

Dear Reader:

The morbidity and mortality of persons with HIV disease and reduced transmission to others involves engagement in a continuum of care which includes HIV testing, linkage to care, engagement in continuous care, receiving antiretroviral therapy (ART) and becoming virally suppressed. Without treatment, most people develop acquired immunodeficiency syndrome (AIDS) which compromises their immune system especially if they remain without treatment for extended periods of time. A consistently suppressed viral load is associated with reduced morbidity and mortality, and a lower probability of transmitting HIV to sexual partners¹.

Early initiation of HIV care helps to control levels of the virus during the acute stage when people are seroconverting and have a high viral burden. Following a person's diagnosis, they should be immediately linked to medical care. Initiating ART soon after HIV diagnosis improves individual outcomes including reducing time to viral suppression and decreasing mortality². Kentucky's data shows that 77% of the 401 adults/adolescents newly diagnosed in 2023 were successfully linked to medical care within one month of HIV diagnosis.

There were 8,805 adults/adolescents living in Kentucky and diagnosed with HIV disease from the start of the HIV epidemic in 1982 through 2022 and living at the end of 2023. Of those, in 2022, 80% received medical care, 54% were retained in continuous care and 72% achieved viral suppression.

Of the 7,021 adult/adolescent persons who received medical care in 2023, 68% were retained in continuous care and 89% achieved viral suppression. It is also noteworthy that of the 4,790 adults/adolescents who were retained in care, 93% achieved viral suppression.

Sincerely,

Manny Singh, MBBS, MPH
Epidemiologist Technical Advisor
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¹Cohen MS, Chen YQ, McCauley M, et al. Prevention of HIV-1 infection with early antiretroviral therapy. *N Engl J Med* 2011;365:493-505.

²Chen, J., Ramendra, R., Lu, H., & Routy, J. P. (2018). The Early Bird Gets the Worm: Benefits and Future Directions with Early Antiretroviral Therapy Initiation in Primary HIV Infection. *Future Virology*, 13(11), 779–786. <https://doi.org/10.2217/fvl-2018-0110>



Data Sets:

Data used in this report were reported to the Kentucky Department for Public Health (KDPH) and recorded in the enhanced HIV/AIDS Reporting System (eHARS).

Data used for linkage to care was as of June 30, 2024.

Data used for all other markers on the continuum of care were as follows:

The denominator (overall population included in analysis) was obtained from data as of December 31, 2023.

The numerators (persons engaged at each stage of care, out of the denominator) were calculated using laboratory data as of June 30, 2024 to account for reporting delays.

Since only cases which have been diagnosed with HIV and reported are included in this analysis, comparisons to other jurisdictional reports and to national data should be made with caution as different measures may be utilized.

Methodology and Definitions:

This is a diagnosis-based continuum of care. Persons who have not yet been diagnosed and reported to KDPH have not been included.

HIV Diagnosed (denominator) – This includes all persons who were diagnosed with HIV disease by December 31, 2022 and living through December 31, 2023 (persons with HIV [PWH]). Persons included were adults/adolescents (\geq 13 years old) at time of diagnosis and had their most recent known address in Kentucky. Data as of December 31, 2023 were used to calculate the denominator.

Linked to Care – Defined as Kentuckians newly diagnosed in 2023 and successfully linked to HIV-related medical care within one month of their initial HIV diagnosis. Linkage to care was calculated by the number of months between the HIV diagnosis date and the initial medical care visit. Medical care visits were defined as having a CD4+ cell count or percent, a viral load test or a nucleotide sequence test. Note that this is a different denominator (401) than the other indicators and data as of June 30, 2024 were used to account for reporting delays for those diagnosed later in 2023.

Receipt of Care – Also known as any evidence of HIV-related medical care. Defined as PWH who had at least one HIV-related medical care visit. Viral load, CD4+ cell count, and percent and nucleotide sequence tests collected in 2023 were used as markers for medical care visits.

Retained in Care – Defined as PWH who had two or more HIV-related medical care visits performed at least three months apart during a 12-month period. Viral load, CD4+ cell count and percent and nucleotide sequence tests collected in 2023 were used as measures for medical care visits.

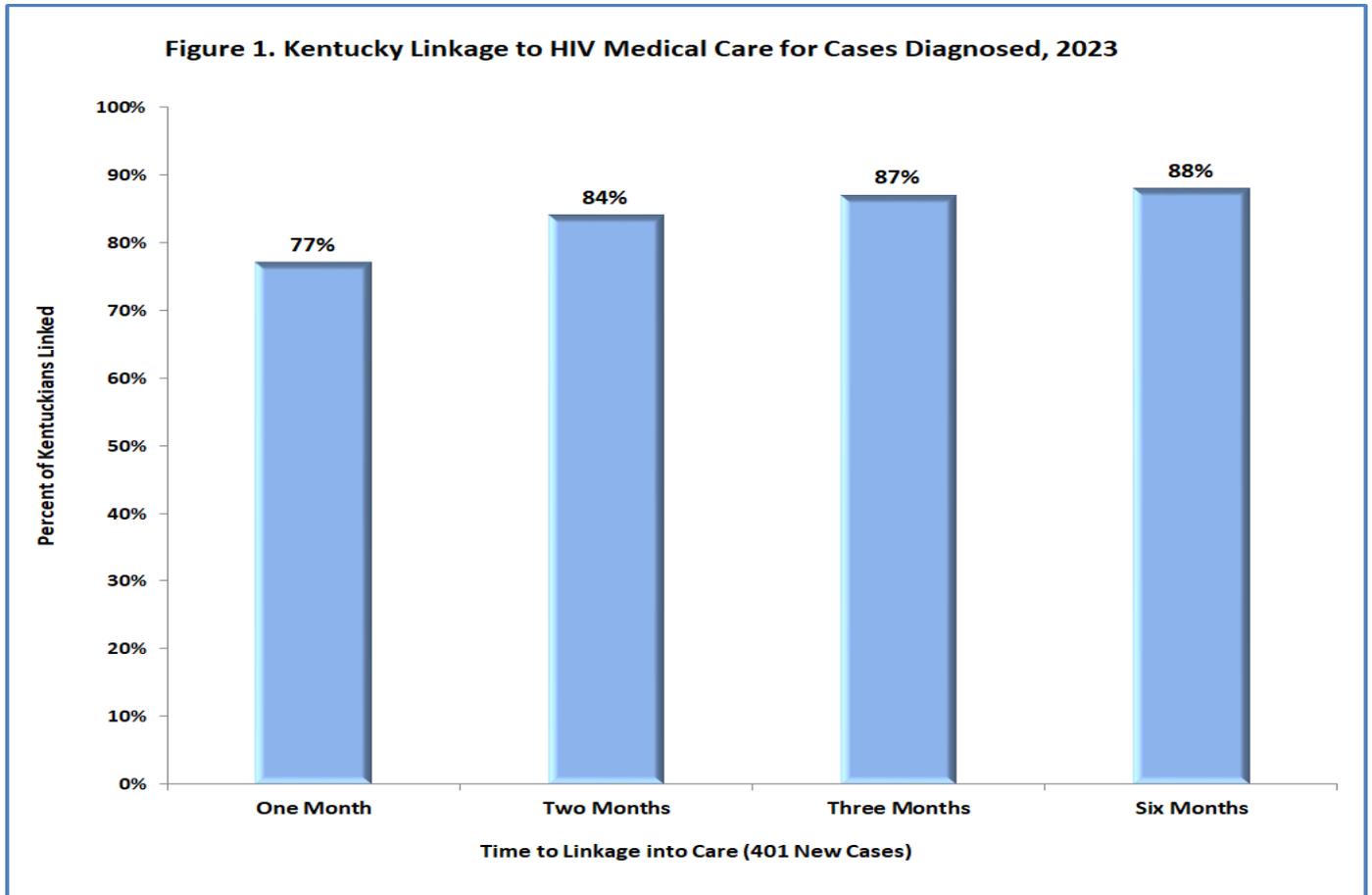
Viral Suppression – Defined as the number of PWH whose most recent viral load test in 2023 was < 200 copies/ml. The most recent viral load result collected at any point in 2023 was considered.

