

**HIV Care in New York State, 2022:
Linkage to Care and Viral Suppression
Among Persons with Diagnosed HIV
Residing in New York State**

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Executive Summary

In 2014, the Governor of New York State (NYS) outlined the Ending the Epidemic (ETE) initiative, a plan to end the AIDS epidemic in NYS. As part of the three-point plan, increased efforts are being directed towards: 1) identifying persons with HIV who remain undiagnosed and linking them to care; 2) linking and retaining in healthcare persons diagnosed with HIV to maximize viral suppression; and 3) increasing access to Pre-Exposure Prophylaxis (PrEP) for persons who are at risk of acquiring HIV.

New York State was making progress to meet ETE goals by the end of 2020, but the onset of the COVID-19 pandemic and subsequent emergency response from public health officials and providers delayed progress. As a result, the ETE timeline was revised, and New York State now pledges to reach the ETE goals by the end of 2024.

As persons retained in successful treatment who have achieved and maintained viral suppression are effectively not able to sexually transmit the virus, the provision of appropriate medical care for persons living with diagnosed HIV (PLWDH) to achieve and maintain viral suppression is a key feature of the ETE initiative. The Cascade of HIV Care is one tool for assessing the extent and effectiveness of HIV medical care in NYS.

This report and supplemental Cascades of HIV Care summarize 2022 NYS Department of Health (NYSDOH) HIV registry data for two of the three pillars of ETE: 1) identify persons diagnosed with HIV and link them to HIV medical care and 2) link and retain persons diagnosed with HIV in care. Data are sourced from the June 2023 Statewide Analysis file which includes data combined from the New York State and New York City HIV registries.

New York State Results

Major Findings

Linkage to Care

One of the ETE goals is to link persons newly diagnosed with HIV to appropriate medical care as quickly as possible. By the end of 2024, the NYS goal is to link 90% of persons newly diagnosed with HIV to medical care within 30 days of diagnosis.

- In 2022, 81% of persons newly diagnosed with HIV in NYS showed evidence of linkage to care within 30 days of diagnosis. NYS is below the United States (U.S.) 2021 estimate (82%).¹ More recent national estimates are not available.
- In 2022, 90% of persons newly diagnosed with HIV in NYS showed evidence of linkage to care within 91 days of diagnosis. NYS is above the U.S. 2019 estimate (88%).² More recent national estimates are not available.

Any HIV Care

Linking and retaining in healthcare persons diagnosed with HIV to maximize viral suppression is key to ETE.

- In 2022, 87% of PLWDH in NYS showed evidence of any care during the year. Continuous care (≥ 2 visits/year, ≥ 91 days apart) was observed for 67% of PLWDH. Both of these metrics are higher than the most recent national level estimates, which indicate that in 2021, 75% of PLWDH in the U.S. had any evidence of care and 54% were in continuous care.¹

Viral Suppression

Persons who achieve and maintain sustained viral suppression (an undetectable viral load (VL) for an extended period of time) are effectively unable to sexually transmit HIV.

