/Ethnicity[5]													
Black	874	38.3	689	37.5	185	41.7	21.2	647	48.0	33,035	38.9	490	46.0
Hispanic	785	34.4	631	34.4	154	34.7	19.6	431	32.0	27,469	32.4	390	36.6
White	474	20.8	399	21.7	75	16.9	15.8	214	15.9	21,915	25.8	168	15.8
Asian/Pacific Islander	103	4.5	77	4.2	26	5.9	25.2	46	3.4	1,817	2.1	12	1.1
Native American	4	0.2	4	0.2	0	0.0	0.0	2	0.1	182	0.2	3	0.3
Multiracial	40	1.8	36	2.0	4	0.9	10.0	8	0.6	132	0.2	2	0.2
Unknown	0	0.0	0	0.0	0	0.0	0.0	0	0.0	298	0.4	0	0.0
Age group (years)[6]													
0-12	1	0.0	1	0.1	0	0.0	0.0	0	0.0	78	0.1	0	0.0
13-19	87	3.8	81	4.4	6	1.4	6.9	20	1.5	469	0.6	0	0.0
20-29	898	39.4	793	43.2	105	23.6	11.7	317	23.5	7,199	8.5	32	3.0
30-39	535	23.5	434	23.6	101	22.7	18.9	319	23.7	12,369	14.6	55	5.2
40-49	441	19.3	308	16.8	133	30.0	30.2	364	27.0	23,480	27.7	203	19.1
50-59	219	9.6	157	8.6	62	14.0	28.3	224	16.6	26,533	31.3	394	37.0
60+	99	4.3	62	3.4	37	8.3	37.4	104	7.7	14,720	17.3	381	35.8
Borough of residence[7]													
Bronx	393	17.2	315	17.2	78	17.6	19.8	278	20.6	16,899	19.9	321	30.1
Brooklyn	550	24.1	434	23.6	116	26.1	21.1	335	24.9	19,071	22.5	293	27.5
Manhattan	640	28.1	526	28.6	114	25.7	17.8	345	25.6	26,604	31.4	270	25.4
Queens	409	17.9	316	17.2	93	20.9	22.7	219	16.2	12,726	15.0	109	10.2
Staten Island	44	1.9	38	2.1	6	1.4	13.6	17	1.3	1,459	1.7	38	3.6
Outside NYC	229	10.0	193	10.5	36	8.1	15.7	119	8.8	7,925	9.3	32	3.0
Unknown	15	0.7	14	0.8	1	0.2	6.7	35	2.6	164	0.2	2	0.2
Area-based poverty level[8]													
Low poverty (<10% below FPL)	211	9.3	168	9.2	43	9.7	20.4	108	8.0	10,502	12.4	88	8.3
Medium poverty (10 to <20% below FPL)	658	28.9	534	29.1	124	27.9	18.8	365	27.1	24,028	28.3	218	20.5
High poverty (20 to <30% below FPL)	638	28.0	514	28.0	124	27.9	19.4	334	24.8	20,563	24.2	303	28.5
Very high poverty (≥30% below FPL)	520	22.8	405	22.1	115	25.9	22.1	382	28.3	20,485	24.1	415	39.0
Area-based poverty level not available	253	11.1	215	11.7	38	8.6	15.0	159	11.8	9,270	10.9	41	3.8
Transmission risk													
Men who have sex with men (MSM)	1,609	70.6	1,347	73.4	262	59.0	16.3	767	56.9	43,940	51.8	299	28.1
Injection drug use history (IDU)	28	1.2	21	1.1	7	1.6	25.0	73	5.4	11,108	13.1	321	30.1
MSM & IDU	40	1.8	36	2.0	4	0.9	10.0	19	1.4	2,522	3.0	55	5.2
Heterosexual[9]	109	4.8	72	3.9	37	8.3	33.9	103	7.6	5,940	7.0	98	9.2
Perinatal	1	0.0	1	0.1	0	0.0	0.0	10	0.7	1,230	1.4	3	0.3
Other	0	0.0	0	0.0	0	0.0	0.0	0	0.0	114	0.1	4	0.4
Unknown	493	21.6	359	19.6	134	30.2	27.2	376	27.9	19,994	23.6	285	26.8
Clinical status as of 12/31/2013													
HIV (non-AIDS)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	36,113	42.6	190	17.8
AIDS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	48,735	57.4	875	82.2

PLWHA=Persons living with HIV/AIDS; FPL=Federal Poverty Level; n/a=Not applicable. All percents are column percents unless otherwise indicated.
Footnotes appear at the bottom of Table 3.1.

FIGURE 5.1: HIV[1] diagnosis rates[2] among 13-59 year old males by race/ethnicity[3], NYC 2013



In 2013, the HIV diagnosis rate among black males was 1.5 times higher than the rate among Hispanic males and over 2 times higher than the rate among white males.

API=Asian/Pacific Islander
[1]Includes diagnoses of HIV without AIDS and HIV concurrent with AIDS.
[2]Rates calculated using the intercensal 2013 NYC population.
[3]Native American and multiracial groups not shown because of small numbers.

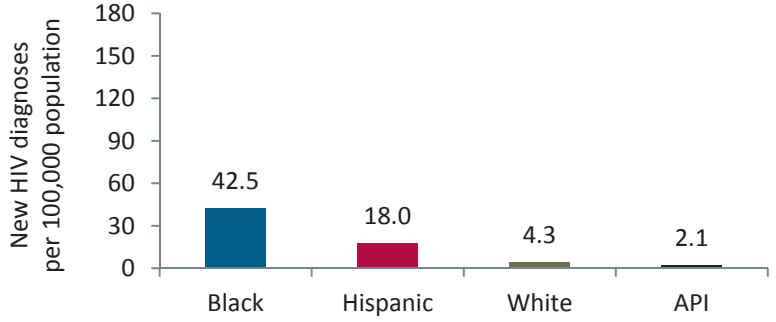
HIV AMONG FEMALES

TABLE 6.1: HIV/AIDS diagnoses and deaths among females, January 1, 2013 through December 31, 2013; and females diagnosed with HIV/AIDS, reported in New York City, and presumed to be living as of December 31, 2013