Morbidity – Defined as the state of being symptomatic or unhealthy due to a disease or condition.

Mortality Rate – Defined as the measure of the frequency of occurrence of death in a defined population during a specified interval.



LINKAGE TO CARE FOR CASES DIAGNOSED IN 2023, KENTUCKY



Entry into the HIV care continuum begins with diagnosis and linkage to care. Figure 1 shows linkage to HIV medical care for Kentuckians newly diagnosed with HIV in 2023 (401 cases) as of June 30, 2024.

The data shows that 77% of Kentuckians diagnosed with HIV during 2023 were linked to HIV related medical care within one month of diagnosis. Eighty-seven percent (87%) of newly diagnosed cases were linked to care within three months of HIV diagnosis. Eighty-eight (88) out of every 100 newly diagnosed cases were linked to care within six months of initial HIV diagnosis. Research has shown that viral suppression is achieved more quickly if treatment is started within three months of diagnosis¹.

¹Hall HI, Tang T, Westfall AO, Mugavero MJ. HIV care visits and time to suppression, 19 U.S. jurisdictions, and implications for treatment, prevention and the national HIV/AIDS strategy. Plos ONE. 2013;8(12):e84318. doi: 10.1371/journal.pone.0084318.



Characteristics	Linked to Care*		Not Linked to Care**		Total New Diagnoses	
	No.	% (1)	No.	% (1)	No.	% (1)
SEX AT BIRTH						
Male	252	82	75	80	327	82
Female	55	18	19	20	74	18
AGE AT DIAGNOSIS						
13-19	9	3	3	3	12	3
20-29	94	31	28	30	122	30
30-39	90	29	29	31	119	30
40-49	67	22	20	21	87	22
50+	47	15	14	15	61	15
RACE/ETHNICITY						
White, Not Hispanic	164	53	51	54	215	54
Black, Not Hispanic	79	26	34	36	113	28
Hispanic	55	18	7	7	62	15
Other/Unknown	9	3	2	2	11	3
TRANSMISSION CATEGORY						
MMSC ⁽²⁾	163	53	33	35	196	49
IDU ⁽³⁾	21	7	18	19	39	10
MMSC/IDU	8	3	8	9	16	4
Heterosexual ⁽⁴⁾	33	11	6	6	39	10
Undetermined ⁽⁵⁾	82	27	29	31	111	28
CARE COORDINATOR REGION⁽⁶⁾						
Purchase	13	4	4	4	17	4
Barren	29	9	7	7	36	9
Lake Cumberland	12	4	6	6	18	4
Lexington	79	26	18	19	97	24
Louisville	149	49	47	50	196	49
Northern Kentucky	24	8	12	13	36	9
Kentucky River	1	<1	0	0	1	<1
TOTAL⁽¹⁾	307	100	94	100	401	100

* Linked to HIV Care within one month of diagnosis.

**Not linked to HIV Care within one month of diagnosis.

(1) Percentages may not total to 100% due to rounding.

(2) MMSC = Male-to-male sexual contact.

