Dear Reader:

The survival 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 partners[1].

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 immediately be linked into medical care. Kentucky's data shows that 77% of 408 adults/adolescents newly diagnosed in 2022 were successfully linked to medical care within one month of HIV diagnosis.

There were 8,830 adult/adolescents living in Kentucky and diagnosed with HIV disease from the start of the HIV epidemic in 1982 through 2021, and living at the end of 2022. Of those, in 2022, 70% received medical care, 47% were retained in continuous care and 60% achieved viral suppression.

Of the 6,140 adult/adolescent persons who received medical care in 2022, 68% were retained in continuous care and 86% achieved viral suppression. It is also noteworthy that of the 4,163 adult/adolescents who were retained in care, 92% achieved viral suppression.

Sincerely,

Manny Singh, MBBS, MPH
Senior Epidemiologist
HIV/AIDS Section

[1]Cohen MS, Chen YQ, McCauley M, et al. Prevention of HIV-1 infection with early antiretroviral therapy. N Engl J Med 2011;365:493-505.

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, 2023.
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, 2022. The numerators (persons engaged at each stage of care, out of the denominator) were calculated using laboratory data as of June 30, 2023 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, 2021 and living through December 31, 2022 (persons with HIV [PWH]). Persons included were adult/adolescents (≥ 13 years old) at time of diagnosis and had their most recent known address in Kentucky. Data as of December 31, 2022 were used to calculate the denominator.

Linked to Care – Defined as Kentuckians newly diagnosed in 2022 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 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 (408) than the other indicators and data as of June 30, 2023 were used to account for reporting delays for those diagnosed later in 2022.

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 2022 were used as measures for medical care visits.

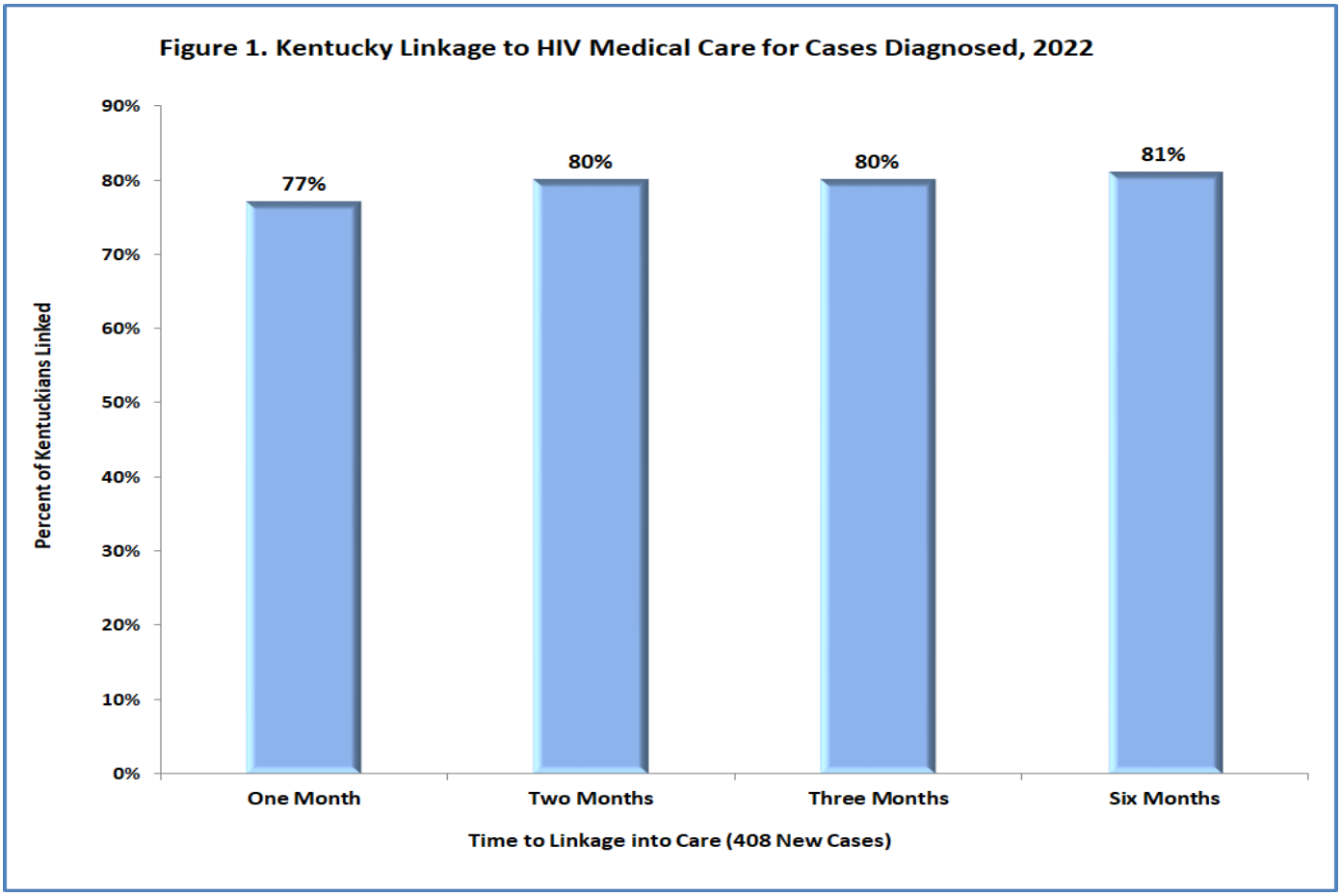
Retained in Care – Defined as PWH who had two or more HIV-related medical care visits performed at least three months apart during a 12-month period. Viral load, CD4+ cell count and percent and nucleotide sequence tests collected in 2022 were used as measures for medical care visits.