	HIV diagnoses[1]							AIDS diagnoses[3]		PLWHA as of 12/31/2013		Deaths[4]	
	Total		Without AIDS		Concurrent with AIDS diagnosis[2]								
	N	%	N	%	N	%	Row %	N	%	N	%	N	%
Total	552	100.0	422	100.0	130	100.0	23.6	436	100.0	32,770	100.0	462	100.0
Race/Ethnicity[5]													
Black	317	57.4	240	56.9	77	59.2	24.3	265	60.8	19,151	58.4	267	57.8
Hispanic	170	30.8	129	30.6	41	31.5	24.1	139	31.9	10,594	32.3	151	32.7
White	43	7.8	35	8.3	8	6.2	18.6	21	4.8	2,461	7.5	38	8.2
Asian/Pacific Islander	10	1.8	9	2.1	1	0.8	10.0	5	1.1	367	1.1	5	1.1
Native American	1	0.2	1	0.2	0	0.0	0.0	1	0.2	71	0.2	1	0.2
Multiracial	11	2.0	8	1.9	3	2.3	27.3	5	1.1	36	0.1	0	0.0
Unknown	0	0.0	0	0.0	0	0.0	0.0	0	0.0	90	0.3	0	0.0
Age group (years)[6]													
0-12	1	0.2	1	0.2	0	0.0	0.0	0	0.0	85	0.3	0	0.0
13-19	27	4.9	26	6.2	1	0.8	3.7	12	2.8	462	1.4	0	0.0
20-29	108	19.6	93	22.0	15	11.5	13.9	51	11.7	2,095	6.4	9	1.9
30-39	127	23.0	103	24.4	24	18.5	18.9	100	22.9	4,452	13.6	19	4.1
40-49	148	26.8	109	25.8	39	30.0	26.4	128	29.4	9,639	29.4	119	25.8
50-59	88	15.9	56	13.3	32	24.6	36.4	100	22.9	10,857	33.1	182	39.4
60+	53	9.6	34	8.1	19	14.6	35.8	45	10.3	5,180	15.8	133	28.8
Borough of residence[7]													
Bronx	172	31.2	137	32.5	35	26.9	20.3	120	27.5	10,450	31.9	158	34.2
Brooklyn	173	31.3	127	30.1	46	35.4	26.6	138	31.7	9,789	29.9	149	32.3
Manhattan	101	18.3	71	16.8	30	23.1	29.7	78	17.9	5,106	15.6	78	16.9
Queens	62	11.2	50	11.8	12	9.2	19.4	50	11.5	4,770	14.6	46	10.0
Staten Island	12	2.2	7	1.7	5	3.8	41.7	10	2.3	780	2.4	23	5.0
Outside NYC	30	5.4	28	6.6	2	1.5	6.7	21	4.8	1,836	5.6	7	1.5
Unknown	2	0.4	2	0.5	0	0.0	0.0	19	4.4	39	0.1	1	0.2
Area-based poverty level[8]													
Low poverty (<10% below FPL)	30	5.4	21	5.0	9	6.9	30.0	20	4.6	1,977	6.0	19	4.1
Medium poverty (10 to <20% below FPL)	124	22.5	93	22.0	31	23.8	25.0	97	22.2	7,439	22.7	76	16.5
High poverty (20 to <30% below FPL)	169	30.6	121	28.7	48	36.9	28.4	131	30.0	9,316	28.4	154	33.3
Very high poverty (≥30% below FPL)	197	35.7	157	37.2	40	30.8	20.3	146	33.5	11,860	36.2	202	43.7
Area-based poverty level not available	32	5.8	30	7.1	2	1.5	6.3	42	9.6	2,178	6.6	11	2.4
Transmission risk													
Injection drug use history	21	3.8	14	3.3	7	5.4	33.3	38	8.7	5,541	16.9	144	31.2
Heterosexual[9]	411	74.5	325	77.0	86	66.2	20.9	283	64.9	17,252	52.6	186	40.3
Perinatal	1	0.2	1	0.2	0	0.0	0.0	16	3.7	1,285	3.9	3	0.6
Other	0	0.0	0	0.0	0	0.0	0.0	0	0.0	100	0.3	7	1.5
Unknown	119	21.6	82	19.4	37	28.5	31.1	99	22.7	8,592	26.2	122	26.4
Clinical status as of 12/31/2013													
HIV (non-AIDS)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	13,405	40.9	63	13.6
AIDS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	19,365	59.1	399	86.4

PLWHA=Persons living with HIV/AIDS; FPL=Federal Poverty Level; n/a=Not applicable. All percents are column percents unless otherwise indicated.
Footnotes appear at the bottom of Table 3.1.

FIGURE 6.1: HIV[1] diagnosis rates[2] among 13-59 year old females by race/ethnicity[3], NYC 2013

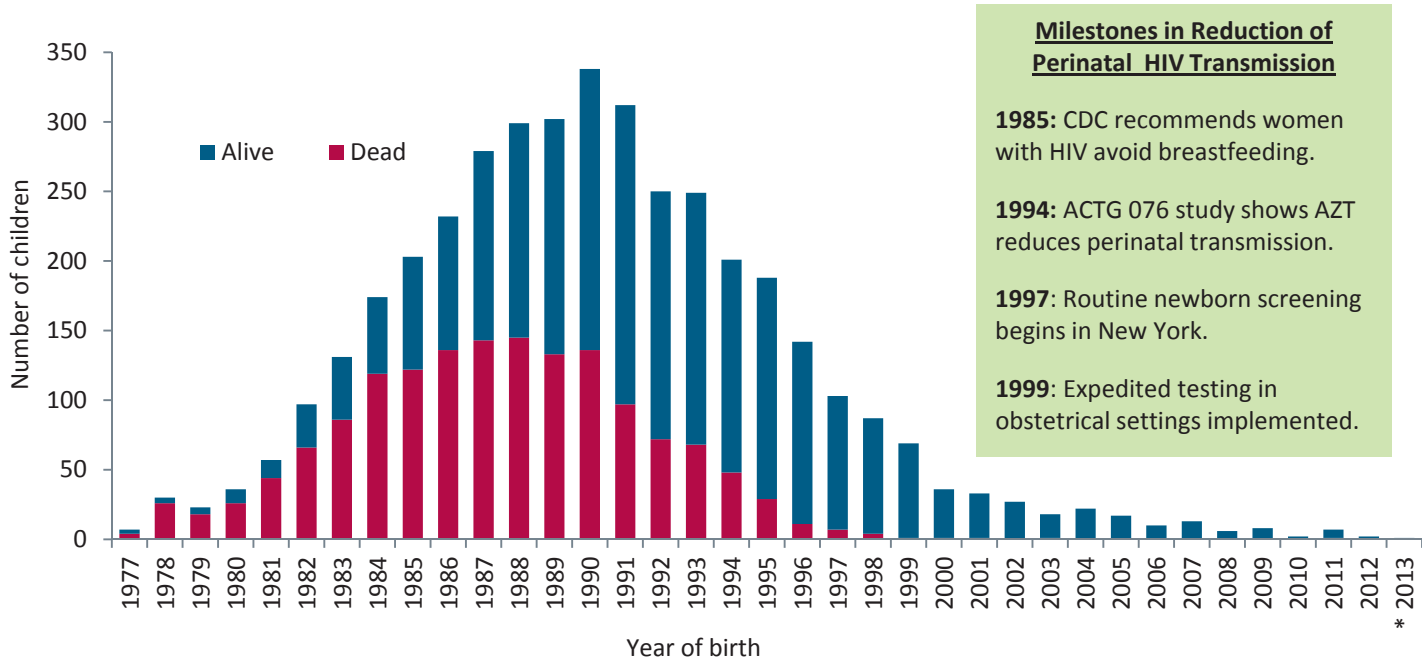


In 2013, the HIV diagnosis rate among black females was over 2 times higher than the rate among Hispanic females and over 9 times higher than the rate among white females.

API=Asian/Pacific Islander
[1]Includes diagnoses of HIV without AIDS and HIV concurrent with AIDS.
[2]Rates calculated using the intercensal 2013 NYC population.
[3]Native American and multiracial groups not shown because of small numbers.