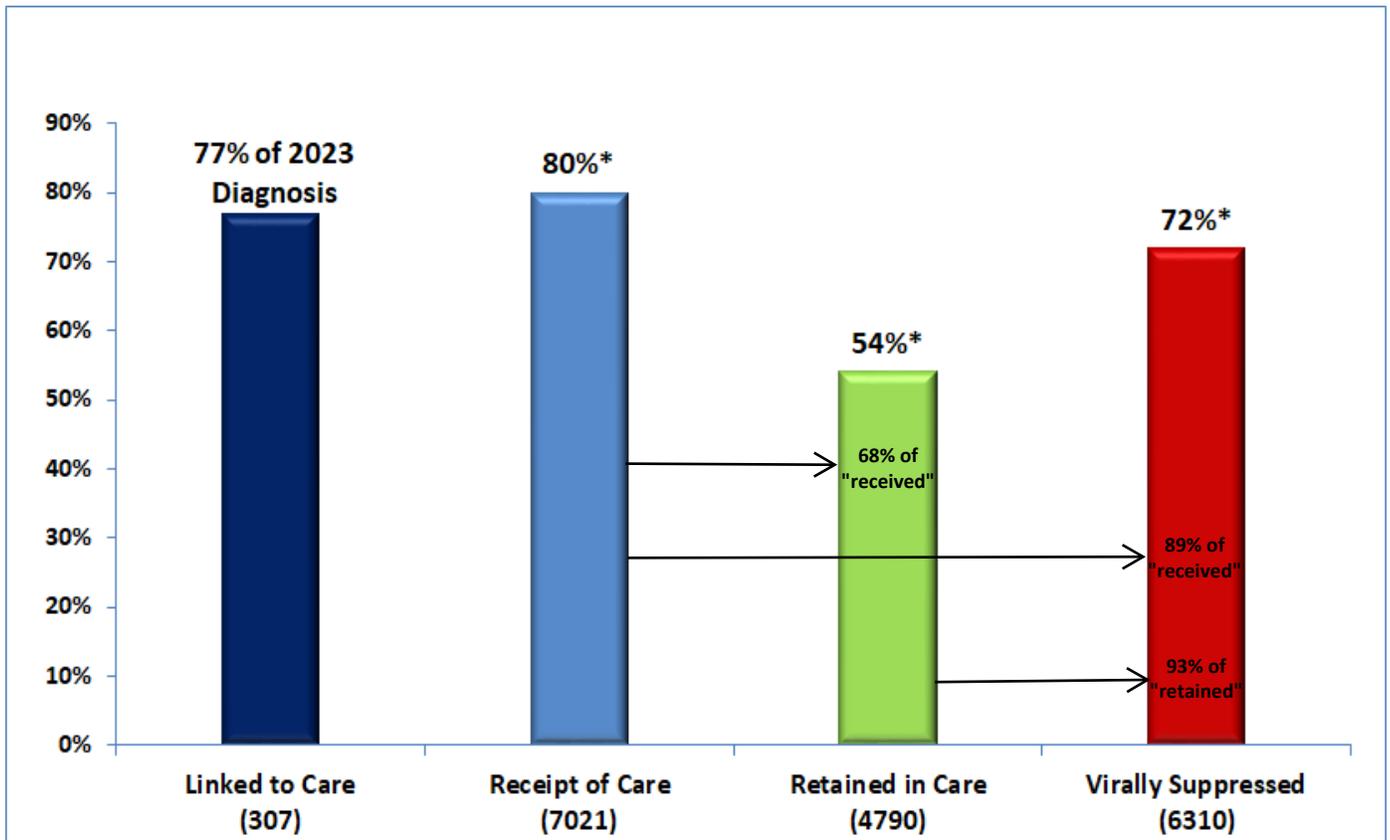
(3) IDU = Injection drug use.

(4) Heterosexual includes persons who have had heterosexual contact with a PWH or are at risk for HIV.

(5) Undetermined refers to persons whose mode of exposure to HIV is unknown. This includes persons who are under investigation, dead, lost to investigation, or refused interview and persons whose mode of exposure remains undetermined after investigation.

(6) Care coordinator region reflects county of residence at time of initial diagnosis.





*Of persons living with diagnosed HIV disease (Denominator) = 8,805. Linkage to care among newly diagnosed 401 adult/adolescents in 2023 only; therefore, the total of new cases for linkage to care is different than all the other measures presented, and should not be directly compared.

Figure 2 represents the percentage of Kentuckians engaged in selected stages of HIV continuum of care during 2023. The HIV continuum presented only reflects adults/adolescents diagnosed and reported to the HIV Surveillance Program, thereby also referred to as a "Diagnosis-based Continuum". Of the 401 new HIV cases diagnosed in Kentucky during 2023, 307 (77%) were linked to HIV medical care within one month of HIV diagnosis. There were 8,805 adults/adolescents with their most recent address in Kentucky diagnosed with HIV disease (regardless of progression to AIDS) at the end of 2022 and living at the end of 2023. Of those, 80% had a care marker in 2023 and were considered to be in care, 54% were retained in continuous care in 2023 and 72% achieved viral suppression.

Of the 7,021 adult/adolescent PWH who received care in 2023, 68% were retained in continuous care and 89% achieved viral suppression. It is also noteworthy that of the 4,790 adults/adolescents who were retained in continuous care, 93% achieved viral suppression. These data highlight the need to link people to care, as this significantly improves their retention and viral load suppression rates (indicating the use of ART). Sustained viral suppression is crucial for achieving optimal health outcomes at both individual and population levels, as effective treatment helps prevent onward transmission.¹

¹Hall HI, Tang T, Westfall AO, Mugavero MJ. HIV care visits and time to suppression, 19 U.S. jurisdictions, and implications for treatment, prevention and the national HIV/AIDS strategy. Plos ONE. 2013;8(12):e84318. doi: 10.1371/journal.pone.0084318.

Table 2. Kentuckians Aged⁽¹⁾ 13+ Years Living with Diagnosed HIV Engaged in Selected Stages of HIV Care in 2023 by Sex at Birth, Current Age, Race/Ethnicity, Transmission Route and Care Coordinator Region, Kentucky

Characteristics	HIV Diagnosed		Received Any HIV Care		Retained in HIV Care		Virally Suppressed	
	No.	%	No.	%	No.	%	No.	%
SEX AT BIRTH								
Male	7,144	81	5,742	82	3,934	82	5,155	82
Female	1,661	19	1,279	18	856	18	1,155	18
AGE in 2023								
13-19	4	<1	4	<1	3	<1	3	<1
20-29	560	6	463	7	304	6	418	7
30-39	2,026	23	1,640	23	1,088	23	1,435	23
40-49	1,915	22	1,495	21	995	21	1,359	22
50+	4,300	49	3,419	49	2,400	50	3,095	49
RACE/ETHNICITY								
White, Not Hispanic	4,634	53	3,827	55	2,608	54	3,509	56
Black, Not Hispanic	2,644	30	1,987	28	1,332	28	1,687	27
Hispanic	935	11	704	10	511	11	657	10
Other/Unknown	592	7	503	7	339	7	457	7
TRANSMISSION ROUTE								
MMSC ⁽³⁾	4,883	55	4,105	58	2,833	59	3,759	60
IDU ⁽⁴⁾	818	9	620	9	397	8	513	8
MMSC/IDU	618	7	500	7	331	7	429	7
Heterosexual ⁽⁵⁾	1,203	14	958	14	661	14	873	14
Other ⁽⁶⁾	14	<1	13	<1	4	<1	12	<1
Undetermined ⁽⁷⁾	1,269	14	825	12	564	12	724	11
CARE COORDINATOR REGION⁽⁸⁾								
Barren	911	10	729	10	535	11	673	11
Kentucky River	61	1	45	1	28	1	40	1
Lake Cumberland	479	5	381	5	243	5	338	5
Lexington	2,101	24	1,750	25	1,303	27	1,612	26
Louisville	3,898	44	3,086	44	2,030	42	2,693	43
Northern Kentucky	806	9	581	8	313	7	530	8
Purchase	549	6	449	6	338	7	424	7
TOTAL⁽²⁾	8,805	100	7,021	100	4,790	100	6,310	100

(1) Current age in 2023.