Viral Suppression – Defined as the number of PWH whose most recent viral load test in 2022 was < 200 copies/ml. The most recent viral load result collected at any point in 2022 was considered.

Morbidity – Defined as the state of being symptomatic or unhealthy for 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 2022, 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 2022 (408 cases) as of June 30, 2023.

The data shows that 77% of Kentuckians diagnosed with HIV during 2022 were linked to HIV related medical care within one month of diagnosis. Eighty percent (80%) of newly diagnosed cases were linked to care within three months of HIV diagnosis. Eighty-one (81) 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 diagnosis[1].

[1]Hall HI, Tang T, Westafall 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 1. New HIV Diagnoses in 2022 Showing Linkage to Care Status within One Month of Diagnosis by Sex at Birth, Age at Diagnosis, Race/Ethnicity, Transmission Category and Care Coordinator Region, Kentucky

Characteristics	Linked to Care*		Not Linked to Care**		Total New Diagnoses	
	No.	% (1)	No.	% (1)	No.	% (1)
SEX AT BIRTH						
Male	262	83	73	78	335	82
Female	52	17	21	22	73	18
AGE AT DIAGNOSIS						
13-19	11	4	0	0	11	3
20-29	111	35	27	29	138	34
30-39	88	28	28	30	116	28
40-49	50	16	18	19	68	17
50+	54	17	21	22	75	18
RACE/ETHNICITY						
White, Not Hispanic	157	50	55	59	212	52
Black, Not Hispanic	91	29	29	31	120	29
Hispanic	51	16	6	6	57	14
Other/Unknown	15	5	4	4	19	5
TRANSMISSION CATEGORY						
MMSC(2)	182	58	26	28	208	51
IDU(3)	42	13	25	27	67	16
MMSC/IDU	17	5	6	6	23	6
Heterosexual(4)	19	6	4	4	23	6
Undetermined(5)	54	17	33	35	87	21
CARE COORDINATOR REGION(6)						
Purchase	24	8	3	3	27	7
Barren	28	9	10	11	38	9
Lake Cumberland	16	5	6	6	22	5
Lexington	68	22	21	22	89	22
Louisville	151	48	48	51	199	49
Northern Kentucky	25	8	5	5	30	7
Kentucky River	2	1	1	1	3	1
TOTAL(1)	**314**	**100**	**94**	**100**	**408**	**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.