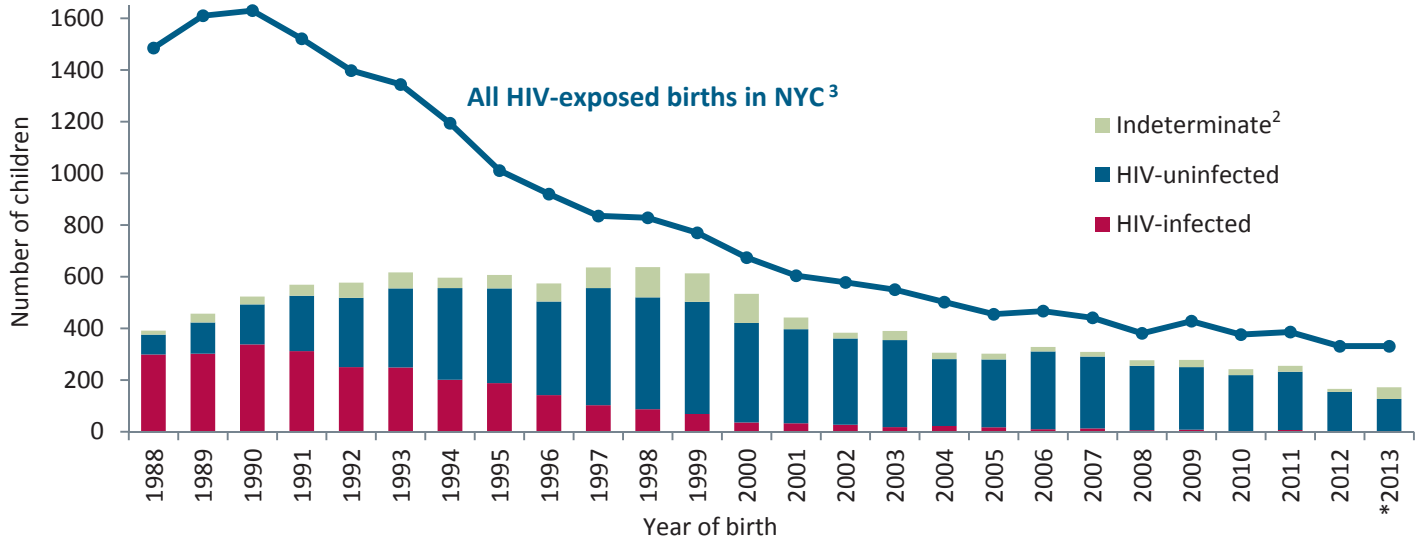
HIV AMONG CHILDREN

FIGURE 7.1: Perinatally HIV-infected children (N=4,011), by year of birth and current vital status, NYC 1977-2013*



In NYC, the number of perinatally HIV-infected infants peaked in 1990 (n=338), and was followed by a steep decline in the annual number of new infections (Figure 7.1). During 2008-2012, there were 25 perinatally-infected infants born in NYC. The decrease since the early 1990s is attributed to a decrease in the number of HIV-infected women delivering, the introduction of antiretroviral therapies to prevent mother-to-child transmission, recommendations for universal counseling and voluntary HIV testing of pregnant women, and routine rapid testing at labor and delivery for women whose HIV status is unknown. The number of children born to HIV-infected mothers has steadily decreased ranging from 328 births in 2006 to 166 births in 2012 (Figure 7.2). Since 2002, nearly 90% of infants born to HIV-infected mothers each year have remained HIV-uninfected.

FIGURE 7.2: All HIV-exposed births in NYC and current HIV status of children born to HIV-infected women at select NYC medical facilities[1], by year of birth, NYC 1988-2013*



*Data for 2013 are incomplete due to reporting lag. Data reported as of July 2014.
[1]Includes data collected at high-volume NYC medical facilities that care for the majority of HIV-exposed and infected children.
[2]Children born to HIV-infected mothers are followed for 2 years after birth to determine HIV status. HIV status is indeterminate if mother and/or child are lost to follow-up.
[3]Data from the New York State Comprehensive Newborn Screening Program.

HIV CARE

FIGURE 8.1: Timely linkage to HIV care[1] among newly diagnosed persons, NYC 2009-2013

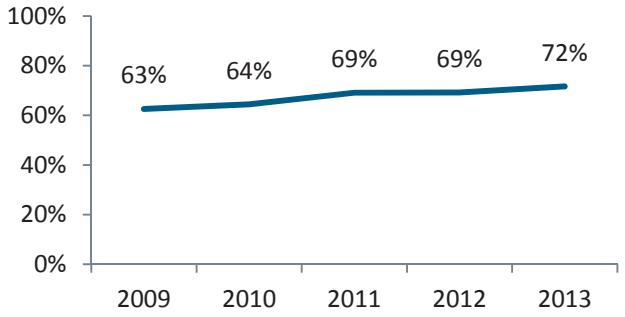
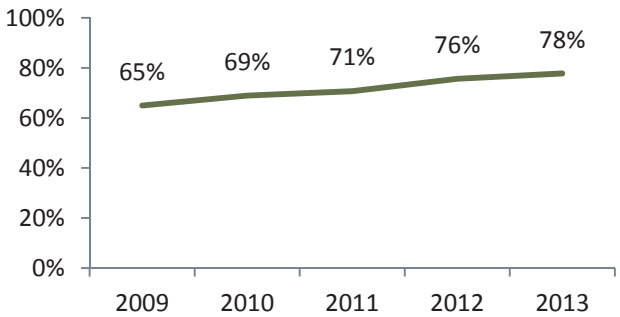


FIGURE 8.2: Viral suppression[2] among persons in HIV medical care[3], NYC 2009-2013



Timely linkage to HIV care among newly diagnosed persons and viral suppression among persons in HIV medical care steadily increased in New York City from 2009 to 2013.

FIGURE 8.3: Timely linkage to HIV care[1] among newly diagnosed persons, NYC 2013