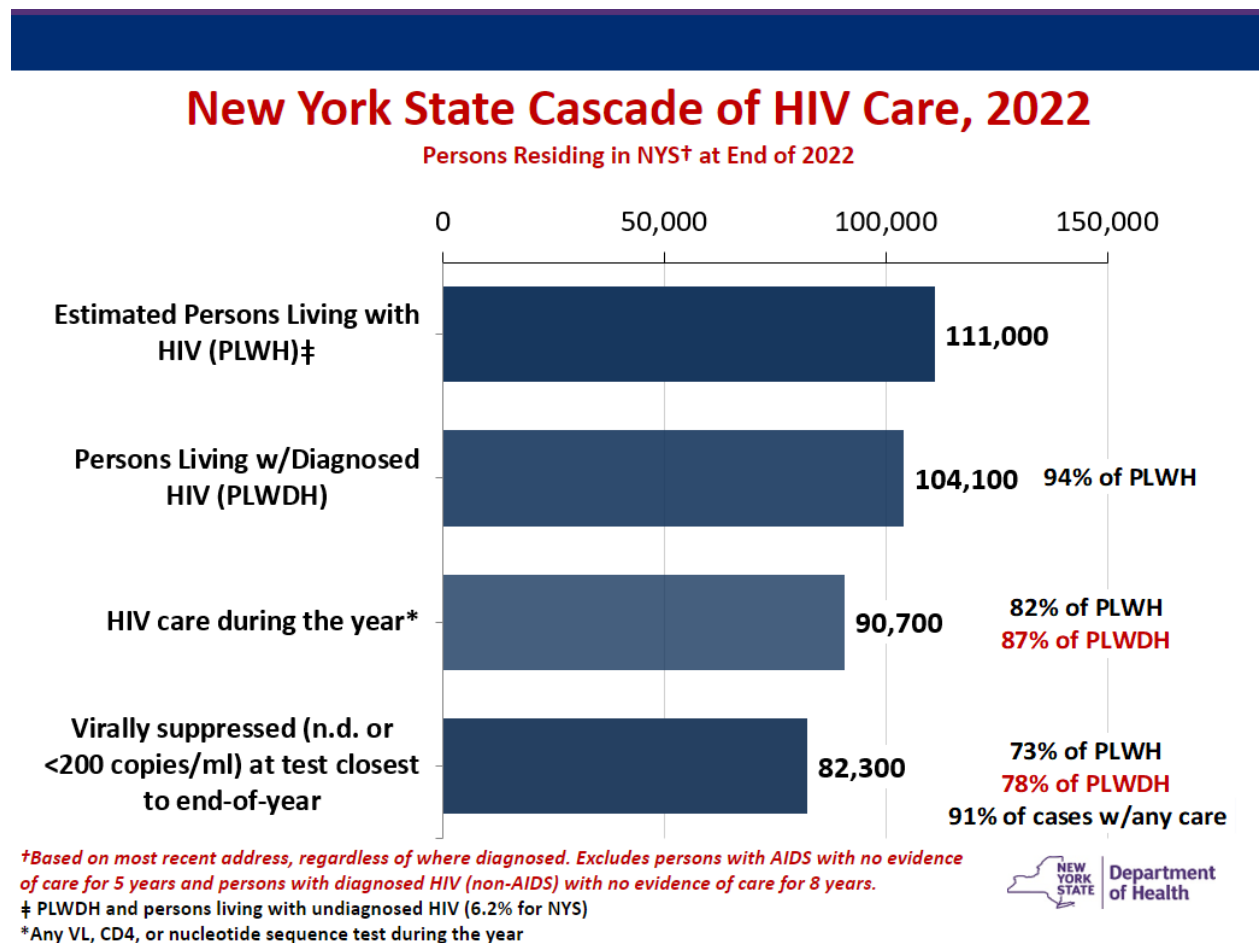
- In 2022, 79% of PLWDH in NYS were virally suppressed. This is higher than the most recent national level estimates, which indicated that 66% of PLWDH in the U.S. were virally suppressed in 2021.¹

¹ Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 dependent areas, 2021. *HIV Surveillance Supplemental Report*, 2023;28(4). Published May 2023. Accessed 07/31/2023.

² Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 dependent areas, 2020. *HIV Surveillance Supplemental Report* 2022;27(No. 3). <http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>. Published May 2022. Accessed 07/11/2022.

The following sections present rates of linkage to care and viral suppression in NYS. These rates are based on data from the NYS HIV Registry using methods defined by the Centers for Disease Control and Prevention (CDC). The **Technical Notes and Appendices** section provides detailed tables and explanations of methods and data sources. The Cascade of HIV Care presents a picture of the total HIV population in NYS at one point in time, across the continuum of care from transmission through diagnosis, participation in care, and success of care (2022 NYS English and Spanish cascades can be found at <https://www.health.ny.gov/diseases/aids/general/statistics/>).