(2) Percentages may not total 100% due to rounding.

(3) MMSC = Male-to-male sexual contact.

(4) IDU = Injection drug use.

(5) Heterosexual includes persons who have had heterosexual contact with a PWH or are at risk for HIV.

(6) Other includes persons who had exposure through hemophilia/coagulation disorder, transfusion/transplant or perinatal, but diagnosed as an adult.

(7) Undetermined refers to persons whose route of exposure to HIV is unknown. This includes persons who are under investigation, deceased, lost to investigation, or refused interview and persons whose route of exposure remains undetermined after investigation.

(8) Care coordinator region reflects county of residence at time of initial diagnosis.



Table 3. Kentuckians Aged⁽¹⁾ 13+ Years Living with Diagnosed HIV Not Engaged in Selected Stages of HIV Care in 2023 by Sex at Birth, Current Age, Race/Ethnicity, Transmission Route and Care Coordinator Region, Kentucky

Characteristics	HIV Diagnosed		No Receipt of Any HIV Care		Not Retained in HIV Care		Not Virally Suppressed	
	No.	%	No.	%	No.	%	No.	%
SEX AT BIRTH								
Male	7,144	81	1,402	79	3,210	80	1,989	80
Female	1,661	19	382	21	805	20	506	20
AGE in 2023								
13-19	4	<1	0	0	1	<1	1	<1
20-29	560	6	97	5	256	6	142	6
30-39	2,026	23	386	22	938	23	591	24
40-49	1,915	22	420	24	920	23	556	22
50+	4,300	49	881	49	1,900	47	1,205	48
RACE/ETHNICITY								
White, Not Hispanic	4,634	53	807	45	2,026	50	1,125	45
Black, Not Hispanic	2,644	30	657	37	1,312	33	957	38
Hispanic	935	11	231	13	424	11	278	11
Other/Unknown	592	7	89	5	253	6	135	5
TRANSMISSION ROUTE								
MMSC ⁽³⁾	4,883	55	778	44	2,050	51	1,124	45
IDU ⁽⁴⁾	818	9	198	11	421	10	305	12
MMSC/IDU	618	7	118	7	287	7	189	8
Heterosexual ⁽⁵⁾	1,203	14	245	14	542	14	330	13
Other ⁽⁶⁾	14	<1	1	<1	10	<1	2	<1
Undetermined ⁽⁷⁾	1,269	14	444	25	705	18	545	22
CARE COORDINATOR REGION⁽⁸⁾								
Barren	911	10	182	10	376	9	238	10
Kentucky River	61	1	16	1	33	1	21	1
Lake Cumberland	479	5	98	6	236	6	141	6
Lexington	2,101	24	351	20	798	20	489	20
Louisville	3,898	44	812	45	1,868	47	1,205	48
Northern Kentucky	806	9	225	13	493	12	276	11
Purchase	549	6	100	6	211	5	125	5
TOTAL⁽²⁾	8,805	100	1,784	100	4,015	100	2,495	100

(1) Current age in 2023.

(2) Percentages may not total 100% due to rounding.

(3) MMSC = Male-to-male sexual contact.

(4) IDU = Injection drug use.

(5) Heterosexual includes persons who have had heterosexual contact with a PWH or are at risk for HIV.

(6) Other includes persons who had exposure through hemophilia/coagulation disorder, transfusion/transplant or perinatal, but diagnosed as an adult.

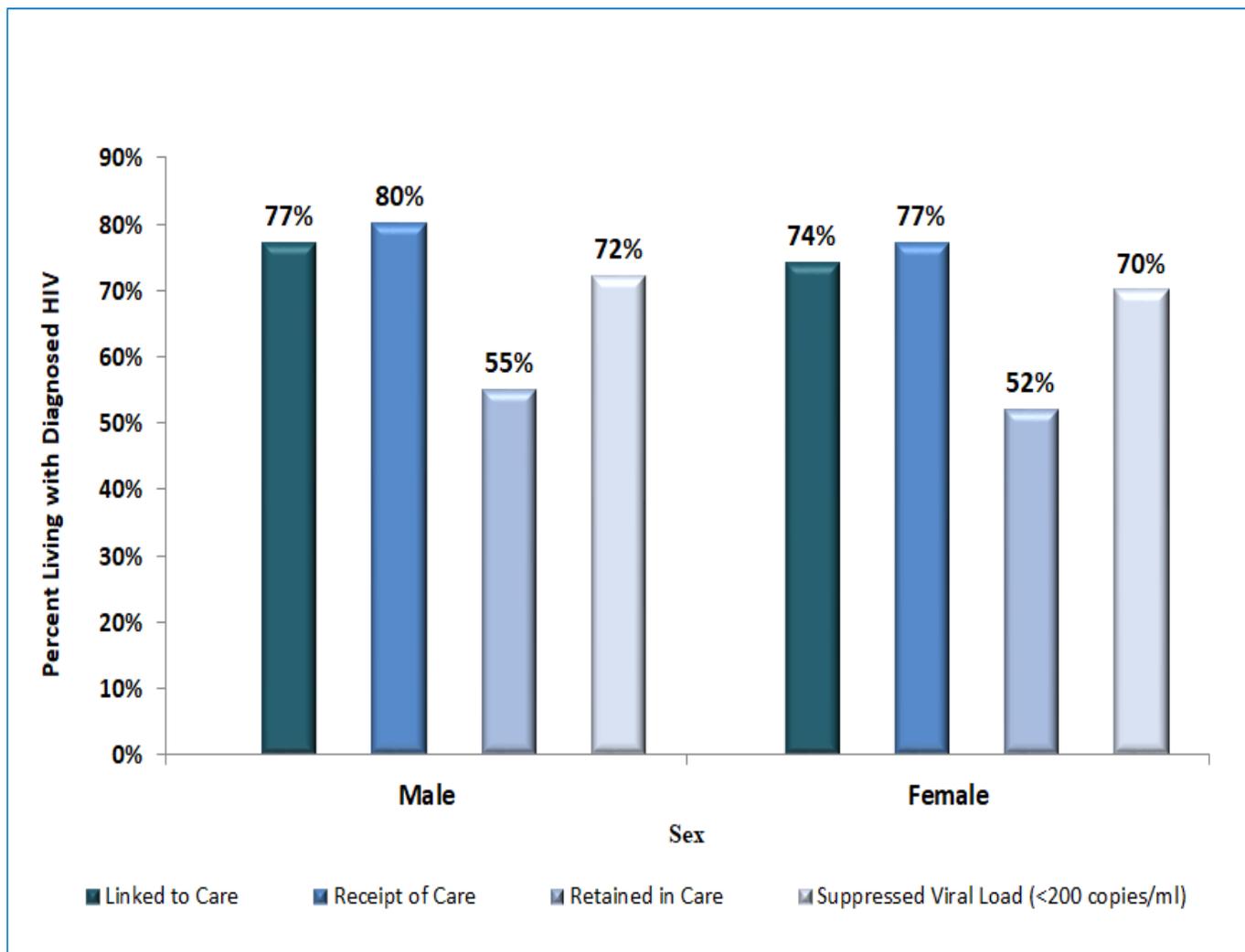
(7) Undetermined refers to persons whose route of exposure to HIV is unknown. This includes persons who are under investigation, deceased, lost to investigation or refused interview and persons whose route of exposure remains undetermined after investigation.