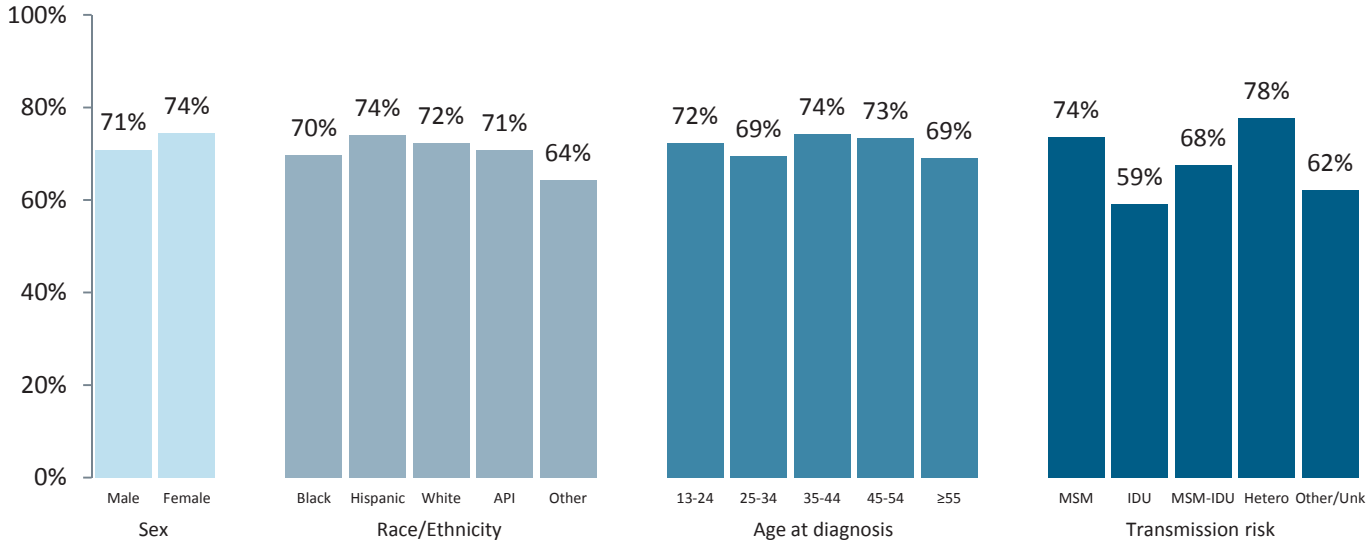
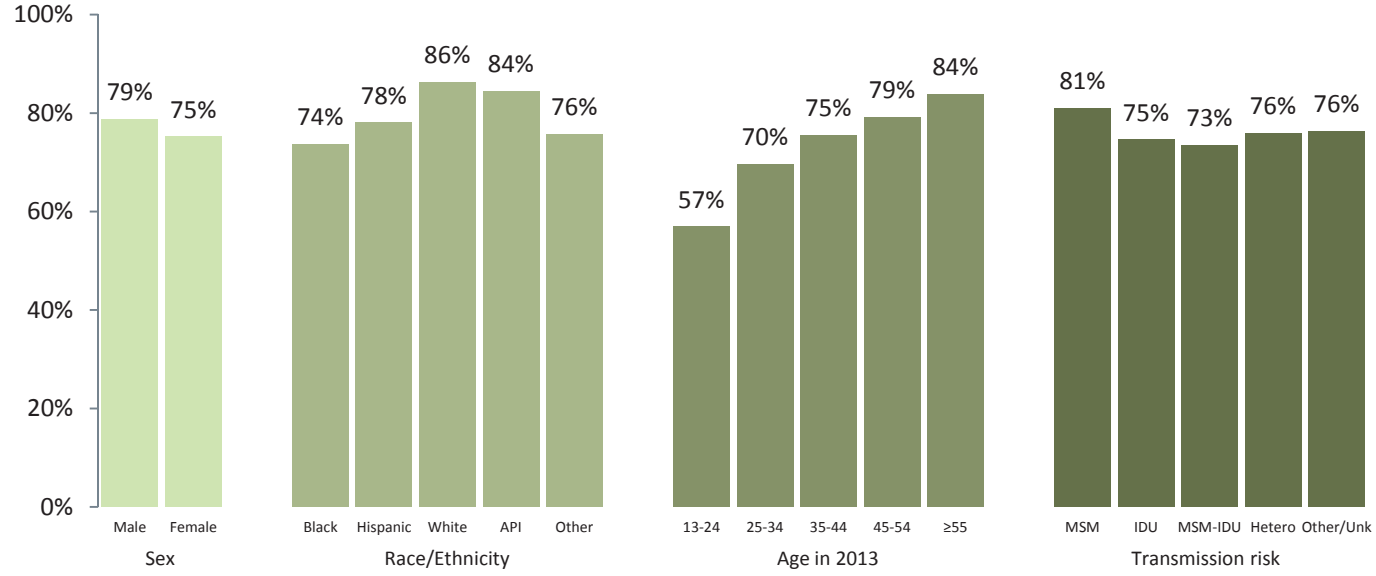


FIGURE 8.4: Viral suppression[2] among persons in HIV medical care[3], NYC 2013



API=Asian/Pacific Islander; MSM=Men who have sex with men; IDU=Injection drug use history

[1]HIV viral load (VL) or CD4 test drawn within 3 months (91 days) of HIV diagnosis, following a 7-day lag.

[2]Last HIV VL value in 2013 was ≤200 copies/mL.

[3]At least one HIV VL/CD4 in 2013.

SURVIVAL AMONG PERSONS WITH HIV

FIGURE 9.1: Survival among persons newly diagnosed with HIV and residing in low-poverty areas[1], by race/ethnicity[2], NYC 2008-2012

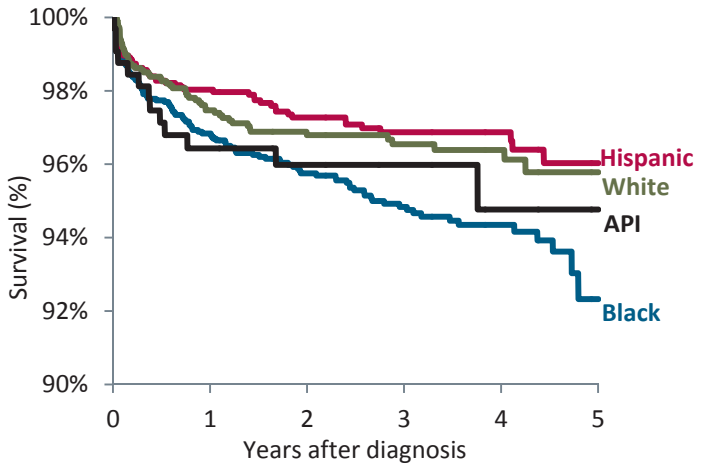
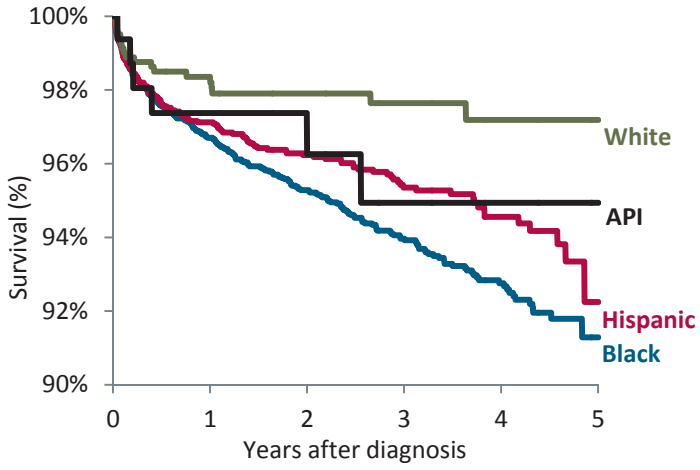


FIGURE 9.2: Survival among persons newly diagnosed with HIV and residing in high-poverty areas[1], by race/ethnicity[2], NYC 2008-2012



API=Asian/Pacific Islander

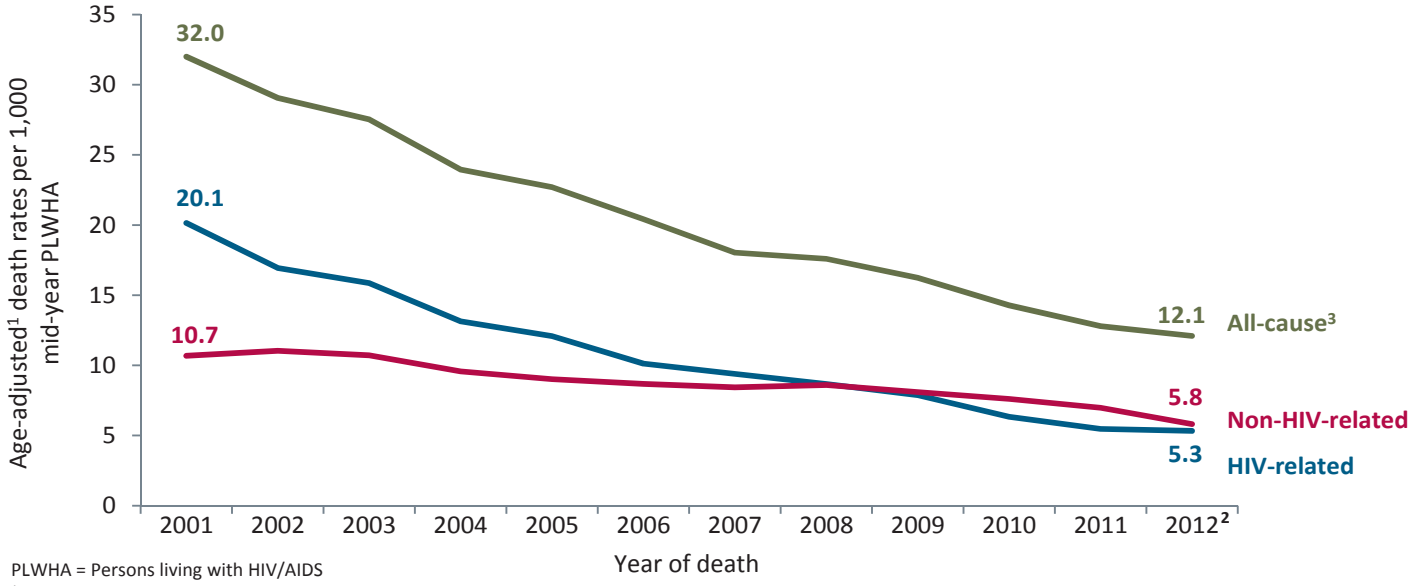
[1]Poverty level based on NYC ZIP code of residence at diagnosis (if available). Curves include persons diagnosed with HIV from 2008 through 2012 and followed through December 31, 2012; persons not known to have died were censored on December 31, 2012. Low-poverty area defined as <20% of population below Federal Poverty Level; high-poverty area defined as ≥20% of population below Federal Poverty Level.