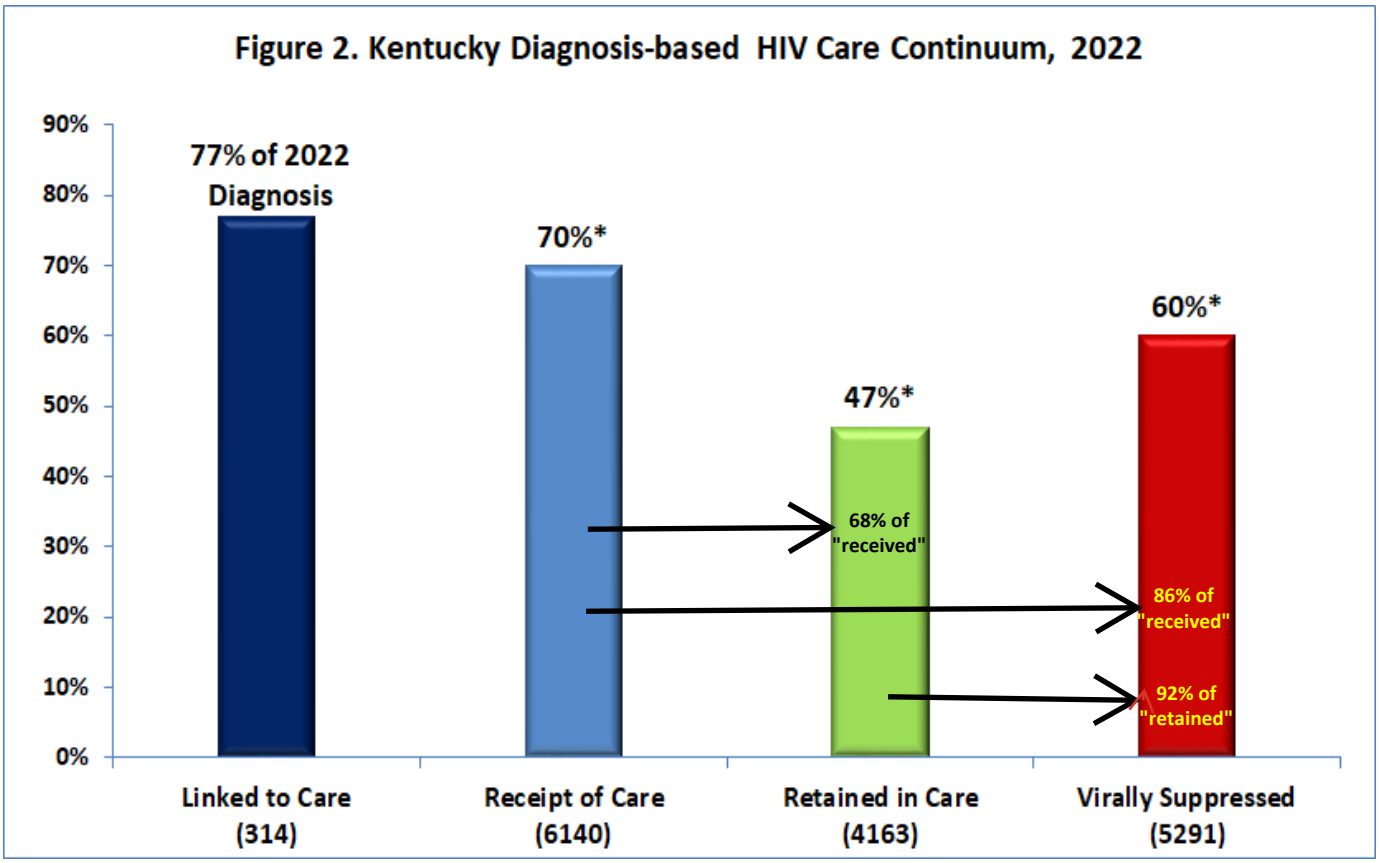
(2) MMSC = Male-to-male sexual contact.

(3) IDU = Injection drug use.

(4) Heterosexual includes persons who have had heterosexual contact with a PWH or 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) = 8,830.
Linkage to care among newly diagnosed 408 adult/adolescents in 2022 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 2022. The HIV continuum presented only reflects adult/adolescents diagnosed and reported to the HIV Surveillance Program, thereby also referred to as a "Diagnosis- based Continuum". Of the 408 new HIV cases diagnosed in Kentucky during 2022, 314 (77%) were linked to HIV medical care within one month of HIV diagnosis. There were 8,830 adult/adolescents with their most recent address in Kentucky diagnosed with HIV disease (regardless of progression to AIDS) at the end of 2021 and living at the end of 2022. Of those, 70% had a care marker in 2022 and were considered to be in care, 47% were retained in continuous care in 2022, and 60% achieved viral suppression.