Caution is advised in comparing cascade outcomes from different sources. Measures presented by different sources may be calculated differently or use different information even though their titles are similar. In addition, measures used in cascades from the same data source but created at different time points may use different definitions.



New York State HIV Care Outcome Measures

Linkage to Care after Diagnosis (Appendix Table A)

81% of persons newly diagnosed with HIV showed evidence of linkage to care within 30 days of diagnosis and 90% showed evidence of linkage to care within 91 days of diagnosis.

Linkage to Care within 30 days of diagnosis	
Variable	Observation
Region	Rest of State (ROS) (82%) > New York City (NYC) (80%); Highest in the Binghamton Ryan White Region (RWR) (94%) Lowest in Lower Hudson RWR (76%)
Sex	Males (81%) > Females (79%)
Current Gender	Non-Conforming/Non-Binary (100%) > Cisgender Man/Boy (81%) > Transgender Man/Boy (80%) > Cisgender Woman/Girl (79%) > Transgender Woman/Girl (78%)
Race/Ethnicity	Native American and Multi-Race (100%, individually) > Non-Hispanic White (83%) > Non-Hispanic Black and Hispanic (80%, individually) > Asian (78%) > Native Hawaiian/Pacific Islander (50%)
Age	30-39 and 40-49 (82%, individually) > 20-24, 25-29, and 50-59 (80%, individually) > 13-19 and 60+ (78%, individually)
Transmission Risk**	Pediatric (100%) > Male-to-male sexual contact (MSM) (84%) > Heterosexual (79%) > Unknown (74%) > Injection drug use (IDU) and MSM/IDU (72%, individually)

Linkage to Care within 91 days of diagnosis	
Variable	Observation
Region	ROS (92%) > NYC (89%); Highest in the Buffalo Ryan White Region (RWR) (97%) Lowest in Mid-Hudson and Nassau/Suffolk RWRs (89%, individually)
Sex	Males (90%) = Females (90%)
Current Gender	Non-Conforming/Non-Binary (100%) > Cisgender Man/Boy (91%) > Cisgender Woman/Girl (90%) > Transgender Man/Boy (80%) > Transgender Woman/Girl (79%)
Race/Ethnicity	Native American and Multi-Race (100%, individually) > Non-Hispanic White (94%) > Asian (91%) > Non-Hispanic Black and Hispanic (89%, individually) > Native Hawaiian/Pacific Islander (50%)
Age	20-24 and 50-59 (92%, individually) > 40-49 (91%) > 30-39 (90%) > 60+ (89%) > 13-19 and 25-29 (88%, individually)
Transmission Risk	Pediatric (100%) > MSM and MSM/IDU (92%, individually) > Heterosexual (90%) > Unknown (86%) > IDU (85%)

Measures of Care (Appendix Table B)

87% of PLWDH showed evidence of any care during the year. Continuous care (≥ 2 laboratory tests/year, separated by ≥ 91 days) was observed for 67% of PLWDH.

Any Care	
Variable	Observation
Region	ROS (88%) > NYC (87%); Highest in the Buffalo RWR (90%) Lowest in the Binghamton, Mid-Hudson, and Syracuse RWRs (86%, individually)
Sex	Females (89%) > Males (87%)
Current Gender	Non-Conforming/Non-Binary (91%) > Cisgender Woman/Girl and Transgender Woman/Girl (89%, individually) > Cisgender Man/Boy (87%) > Transgender Man/Boy (83%)
Race/Ethnicity	Native Hawaiian/Pacific Islander (92%) > Hispanic (89%) > Non-Hispanic Black and Non-Hispanic White (87%, individually) > Native American and Unknown (86%, individually) > Multi-Race and Asian (85%, individually)
Age	60+ (91%) > 13-19 and 50-59 (89%, individually) > 40-49 (85%) > 20-24 (84%) > 25-29 and 30-39 (82%, individually)
Transmission Risk	Blood Products (94%) > IDU (92%) > MSM/IDU (90%) > Heterosexual (88%) > MSM (87%) > Pediatric (86%) > Unknown (83%)