[2]Native American and multiracial groups not shown because of small numbers.

Disparities in survival by race/ethnicity persist in NYC (all differences $p<0.05$), with blacks having the poorest short-term survival after HIV diagnosis. Racial/ethnic disparities are evident in both low-poverty and high-poverty areas, but are most pronounced among those living in high-poverty areas at the time of HIV diagnosis (Figures 9.1 and 9.2).

MORTALITY AMONG PERSONS WITH HIV

FIGURE 10.1: Age-adjusted death rates among persons with HIV/AIDS, by HIV-related and non-HIV-related cause of death, NYC 2001-2012



PLWHA = Persons living with HIV/AIDS

[1]Age-adjusted to the NYC Census 2010 population. Persons newly diagnosed with HIV at death were excluded from the numerator.

[2]2012 deaths outside NYC are incomplete.

[3]Includes persons with unknown cause of death (4% of all deaths).

The overall death rate among persons diagnosed with HIV/AIDS decreased by 62% from 2001 to 2012. Although the rates of both HIV-related and non-HIV-related deaths decreased during this time, the overall decrease was driven largely by the decline in deaths attributed to HIV.

HIV INCIDENCE

FIGURE 11.1: All new HIV diagnoses and estimated HIV incidence[1], NYC 2009-2013

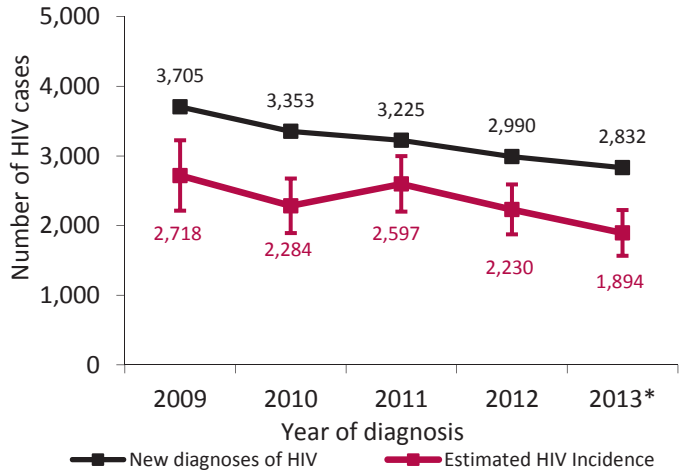
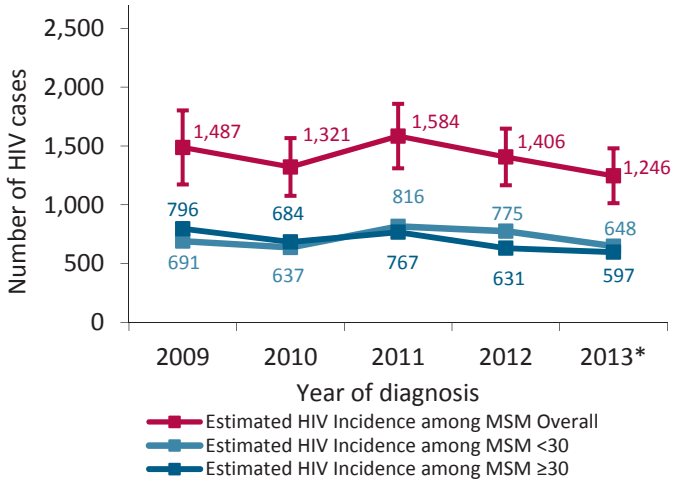


FIGURE 11.2: Estimated HIV incidence[1] among men who have sex with men (MSM)[2] overall and by age group, NYC 2009-2013



*2013 incidence data are preliminary.
[1]Estimates generated September 2014, by the CDC Stratified Extrapolation Approach (SEA). SEA combines results from the Serologic Testing Algorithm for Recent Seroconversion (STARHS) with data on demographic characteristics, risk factor, initial diagnosis date, testing and treatment history that are contained in the HIV surveillance registry. Unknown risk factor was imputed using the Multiple Imputation procedure in SAS v9.2. Surveillance data used in these estimates were reported through June 30, 2014.
[2]MSM includes persons reporting both MSM and injection drug use history.

New diagnoses overall are holding steady or declining in recent years in NYC. Citywide, estimated incidence declined significantly from 2009 to 2013 (Figure 11.1). Incidence in MSM also declined but was not statistically significant. Among young MSM, the decline in 2013 follows periods of alternating increase and decrease (Figure 11.2).

ACUTE HIV INFECTION

FIGURE 12.1: Acute HIV infection, by transmission risk category, NYC 2009-2013

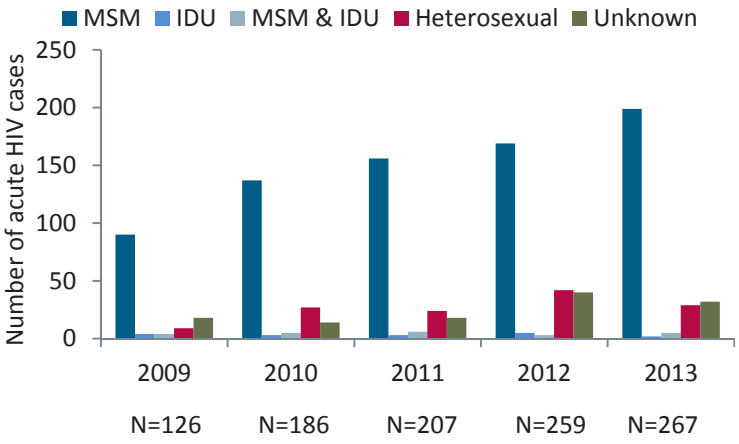
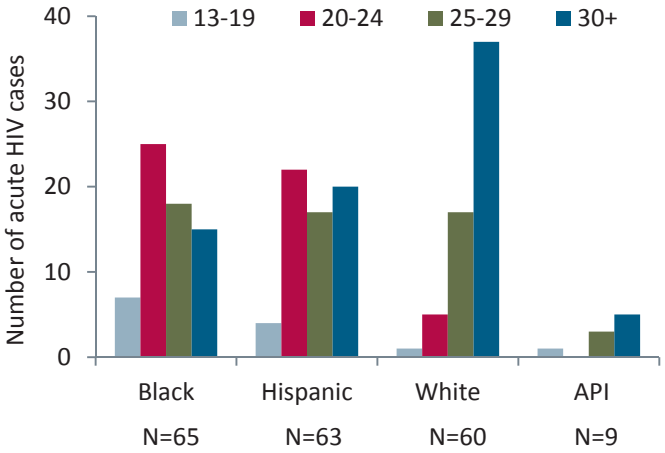


FIGURE 12.2 : Acute HIV infection among MSM, by race/ethnicity[1] and age group, NYC 2013



MSM=Men who have sex with men; IDU=Injection drug use history; API=Asian/Pacific Islander
[1]Native American and multiracial groups are not shown because of small numbers.