Of the 6,140 adult/adolescent PWH who received care in 2022, 68% were retained in continuous care and 86% achieved viral suppression. It is also noteworthy that of the 4,163 adult/adolescents who were retained in continuous care, 92% achieved viral suppression. These data highlight the need to get people linked and engaged in care, as this greatly improves their retention and viral load suppression rates (indicating use of ART). Sustained viral suppression is the key to optimal health outcomes at both the individual and population levels as treatment helps prevent forward transmission.[1]

[1]Hall HI, Tang T, Westafall 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 2022 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	
SEX AT BIRTH	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Male	7,151	81	4,997	81	3,387	81	4,295	81
Female	1,679	19	1,143	19	776	19	996	19
AGE in 2022								
13-19	7	<1	5	<1	4	<1	5	<1
20-29	625	7	449	7	276	7	381	7
30-39	1,990	23	1,419	23	909	22	1,189	22
40-49	1,936	22	1,285	21	844	20	1,114	21
50+	4,272	48	2,982	49	2,130	51	2,602	49
RACE/ETHNICITY								
White, Not Hispanic	4,724	54	3,401	55	2,342	56	2,995	57
Black, Not Hispanic	2,762	31	1,764	29	1,131	27	1,433	27
Hispanic	797	9	547	9	384	9	498	9
Other/Unknown	547	6	428	7	306	7	365	7
TRANSMISSION ROUTE								
MMSC[3]	4,879	55	3,508	57	2,391	57	3,079	58
IDU[4]	828	9	558	9	372	9	448	8
MMSC/IDU	633	7	477	8	315	8	399	8
Heterosexual[5]	1,229	14	884	14	617	15	773	15
Other[6]	15	<1	12	<1	7	<1	11	<1
Undetermined[7]	1,246	14	701	11	461	11	581	11
CARE COORDINATOR REGION[8]								
Barren	928	11	676	11	501	12	601	11
Kentucky River	57	1	42	1	27	1	36	1
Lake Cumberland	471	5	335	5	220	5	297	6
Lexington	2,084	24	1,661	27	1,241	30	1,519	29
Louisville	3,909	44	2,439	40	1,528	37	1,972	37
Northern Kentucky	823	9	564	9	313	6	484	9
Purchase	558	6	423	7	333	8	382	7
TOTAL[2]	8,830	100	6,140	100	4,163	100	5,291	100

(1) Current age in 2022.
(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 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 2022 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	
SEX AT BIRTH	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Male	7,151	81	2,154	80	3,764	81	2,856	81
Female	1,679	19	536	20	903	19	683	19
AGE in 2022								
13-19	7	<1	2	<1	3	<1	2	<1
20-29	625	7	176	7	349	7	244	7
30-39	1,990	23	571	21	1,081	23	801	23
40-49	1,936	22	651	24	1,092	23	822	23
50+	4,272	48	1,290	48	2,142	46	1,670	47
RACE/ETHNICITY								
White, Not Hispanic	4,724	54	1,323	49	2,382	51	1,729	49
Black, Not Hispanic	2,762	31	998	37	1,631	35	1,329	38
Hispanic	797	9	250	9	413	9	299	8
Other/Unknown	547	6	119	4	241	5	182	5
TRANSMISSION ROUTE								
MMSC[3]	4,879	55	1,371	51	2,488	53	1,800	51
IDU[4]	828	9	270	10	456	10	380	11
MMSC/IDU	633	7	156	6	318	7	234	7
Heterosexual[5]	1,229	14	345	13	612	13	456	13
Other[6]	15	<1	3	<1	8	<1	4	<1
Undetermined[7]	1,246	14	545	20	785	17	665	19
CARE COORDINATOR REGION[8]								
Barren	928	11	252	9	427	9	327	9
Kentucky River	57	1	15	1	30	1	21	1
Lake Cumberland	471	5	136	5	251	5	174	5
Lexington	2,084	24	423	16	843	18	565	16
Louisville	3,909	44	1,470	55	2,381	51	1,937	55
Northern Kentucky	823	9	259	10	510	11	339	10
Purchase	558	6	135	5	225	5	176	5
TOTAL[2]	**8,830**	**100**	**2,690**	**100**	**4,667**	**100**	**3,539**	**100**

(1) Current age in 2022.

(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 at risk for HIV.