Continuous Care	
Variable	Observation
Region	NYC (68%) > ROS (65%); Highest in the Lower Hudson RWR (67%) Lowest in the Mid-Hudson RWR (60%)
Sex	Females (69%) > Males (67%)
Current Gender	Transgender Woman/Girl (71%) > Cisgender Woman/Girl (69%) > Cisgender Man/Boy (66%) > Non-Conforming/Non-Binary (62%) > Transgender Man/Boy (58%)
Race/Ethnicity	Native Hawaiian/Pacific Islander (73%) > Hispanic (71%) > Multi-Race and Non-Hispanic Black (67%) > Asian (66%) > Native American (65%) > Non-Hispanic White and Unknown (64%, individually)
Age	60+ (74%) > 13-19 (73%) > 50-59 (70%) > 20-24 and 40-49 (63%, individually) > 25-29 and 30-39 (59%, individually)
Transmission Risk	IDU (74%) > MSM/IDU (71%) > Heterosexual and Blood Products (68%, individually) > MSM (66%) > Pediatric (64%) > Unknown (63%)

Viral Suppression (Appendix Table C)

79% of PLWDH in NYS were virally suppressed, defined as having non-detectable VL or a VL <200 copies/ml at the last test of the year.

Viral Suppression	
Variable	Observation
Region	ROS (82%) > NYC (77%); Highest in Nassau/Suffolk RWR (84%) Lowest in Binghamton and Syracuse RWRs (79%)
Sex	Females (79%) > Males (78%)
Current Gender	Cisgender Woman/Girl, Cisgender Man/Boy, and Non-Conforming/Non-Binary (79%, individually), Transgender Woman/Girl (72%) > Transgender Man/Boy (63%)
Race/Ethnicity	Native Hawaiian/Pacific Islander (86%) > Unknown (84%) > Non-Hispanic White (82%) > Asian (81%) > Hispanic (80%) > Native American (78%) > Multi-Race (76%) > Non-Hispanic Black (75%)
Age	60+ (85%) > 50-59 (81%) > 13-19 and 40-49 (75%, individually) > 30-39 (71%) > 20-24 (70%) > 25-29 (69%)
Transmission Risk	Blood Products (85%) > IDU (80%) > MSM and Heterosexual (79%, individually) > MSM/IDU and Unknown (75%, individually) > Pediatric (66%)

Technical Notes and Appendices

New York State Methods for Counting Persons Living with Diagnosed HIV

Residence of persons living with diagnosed HIV is assessed using the most recent address reported to the NYS HIV Registry, regardless of the residence of the individual at the time of diagnosis. Persons residing outside of NYS at the time of HIV or Stage 3/AIDS diagnosis, but whose most recent address reported to the HIV Registry is in NYS, were included in the calculations. Individuals diagnosed in NYS whose most recently reported address indicated residence outside NYS were excluded.

In addition, individuals whose last report to the registry was at least 5 years before December 2022 for persons diagnosed with Stage 3/AIDS or 8 years before December 2022 for persons diagnosed with HIV (not AIDS) were not included in the counts of care and viral suppression. These persons are presumed to be either no longer living or no longer residing in NYS (n=29,665).

Data Sources for Calculation of HIV Care Measures

Laboratory data used in these analyses are from the NYS HIV Registry. NYS Public Health law requires the electronic reporting to the NYSDOH the result of any laboratory test, tests or series of tests approved for the diagnosis or periodic monitoring of HIV. This includes reactive initial HIV immunoassay results, all results (e.g. positive, negative, indeterminate) from supplemental HIV immunoassays (HIV-1/2 antibody differentiation assay, HIV-1 Western blot, HIV-2 Western blot or HIV-1 Immunofluorescent assay), all HIV nucleic acid (RNA or DNA) detection test results (qualitative and quantitative; detectable and undetectable), CD4 lymphocyte counts and percentages, positive HIV detection tests (culture, antigen), and HIV genotypic nucleotide sequence from resistance testing. Exempt from this reporting requirement are tests performed in the context of clinical trials or in Federal facilities such as military sites or by the Veterans' Administration, though several exempt facilities do report in "the spirit of cooperation." Laboratory data are reported electronically to NYSDOH, which receives around 1 million HIV laboratory reports annually.