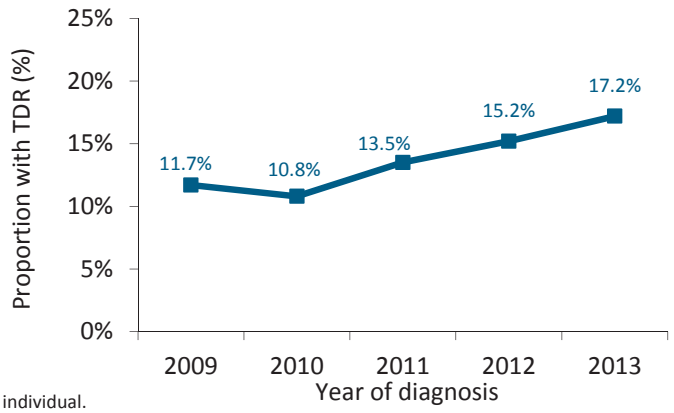
Acute HIV infection (AHI) is the early, highly-infectious phase of HIV infection. Persons diagnosed during the acute phase represent the leading edge of the HIV epidemic. From 2009-2013, the number of AHI cases ascertained by the NYC DOHMH increased substantially (Figure 12.1). Each year, the majority of AHI cases were MSM, who are targeted for AHI screening at DOHMH STD clinics. Among MSM with AHI, a greater proportion of black and Hispanic MSM were young compared with white and API MSM (Figure 12.2).

TRANSMITTED DRUG RESISTANCE

TABLE 13.1: Number of new HIV diagnoses with a genotype within 3 months of diagnosis, NYC 2009-2013

	Total Diagnoses	Tested within 3 months		Not tested within 3 months	
	N	N	Row %	N	Row %
Year of diagnosis					
2009	3,705	1,458	39.4	2,247	60.6
2010	3,353	1,461	43.6	1,892	56.4
2011	3,225	1,512	46.9	1,713	53.1
2012	2,990	1,505	50.3	1,485	49.7
2013	2,832	1,680	59.3	1,152	40.7

FIGURE 13.1: Proportion of new HIV diagnoses with transmitted drug resistance (TDR)[1], NYC 2009-2013

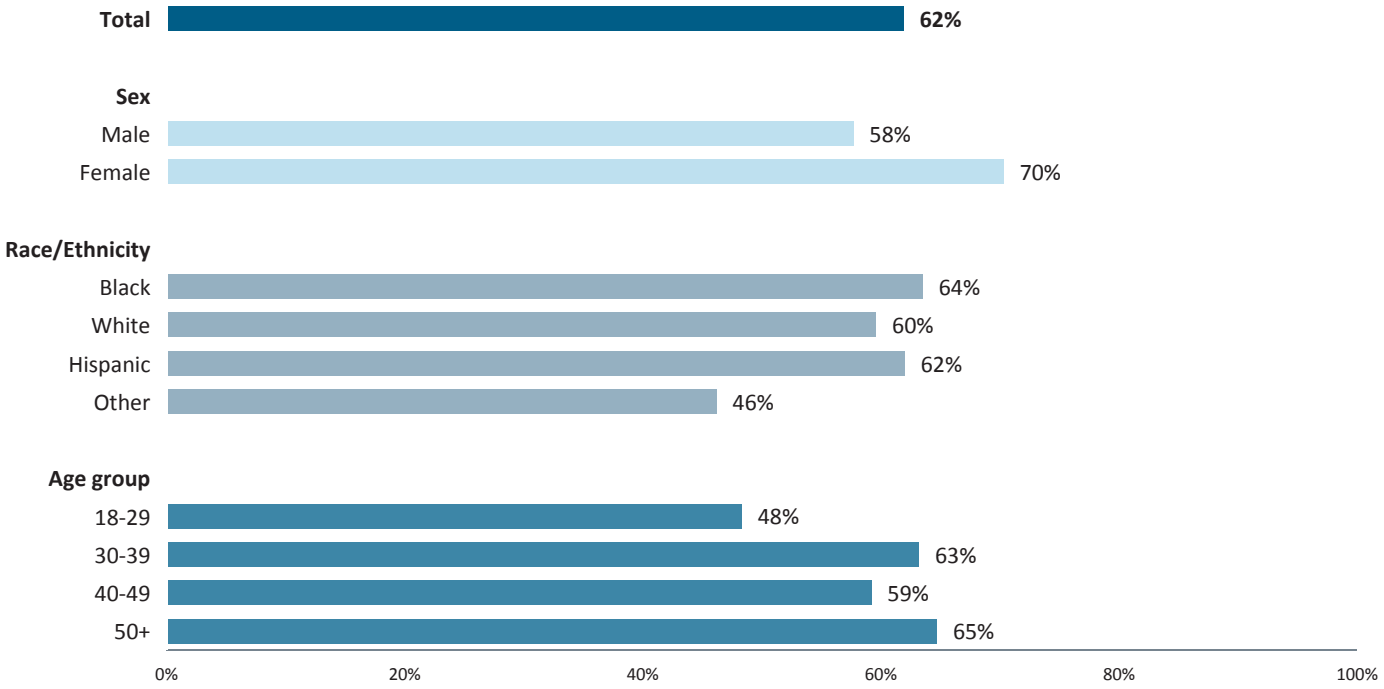


[1]Evidence of resistance to any antiretroviral (ARV) drug in a newly diagnosed, ARV-naïve individual.

Despite federal guidelines recommending baseline genotyping, and increases in NYC in recent years, only 59.3% of newly diagnosed persons in 2013 received a genotype within 3 months of HIV diagnosis (Table 13.1). The proportion of cases with transmitted drug resistance was stable between 2009 and 2010, but has risen steadily since 2011, to 17.2% in 2013 (Figure 13.1).