(8) Care coordinator region reflects county of residence at time of initial diagnosis.



Kentucky Engagement in Selected Stages of Care by Sex at Birth, 2023

Figure 3. Percentage of HIV-Diagnosed Adult/Adolescent Kentuckians Engaged in Selected Stages of HIV Care by Sex at Birth, 2023



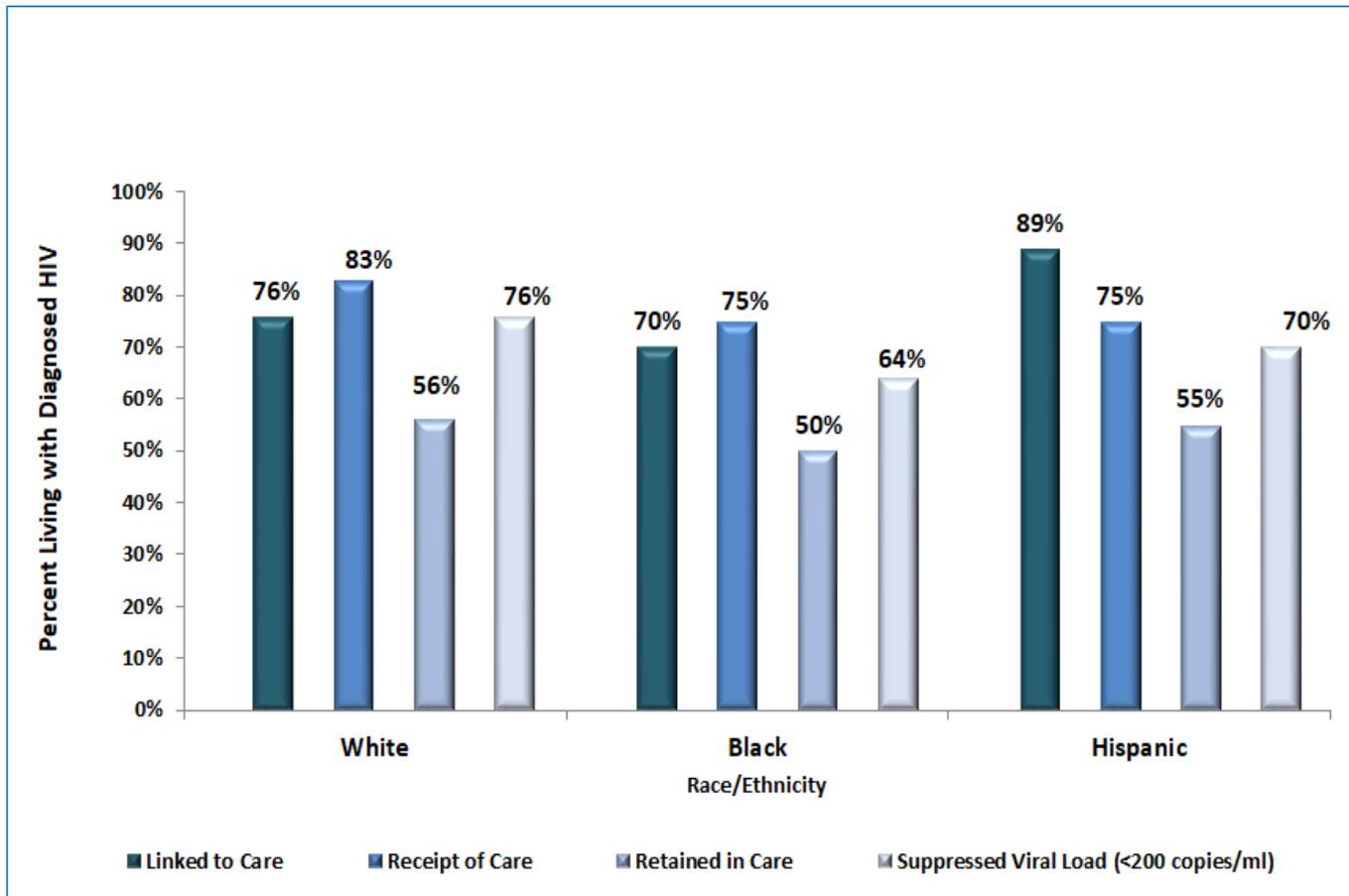
Linkage to care among newly diagnosed adults/adolescents in 2023 only. Therefore, the total number of new cases for linkage to care is different than all the other measures presented and should not be directly compared.

Figure 3 shows the percentages of adult/adolescent Kentuckians engaged in the care continuum by sex at birth. Adult/adolescent males in Kentucky performed better than females for linkage to care (77% for males vs. 74% for females). Males attained a higher level for receipt of care at 80% compared to 77% for females. Males also achieved higher levels of retention in care at 55% versus 52% for females and viral suppression at 72% compared to females at 70%.