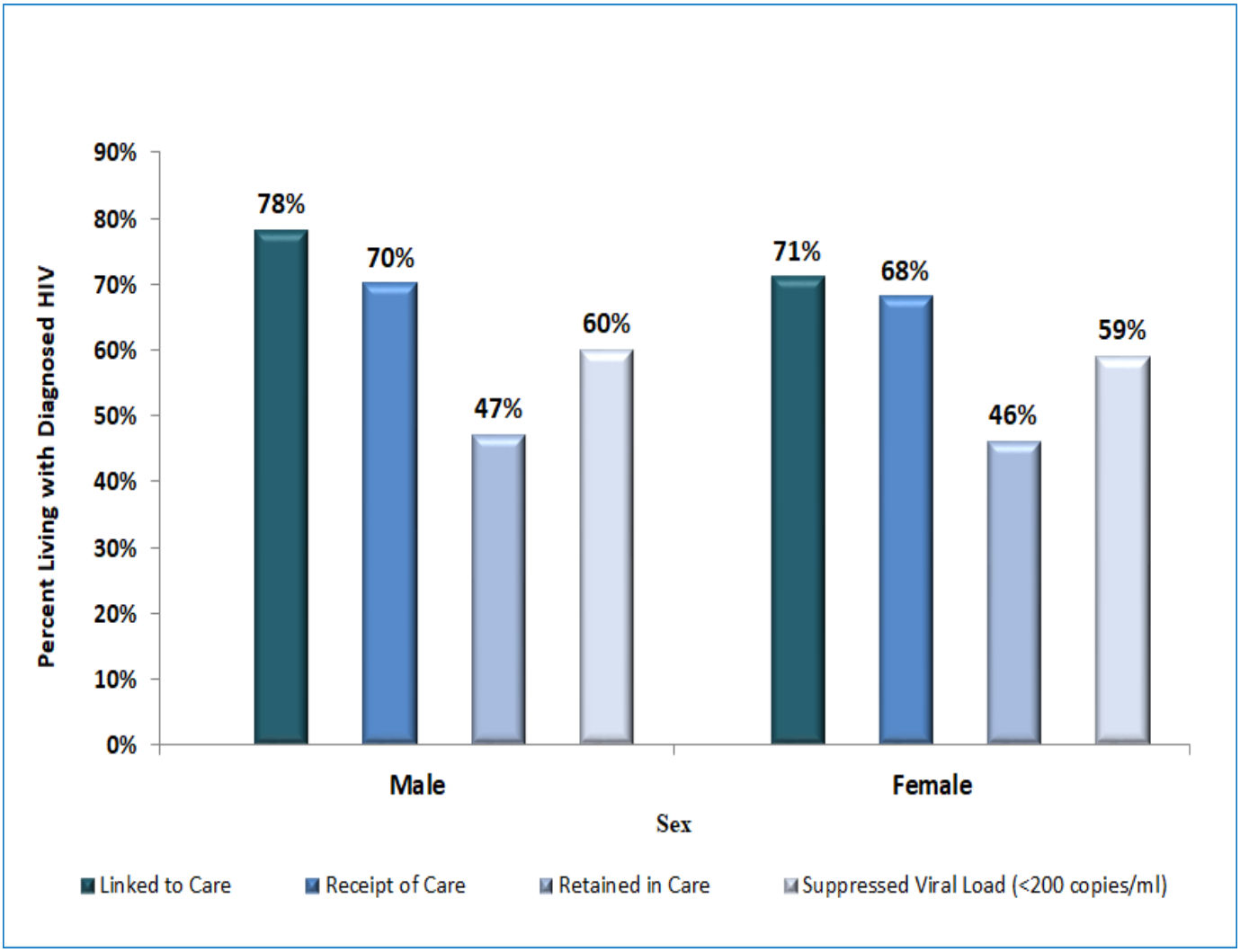
(6) Other includes persons who had exposure through hemophilia/coagulation disorder, transfusion/transplant, or perinatal, but diagnosed as an adult.

(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, 2022

Figure 3. Percentage of HIV-Diagnosed Adult/Adolescent Kentuckians Engaged in Selected Stages of HIV Care by Sex at Birth, 2022