Counts shown in tables and the cascade may differ. The percentages for PLWDH shown in the report tables are based on persons who were diagnosed prior to the calendar year and not known to be deceased at the end of the calendar year. Data shown in the cascade are based on all persons living with diagnosed HIV at the end of the calendar year regardless of when diagnosed.

Calculation of NYS Cascade Measures

1. Estimated persons living with HIV

The percentage unaware for NYS in 2022 was 6.2% (N=~6,900).

2. Persons living with diagnosed HIV

NYS uses methodology from the CDC to calculate the cascade measures. Therefore, the total number of PLWDH (Tables B and C) in the report will be different from the number of PLWDH in the cascade picture and other NYS reports. The methodology for counting PLWDH in this report: 1) excludes those ≤ 12 years old; and 2) includes only persons diagnosed with HIV during the previous year (i.e., December 2021) or earlier, and alive at the end of the analysis year (i.e., December 2022).

3. PLWDH with any HIV care during the year

87% of PLWDH who were diagnosed and living during the entire year had at least one reported VL, CD4, or nucleotide sequence, regardless of result (Table B). This percentage was applied to the entire number of PLWDH as of December 2022 in the cascade.

4. PLWDH with continuous care during the year

67% of PLWDH who were diagnosed and alive during the entire year had at least two laboratory tests (VL, CD4, or nucleotide sequence) during the year which were separated by at least 91 days (Table B). This estimate is not shown in the cascade.

5. Virally suppressed at test closest to end-of-year

Of those with a VL test result, 91% had a suppressed VL (<200 copies/ml or undetectable) at the test closest to end-of-year. 79% of all PLWDH, including those with and without a reported VL, were virally suppressed at the test closest to end-of-year. This percentage was applied to the entire number of PLWDH as of December 2022 in the cascade.

Identification of Incarcerated Individuals

Incarcerated individuals are identified as having their most recent address (as reported to the NYS HIV Registry) indicate a residence in a NYS Department of Corrections and Community Supervision (NYSDOCCS) facility, a city jail, county jail, or federal detention facility.

Individuals identified as currently incarcerated at the end of 2022 were excluded from Ryan White regional calculations in order to avoid the artificial inflation of HIV diagnoses and prevalence among counties with relatively low HIV rates among non-incarcerated persons.

Table A: Linkage to Care in 2022
Persons Newly Diagnosed with HIV, NYS, 2022

	All	Linkage within 30 days of dx		Linkage within 91 days of dx	
Residence at Diagnosis					
NYC	1,708	1,371	80%	1,528	89%
ROS	605	495	82%	557	92%
NYS Total	2,313	1,866	81%	2,085	90%
Ryan White Region at Dx¹					
Albany	71	59	83%	66	93%
Binghamton	17	16	94%	16	94%
Buffalo	74	67	91%	72	97%
Lower Hudson	82	62	76%	76	93%
Mid-Hudson	36	28	78%	32	89%
Nassau/Suffolk	169	132	78%	151	89%
Rochester	79	72	91%	75	95%
Syracuse	65	50	77%	59	91%
Birth Sex					
Male	1,876	1,522	81%	1,693	90%
Female	437	344	79%	392	90%
Current Gender					
Cisgender Man/Boy	1,782	1,445	81%	1,615	91%
Cisgender Woman/Girl	431	339	79%	387	90%
Transgender Man/Boy	5	4	80%	4	80%
Transgender Woman/Girl	78	61	78%	62	79%
Non-Conforming/Non-Binary	17	17	100%	17	100%
Race/Ethnicity					
Asian	93	73	78%	85	91%
Native Hawaiian/Pacific Islander	2	1	50%	1	50%
Hispanic	828	665	80%	733	89%
Multi-Race	19	19	100%	19	100%
Native American	3	3	100%	3	100%
Non-Hispanic Black	938	747	80%	839	89%
Non-Hispanic White	430	358	83%	405	94%
Age at Diagnosis					
13-19	73	57	78%	64	88%
20-24	333	268	80%	305	92%
25-29	453	364	80%	400	88%
30-39	728	594	82%	656	90%
40-49	353	288	82%	321	91%
50-59	228	182	80%	210	92%
60+	145	113	78%	129	89%
Transmission Risk					
MSM ²	1,260	1,060	84%	1,155	92%
IDU ³	47	34	72%	40	85%
MSM/IDU	25	18	72%	23	92%
Heterosexual	504	399	79%	456	90%
Pediatric	2	2	100%	2	100%
Unknown	475	353	74%	409	86%