Kentucky Engagement in Selected Stages of Care by Race/Ethnicity, 2023

Figure 4. Percentage of HIV-Diagnosed Adult/Adolescent Kentuckians Engaged in Selected Stages of HIV Care by Race/Ethnicity, 2023



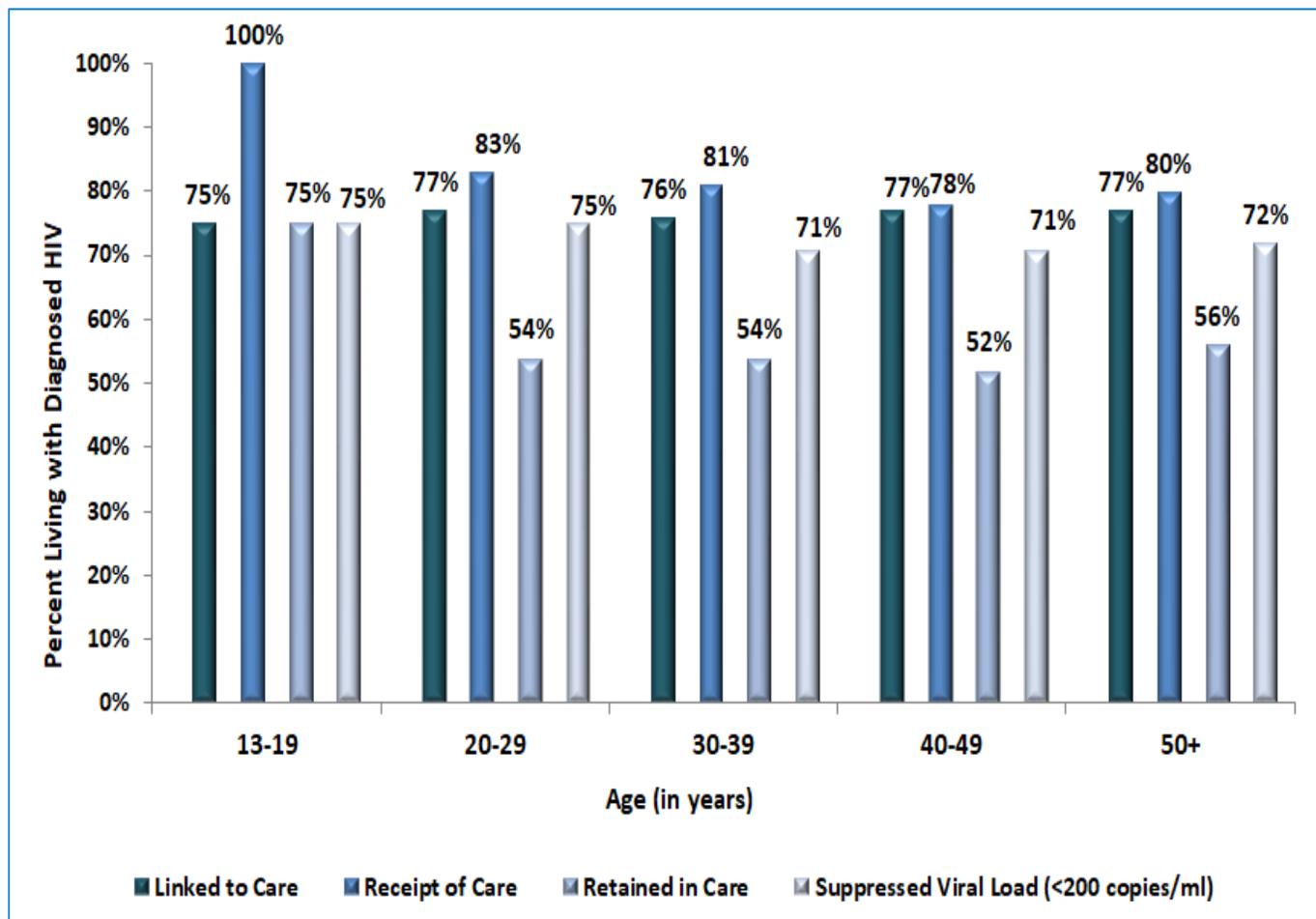
Linkage to care among newly diagnosed adult/adolescents in 2023 only. Therefore, the total of new cases for linkage to care is different than all the other measures presented, and should not be directly compared.

Figure 4 shows the percentages of adult/adolescent Kentuckians engaged in the HIV care continuum by race/ethnicity. In 2023, Hispanic adult/adolescent Kentuckians newly diagnosed with HIV attained higher levels of linkage to HIV medical care (89%) compared to Black population at 70% and the White population at 76%. White adults/adolescents attained higher rates compared to Black and Hispanic adults/adolescents for receipt of care, retention in care, and viral suppression. Seventy-six percent (76%) of White adults/adolescents were virally suppressed in 2023, compared to 64% of Black and 70% of Hispanic adults/adolescents.

In order for PWH to attain viral suppression, they need to be linked to care and remain engaged or re-engaged if they fall out of care. The figure highlights that PWH who are less likely to be retained in care are ultimately less likely to achieve viral suppression.

Kentucky Engagement in Selected Stages of Care by Current Age, 2023

Figure 5. Percentage of HIV-Diagnosed Adult/Adolescent Kentuckians Engaged in Selected Stages of HIV Care by Current Age, 2023



Linkage to care among newly diagnosed adults/adolescents in 2023 only. Therefore, the total of new cases for linkage to care is different than all the other measures presented, and should not be directly compared.