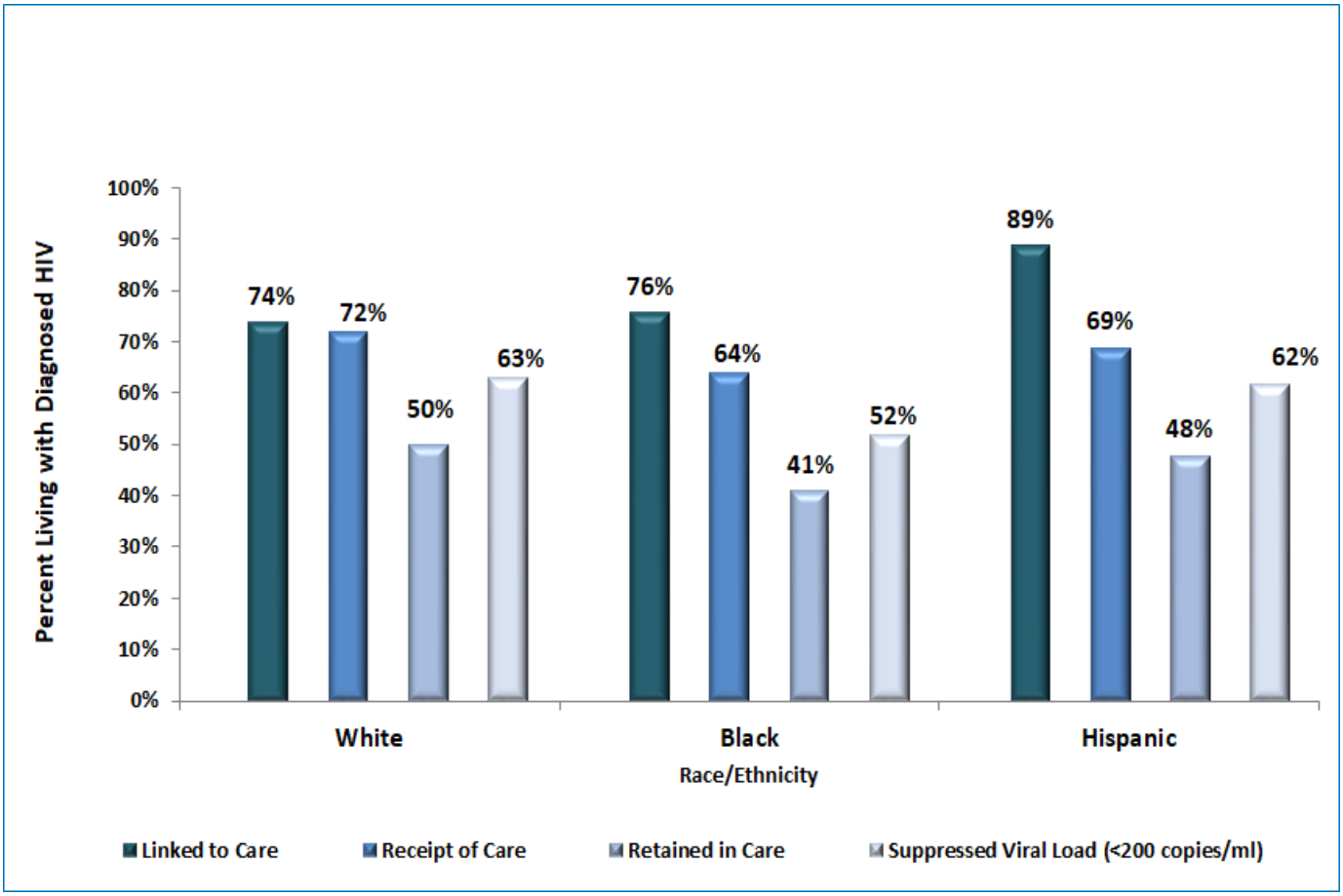


Linkage to care among newly diagnosed adult/adolescents in 2022 only. Therefore the total of new cases for linkage to care is different than all the other measures presented, and should not be directly compared.

Figure 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 (78% for males vs. 71% for females). Males attained higher level for receipt of care at 70% compared to 68% for females. Males also achieved higher levels of retention in care at 47% versus 46% for females and viral suppression at 60% compared to females at 59%.

Kentucky Engagement in Selected Stages of Care by Race/Ethnicity, 2022

Figure 4. Percentage of HIV-Diagnosed Adult/Adolescent Kentuckians Engaged in Selected Stages of HIV Care by Race/Ethnicity, 2022