Linkage to care is defined as receipt of first VL, CD4, or nucleotide sequence test after diagnosis, regardless of result
NYS HIV registry case and laboratory data as of June 2023

¹ Regional figures exclude persons ever incarcerated in a city jail, a county jail, a federal detention facility or a NYSDOCCS facility

² MSM-history of male-to-male sexual contact

³ IDU-history of injection drug use

Note – rates based on fewer than 25 individuals are not statistically reliable

Table B: Measures of Care in 2022**Persons Living with Diagnosed HIV in Dec. 2021 and Alive in Dec. 2022, NYS**

	All	Any Care ¹		≥2 tests, ≥91 days apart	
Residence²					
NYC	77,043	67,106	87%	52,312	68%
ROS	21,743	19,223	88%	14,086	65%
NYS Total	98,786	86,329	87%	66,398	67%
Ryan White Region³					
Albany	2,814	2,505	89%	1,859	66%
Binghamton	482	414	86%	294	61%
Buffalo	2,762	2,494	90%	1,752	63%
Lower Hudson	3,402	3,003	88%	2,291	67%
Mid-Hudson	2,167	1,871	86%	1,293	60%
Nassau/Suffolk	5,114	4,547	89%	3,364	66%
Rochester	2,683	2,394	89%	1,713	64%
Syracuse	2,046	1,755	86%	1,310	64%
Birth sex					
Male	71,184	61,893	87%	47,369	67%
Female	27,602	24,436	89%	19,029	69%
Current Gender					
Cisgender Man/Boy	68,876	59,848	87%	45,748	66%
Cisgender Woman/Girl	27,524	24,369	89%	18,982	69%
Transgender Man/Boy	60	50	83%	35	58%
Transgender Woman/Girl	2,185	1,934	89%	1,546	71%
Non-Conforming/Non-Binary	141	128	91%	87	62%
Race/Ethnicity					
Asian	2,520	2,131	85%	1,667	66%
Native Hawaiian/Pacific Islander	103	95	92%	75	73%
Hispanic	28,627	25,366	89%	20,184	71%
Multi-Race	594	504	85%	396	67%
Native American	182	157	86%	118	65%
Non-Hispanic Black	44,331	38,582	87%	29,599	67%
Non-Hispanic White	22,349	19,425	87%	14,308	64%
Unknown	80	69	86%	51	64%
Age					
13-19	201	179	89%	147	73%
20-24	1,185	990	84%	741	63%
25-29	4,155	3,393	82%	2,462	59%
30-39	17,534	14,359	82%	10,295	59%
40-49	17,256	14,608	85%	10,843	63%
50-59	27,364	24,455	89%	19,027	70%
60+	31,091	28,345	91%	22,883	74%
Transmission Risk					
MSM ⁴	45,071	39,125	87%	29,675	66%
IDU ⁵	9,394	8,616	92%	6,929	74%
MSM/IDU	4,256	3,843	90%	3,027	71%
Heterosexual	28,128	24,807	88%	19,203	68%
Blood Products	144	136	94%	98	68%
Pediatric Risk	1,881	1,614	86%	1,212	64%
Unknown	9,912	8,188	83%	6,254	63%