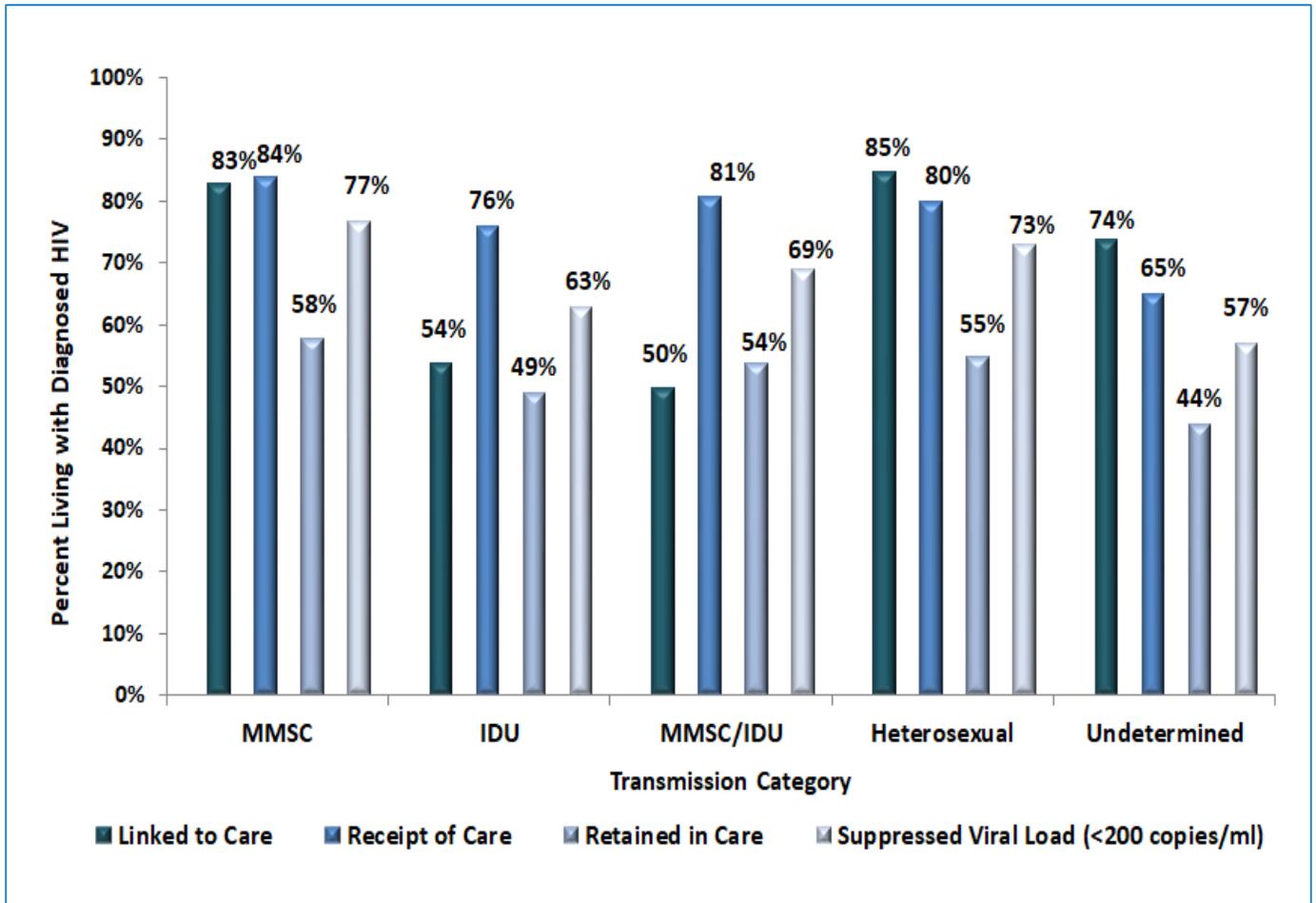
Figure 5 shows the percentages of adult/adolescent Kentuckians engaged in the HIV care continuum by their current age in 2023 – the analysis year. The figure shows that 13-19 year olds were least likely (75%) to get linked to care, when compared to the other current age categories. Receipt of care was highest among those aged 13-19 years old (100%), while 40-49 year olds were least likely to receive care at 78%.

Retention in care was highest among 13-19 year olds at 75%, and lowest among 40-49 year old category at 52%. Kentucky adults/adolescents aged 13-19 and 20-29 years old were most likely to be virally suppressed at 75% when compared to other age categories, while the 30-39 and 40-49 years old age categories were least likely to be virally suppressed at 71%.



Kentucky Engagement in Selected Stages of Care by Mode of Transmission, 2023

Figure 6. Percentage of HIV-Diagnosed Adult/Adolescent Kentuckians Engaged in Selected Stages of HIV Care by Mode of Transmission, 2023



Linkage to care among newly diagnosed adults/adolescents in 2023 only. Therefore, the total of new cases for linkage to care is different than all the other measures presented, and should not be directly compared.

MMSC = Male-to-male sexual contact.

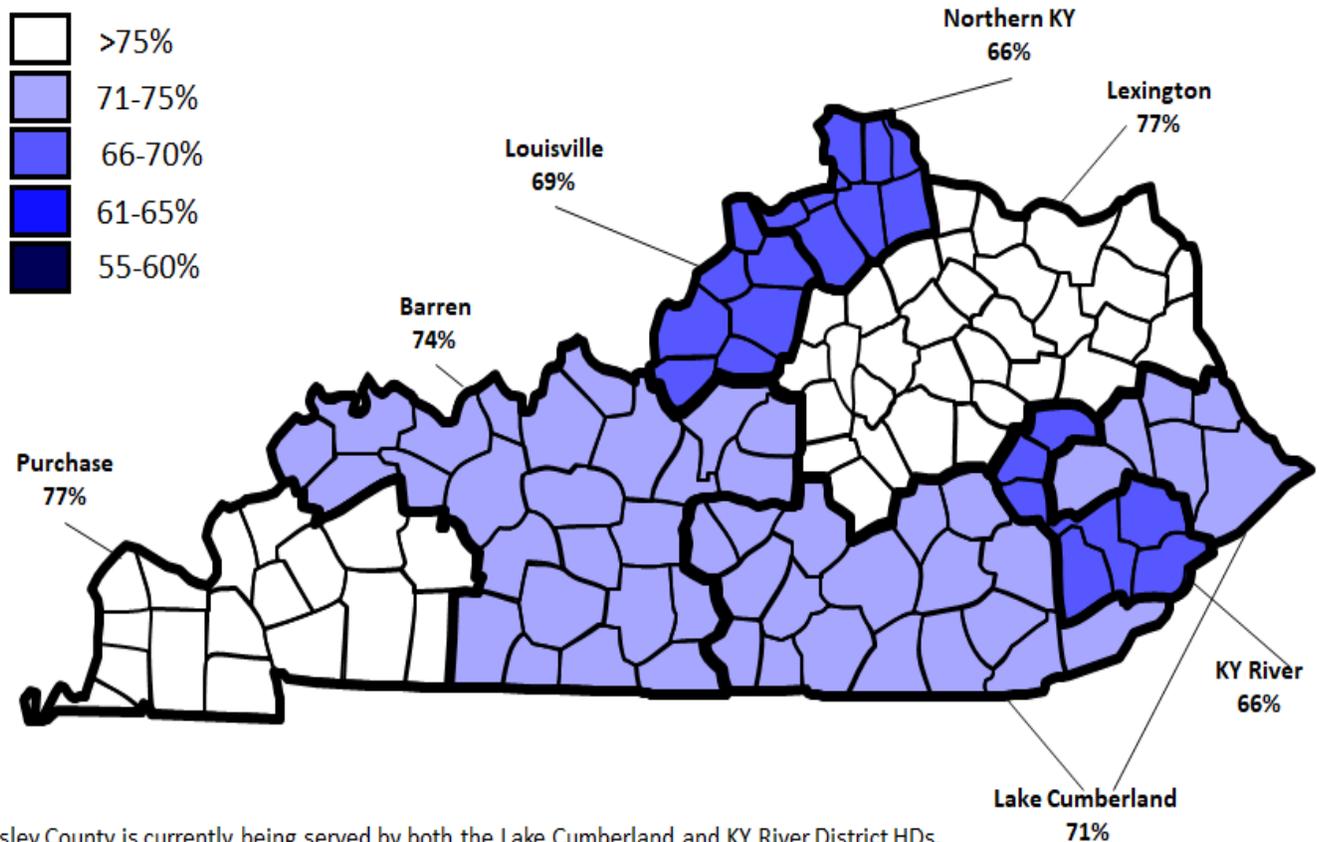
IDU = Injection drug use.