ANTIRETROVIRAL ADHERENCE

FIGURE 14.1: Antiretroviral therapy (ART) adherence*: MMP participants currently taking ART (N=407), NYC 2013

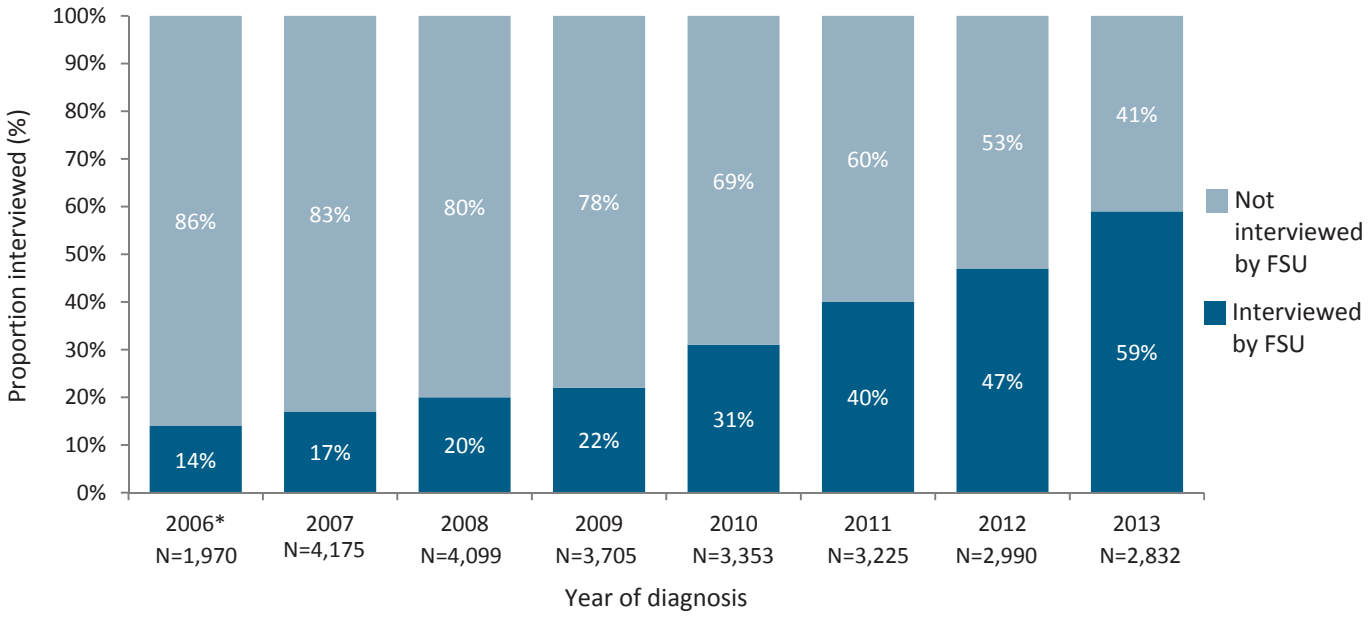


*Adherence is self-reported and defined as not missing a single ART dose in the last 3 months.

The Medical Monitoring Project (MMP) is a national, ongoing supplemental surveillance study of persons with HIV who are receiving outpatient HIV medical care. MMP participants are interviewed for collection of data on demographics, health status, behavioral risk, and HIV medication adherence. In 2013, among the 431 participants interviewed for MMP, 420 (98%) reported ever taking antiretroviral therapy (ART) and 407 reported currently taking ART. Of the 407 currently on ART, 62% reported complete adherence in the 3 months prior to being interviewed. Adherence was highest among females (70%), blacks (64%) and those aged 50 and older (65%) (Figure 14.1).

HIV PARTNER SERVICES

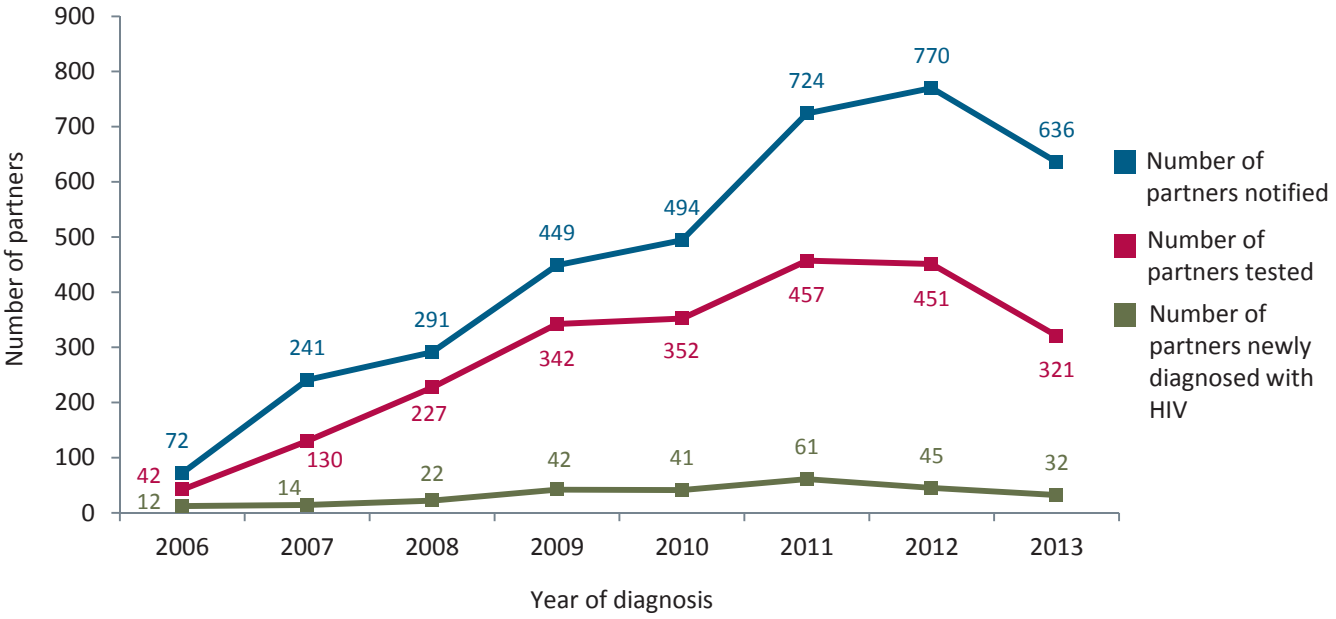
FIGURE 15.1: Proportion of new HIV diagnoses interviewed by the NYC DOHMH Field Services Unit, NYC 2006-2013



*FSU created in June 2006; data for 2006 are for 6 months only.

The Field Services Unit (FSU) of the NYC DOHMH was established in June 2006 to assist HIV medical providers and patients diagnosed with HIV infection with partner services and linkage to medical care. By the end of 2012, FSU staff members were offering HIV partner services to patients newly diagnosed with HIV citywide. In 2013, FSU interviewed 59% of persons newly diagnosed with HIV in NYC, an increase of 26% since 2012 (Figure 15.1). As a result of FSU partner services conducted in 2013, 636 partners were notified, 321 were tested for HIV infection, and 32 were newly diagnosed with HIV (Figure 15.2). Since 2006, 269 partners have been newly diagnosed with HIV as a result of partner services provided by FSU.

FIGURE 15.2: HIV partner notification outcomes for partners of negative or unknown serostatus, NYC 2006-2013



TECHNICAL NOTES

ABOUT THIS REPORT: This report provides an overview of the HIV epidemic in New York City using HIV surveillance data, and presents highlights for the reporting period based on core surveillance activities. All data are based on information received by the NYC DOHMH as of June 30, 2014, and are for calendar year 2013 unless otherwise noted.

HIV SURVEILLANCE: The NYC HIV Epidemiology and Field Services Program (HEFSP) manages the HIV surveillance registry, a population-based registry of all persons diagnosed with AIDS (since 1981) or HIV infection (since 2000) and reported to the NYC DOHMH according to standard Centers for Disease Control and Prevention (CDC) case definitions.[1] The Registry contains demographic, HIV transmission risk and clinical information on HIV-diagnosed persons, as well as all diagnostic tests, viral load tests, CD4 counts, and HIV genotypes reportable under New York State law.[2] For a list of surveillance definitions and technical notes see: http://www.nyc.gov/html/doh/html/data/hivtables.shtml#abbrev.