NYS HIV registry case and laboratory data as of June 2023

¹ At least 1 VL, CD4, or nucleotide sequence test during the year² Residence by end of 2022³ Regional figures exclude persons who were incarcerated in a city jail, a county jail, a federal detention facility or a NYSDOCCS facility as of their last known address in 2022⁴MSM-history of male-to-male sexual contact⁵ IDU-history of injection drug use

Note – rates based on fewer than 25 individuals are not statistically reliable

Table C: Viral Suppression in 2022
Persons Living with Diagnosed HIV in Dec. 2021 and Alive in Dec. 2022, NYS

	All	≥1 VL test during the year		Virally suppressed at test closest to end of year		
				% of All	% of tested	% of All
Residence¹						
NYC	77,043	66,417	86%	59,680	90%	77%
ROS	21,743	19,001	87%	17,903	94%	82%
NYS Total	98,786	85,418	86%	77,583	91%	79%
Ryan White Region²						
Albany	2,814	2,462	87%	2,321	94%	82%
Binghamton	482	408	85%	379	93%	79%
Buffalo	2,762	2,479	90%	2,304	93%	83%
Lower Hudson	3,402	2,976	87%	2,794	94%	82%
Mid-Hudson	2,167	1,840	85%	1,740	95%	80%
Nassau/Suffolk	5,114	4,503	88%	4,293	95%	84%
Rochester	2,683	2,365	88%	2,222	94%	83%
Syracuse	2,046	1,729	85%	1,625	94%	79%
Birth sex						
Male	71,184	61,292	86%	55,757	91%	78%
Female	27,602	24,126	87%	21,826	90%	79%
Current Gender						
Cisgender Man/Boy	68,876	59,266	86%	54,096	91%	79%
Cisgender Woman/Girl	27,524	24,062	87%	21,773	90%	79%
Transgender Man/Boy	60	48	80%	38	79%	63%
Transgender Woman/Girl	2,185	1,918	88%	1,565	82%	72%
Non-Conforming/Non-Binary	141	124	88%	111	90%	79%
Race/Ethnicity						
Asian	2,520	2,120	84%	2,052	97%	81%
Native Hawaiian/Pacific Islander	103	95	92%	89	94%	86%
Hispanic	28,627	25,143	88%	22,959	91%	80%
Multi-Race	594	502	85%	450	90%	76%
Native American	182	156	86%	142	91%	78%
Non-Hispanic Black	44,331	38,109	86%	33,463	88%	75%
Non-Hispanic White	22,349	19,225	86%	18,361	96%	82%
Unknown	80	68	85%	67	99%	84%
Age						
13-19	201	177	88%	150	85%	75%
20-24	1,185	981	83%	834	85%	70%
25-29	4,155	3,363	81%	2,859	85%	69%
30-39	17,534	14,188	81%	12,368	87%	71%
40-49	17,256	14,463	84%	12,912	89%	75%
50-59	27,364	24,205	88%	22,049	91%	81%
60+	31,091	28,041	90%	26,411	94%	85%
Transmission Risk						
MSM ³	45,071	38,794	86%	35,783	92%	79%
IDU ⁴	9,394	8,504	91%	7,494	88%	80%
MSM/IDU	4,256	3,805	89%	3,193	84%	75%
Heterosexual	28,128	24,494	87%	22,348	91%	79%
Blood Products	144	132	92%	122	92%	85%
Pediatric Risk	1,881	1,604	85%	1,242	77%	66%
Unknown	9,912	8,085	82%	7,401	92%	75%

Virally suppressed defined as a viral load (VL) that is non-detectable or <200 copies/ml

NYS HIV registry case and laboratory data as of June 2023

¹ Residence by end of 2022

² Regional figures exclude persons who were incarcerated in a city jail, a county jail, a federal detention facility or a NYSDOCCS facility as of their last known address in 2022

³ MSM-history of male-to-male sexual contact

⁴ IDU-history of injection drug use

Note – rates based on fewer than 25 individuals are not statistically reliable

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