Figure 6 shows the percentages of adult/adolescent Kentuckians engaged in the care continuum by mode of transmission. Persons with MMSC/IDU as category of transmission had the lowest percentages of linkage to care at 50%. Persons with undetermined risk factor had the lowest percentages of receipt of care, retention in care and viral load suppression. Conversely, those who reported Heterosexual as a category of transmission had the highest rates of linkage to care (85%), while the MMSC category had the highest percentage of receipt of HIV care (84%). Persons with MMSC as a category of HIV transmission also had the highest level of retention in care (58%) and viral suppression (77%).



Kentucky Viral Suppression Attainment by Care Coordinator Region, 2023

Figure 7. Percentage of Kentuckians Living with HIV as of December 31, 2023 Who were Virally Suppressed in 2023 by Care Coordinator Region



Owsley County is currently being served by both the Lake Cumberland and KY River District HDs.
 Todd County is covered by both the Todd County Health Department and Purchase Region.
 Graves County is covered by both Graves County Health Department and Purchase Region.

Note: The percentages presented in Figure 7 represent the proportion of persons achieving viral suppression out of the total for each individual region. Total numbers of persons diagnosed for each region are presented in Table 2. The care coordinator's region reflects county of residence at time of initial diagnosis.

Figure 7 shows the percentage of adult/adolescent Kentuckians who achieved viral suppression within each individual care coordinator region. Lexington and Purchase Care Coordinator regions had the highest percentage of persons achieving viral suppression at 77% each, followed by the Barren Care Coordinator region at 74%.

In Lake Cumberland 71 out of every 100 PWH were virally suppressed during 2023. Sixty-nine percent (69%) of the Kentuckians living with HIV in the Louisville region achieved viral suppression. Northern Kentucky and Kentucky River regions had the lowest percentage of viral suppression in the state at 66%.

Limitations:

The analysis presented uses a diagnosis-based continuum; therefore, it's noteworthy that Kentuckians living with HIV who have not been diagnosed and reported to the KDPH's HIV/AIDS Surveillance Program were omitted.

The most recent known address was used to determine persons (Kentuckians) in the denominator. Only about two-third of PWH had a current address listed within the most recent two years. The other one-third had more dated addresses listed.

These estimates do not account for in-and-out migration to/from the jurisdiction. This means the estimate may exclude those who have moved into the area and may also include those who have moved out of the area if immediate notification is not received at KDPH. The Surveillance Program participates in the Routine Interstate Duplication Resolution (RIDR) which helps to account for some of the information on migration but isn't always complete or timely.

The current continuum only used HIV surveillance data, therefore any laboratory reports that may not be reported therein but may be in other data sources such as the care coordinator and drug assistance programs have not been utilized. Additionally, as per guidance from Centers for Disease Control and Prevention the last two years of data is considered preliminary due to reporting delays.



Map for Counties Covered	Region Name and Address	Counties Covered			
	Purchase Region: LivWell Community Health Services 1903 Broadway Street Paducah, KY 42001 (270) 444-8183, (877) 444-8183 Fax: (270) 444-8147	Ballard Caldwell Calloway Christian	Crittenden Fulton Graves* Hickman	Hopkins Livingston Lyon Marshall	McCracken Muhlenberg Todd** Trigg
	Barren Region: Matthew 25 452 Old Corydon Road Henderson, KY 42420 (270) 826-0200, (866) 607-6590 Fax: (270) 826-0212	Allen Barren Breckinridge Butler Daviess Edmonson Grayson	Hancock Hardin Hart Henderson Larue Logan Marion	McLean Meade Metcalfe Monroe Nelson Ohio Simpson	Union Warren Washington Webster
	Louisville Region: ULSD KCCP 1212 S. 4 th Street Suite 101 Louisville, KY 40203 (502) 852-2008 Fax: (502) 852-2510	Bullitt Henry	Jefferson Oldham	Shelby Spencer	Trimble
	Northern Kentucky Region: Northern KY Distt HD 8001 Veterans Memorial Drive Florence, KY 41042 (859) 341-4264 Fax: (859) 578-3689	Boone Campbell	Carroll Gallatin	Grant Kenton	Owen Pendleton
	Lexington Region: UK Bluegrass Care Clinic 3101 Beaumont Ctr Circle Suite 300 Lexington, KY 40513 (859) 323-5544, (866) 761-0206 Fax: (859) 257-3477	Anderson Bath Bourbon Boyd Boyle Bracken Carter Clark	Elliott Estill Fayette Fleming Franklin Garrard Greenup Harrison	Jessamine Lawrence Lewis Lincoln Madison Mason Menifee Mercer	Montgomery Morgan Nicholas Powell Robertson Rowan Scott Woodford
	Lake Cumberland Region: Lake Cumberland Distt HD 500 Bourne Avenue Somerset, KY 42501 (606) 678-4761, (800) 928-4416 Fax: (606) 678-2708	Adair Bell Breathitt Casey Clay Clinton Cumberland	Floyd Green Harlan Jackson Johnson Knox	Laurel Magoffin Martin McCreary Pike Pulaski	Rockcastle Russell Taylor Wayne Whitley
	Kentucky River Region: Kentucky River Distt HD 441 Gorman Hollow Road Hazard, KY 41701 (606) 439-2361 Fax: (606) 439-0870	Knott Lee	Leslie Letcher	Owsley Perry	Wolfe
	Graves County HD 416 Central Ave Mayfield, KY 42066 (270) 247-3553	Graves			
	Todd County HD 205 Public Square Elkton, KY 42220 (270) 265-2362	Todd			
	Mountain Comprehensive Care PO Box Whitesburg, KY 41858 606-633-4823	Bell Clay Floyd Harlan Jackson Johnson	Knott Knox Leslie Letcher Magoffin Owsley	Perry Pike	

*Graves County is currently being served by both LivWell and the Graves County HD. **Todd County is currently being served by both LivWell and the Todd County HD. For more information, contact the nearest Care Coordinator or the Care Coordinator Program Administrator: (502) 564-6539 or (800) 420-7431.