PERINATAL AND PEDIATRIC HIV SURVEILLANCE: HEFSP collects data on HIV-exposed and -infected infants and children diagnosed with HIV before 13 years of age. Data are used to monitor the prevention of mother-to-child HIV transmission, to measure perinatal HIV transmission rates, and describe morbidity and mortality among HIV-infected children. In addition to routine HIV and AIDS case surveillance, perinatal and pediatric surveillance data are informed by a range of other activities and data sources, including longitudinal case follow-up, the New York State Department of Health's Comprehensive Newborn Screening Program, and CDC-funded special projects related to pediatric HIV.

ACUTE HIV INFECTION SURVEILLANCE: Since 2008, HEFSP has conducted routine surveillance and field investigation of individuals diagnosed in the acute stage of HIV infection (AHI) in New York City. For NYC's AHI case definition see: http://www.nyc.gov/html/doh/downloads/pdf/ah/ahi-case-definition-current.pdf.

DEATH DATA: Data on deaths occurring in NYC are from matches with the NYC Vital Statistics Registry, medical chart reviews, and provider reports via the Provider Report Form, including HIV-positive autopsies by the Office of the Chief Medical Examiner. Data on deaths occurring outside NYC are from matches with the Social Security Death Master File and National Death Index. Death data for 2013 are incomplete. Death data for 2012 are incomplete for deaths occurring outside NYC. The most recent year of complete death data is 2011. Cause of death used for analyses in this report is persons' underlying cause of death. For deaths occurring in 1984-1986, ICD9 code 279.1 was used to denote AIDS-related deaths. For deaths occurring in 1987-1998, ICD9 codes 042-044 were used to denote HIV/AIDS-related deaths. For deaths occurring in 1999-2013, ICD10 codes B20-B24 were used to denote HIV/AIDS-related deaths. For technical notes on cause of death by the NYC DOHMH's Office of Vital Statistics see: http://www.nyc.gov/html/doh/downloads/pdf/vs/vs-appendix-b-2012.pdf.

AREA-BASED POVERTY: Area-based poverty is based on NYC ZIP code of residence and is defined as the percent of the population in a given ZIP code whose household income is below the Federal Poverty Level. This measure is not available for persons missing ZIP code information or living outside NYC. Income data used for analyses in this report are from the 2007-2011 American Community Survey (ACS) for events occurring in 2006-2009 and ACS 2008-2012 for events occurring in 2010-2013. Cut-points for categories of area-based poverty in NYC were defined by a NYC DOHMH workgroup.[3]

MEDICAL MONITORING PROJECT: The Medical Monitoring Project (MMP) is a national, ongoing supplemental surveillance study of persons with HIV who are receiving outpatient HIV medical care. MMP is sponsored by the Centers for Disease Control and Prevention and is conducted by 23 local health departments, universities and other collaborators in the US, including the NYC DOHMH. A three-stage sampling design is used to obtain a probability sample of HIV-infected adults receiving HIV care at randomly selected HIV medical care facilities in the first four months of a study year. The project is cross-sectional and is conducted yearly. Face-to-face structured interviews are used to collect information on demographics, health status, behavioral risk factors, and adherence to HIV medication regimens, and information on prescription of antiretroviral therapy, comorbidities, and health service utilization is abstracted from patients' medical records. For more information on The Medical Monitoring Project see: http://www.cdc.gov/hiv/prevention/ongoing/mmp/index.html.

[1]Centers for Disease Control and Prevention. Revised surveillance case definition for HIV infection—United States, 2014. MMWR 2014; 63:1-10.
[2]State of New York Laws. HIV Testing and Counseling. Amendment to New York State Public Health Law Article 21, Amendment of Part 63 of Title 10, Codes, Rules and Regulations of the State of New York (HIV/AIDS Testing, Reporting and Confidentiality of HIV-Related Information). Chapter 308. Albany, NY: State of New York; 2010.
[3]Toprani A, Hadler JL. Selecting and applying a standard area-based socioeconomic status measure for public health data: analysis for New York City. New York City Department of Health and Mental Hygiene: *Epi Res Report*. May 2013; 1-12.

HIV PROVIDER REPORTING

All diagnostic and clinical providers (doctors, nurses, physician assistants, and all others diagnosing HIV or providing care to HIV-infected persons) and laboratories are required by law to report specific HIV-related events.

REPORT HIV/AIDS CASES:

Providers are required by law to report cases of HIV/AIDS to the NYC DOHMH. The New York State Medical Provider Report Form (PRF) (DOH-4189 revised 03/09 and 8/05) must be completed for the following events: 1) new diagnosis of HIV (i.e., acute HIV infection or first report of an HIV antibody positive test result); 2) new diagnosis of AIDS (CD4<200 or opportunistic infection); or 3) patient with previously diagnosed HIV or AIDS during their first visit. Providers are required to report such events to the DOHMH within 14 days. In order to protect patient confidentiality, PRF are not permitted to be mailed or faxed to the DOHMH. DOHMH staff are available to pick up PRF from medical facilities at agreed-upon intervals. To arrange PRF pick-up, call the HIV Surveillance Provider line at **(212) 442-3388**.

DISCUSS PARTNER SERVICES AND REPORT PARTNERS:

Partner services (PS), a free program offered by the NYC DOHMH to all persons diagnosed with HIV, helps persons with HIV determine how to best notify their sex or needle sharing partners. As required by New York State Public Health Law, providers must report all known sex or needle sharing partners to the NYC DOHMH so that partners can be notified of their potential exposure to HIV.

To report partners, call the DOHMH's Contact Notification Assistance Program (CNAP) at **(212) 693-1419**, or complete the PRF whenever partner information is available (either at the time of the reportable event or at a follow-up visit). Key partner information to report includes: each partner's first/last name (alias, if applicable), date of birth/estimated age, gender, and domestic violence screening.

For more information on HIV provider reporting, including how to obtain copies of the PRF, see: http://www.nyc.gov/html/doh/html/data/hcpreporting.shtml

ADDITIONAL RESOURCES

NYC DEPARTMENT OF HEALTH AND MENTAL HYGIENE WEBSITE: www.nyc.gov/health

ADDITIONAL NYC DOHMH RESOURCES ON HIV IN NYC:

NYC HIV Epidemiology and Field Services Program, including additional data on HIV by NYC neighborhood, HIV among subpopulations, and other HIV statistics: http://www.nyc.gov/html/doh/html/data/hivepi.shtml

Other information on HIV/AIDS, including HIV testing sites in NYC, condom distribution, and DOHMH STD clinics: http://www.nyc.gov/html/doh/html/living/std-hiv.shtml

ADDITIONAL NYC DOHMH DATA RESOURCES:

Data & Statistics: http://www.nyc.gov/html/doh/html/data/data.shtml

EpiQuery, NYC Interactive Health Data System: http://www.nyc.gov/health/epiquery

Maps of ZIP codes by NYC borough: http://www.nyc.gov/html/doh/html/data/map-gallery.shtml

CENTERS FOR DISEASE CONTROL AND PREVENTION:

National HIV surveillance, including CDC's case definitions for HIV surveillance: http://www.cdc.gov/hiv/statistics/

SUGGESTED CITATION:

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HIV EPIDEMIOLOGY AND FIELD SERVICES PROGRAM
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