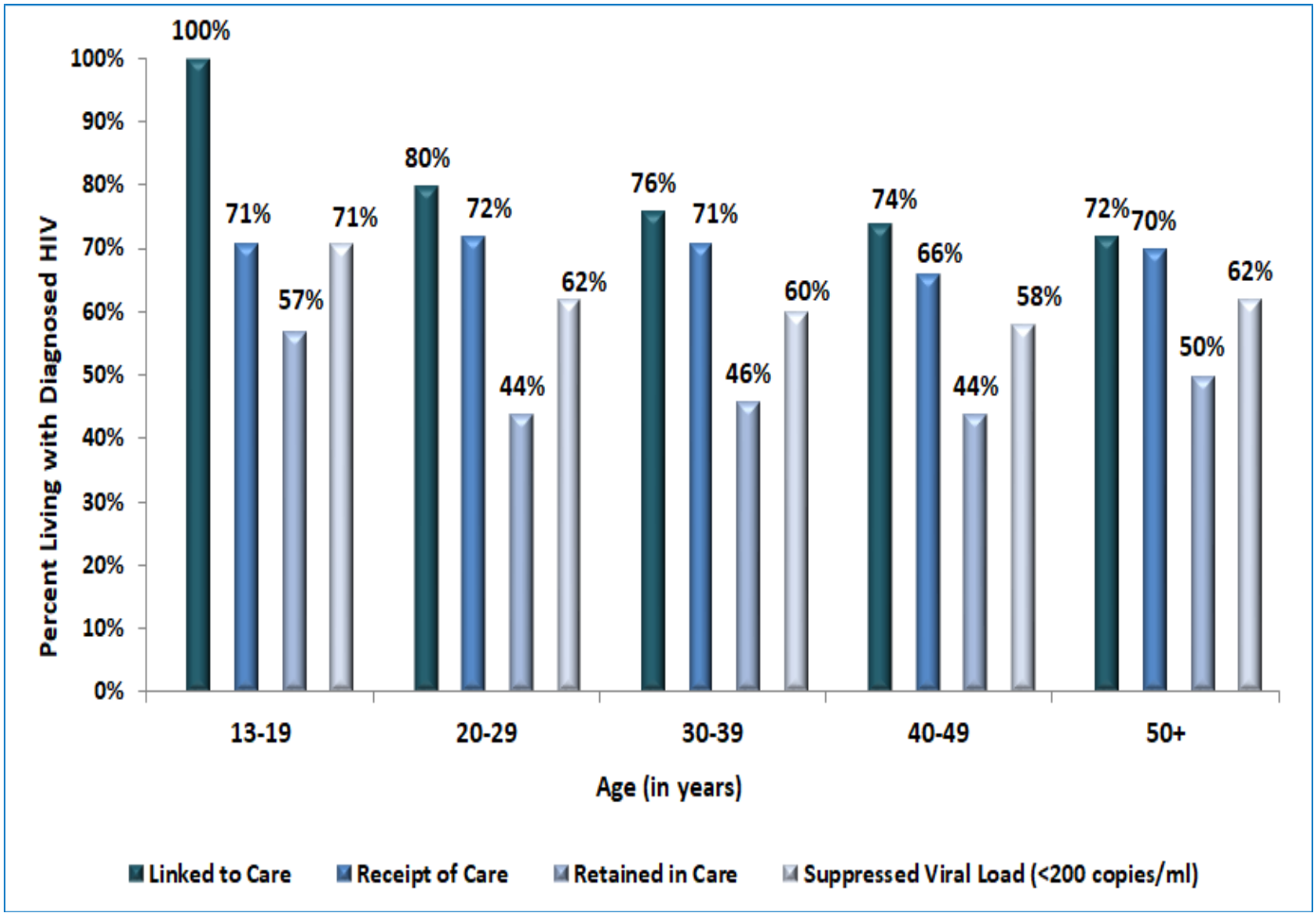
Linkage to care among newly diagnosed adult/adolescents in 2022 only. Therefore the total of new cases for linkage to care is different than all the other measures presented, and should not be directly compared.

Figure 4 shows the percentages of adult/adolescent Kentuckians engaged in the HIV care continuum by race/ethnicity. In 2022, Hispanic adult/adolescent Kentuckians newly diagnosed with HIV attained higher levels of linkage to HIV medical care (89%) compared to their Black and White counterparts at 76% and 74% respectively. White adult/adolescents attained higher rates compared to Black and Hispanic adult/adolescents for receipt of care, retention in care, and viral suppression. Sixty-three percent (63%) of White adult/adolescents were virally suppressed in 2022, compared to 52% of Black and 62% of Hispanic adult/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 health disparities, whereby Black adult/adolescents diagnosed with HIV are less likely to be retained in care and ultimately less likely to be virally suppressed compared to their White and Hispanic counterparts.

Kentucky Engagement in Selected Stages of Care by Current Age, 2022

Figure 5. Percentage of HIV-Diagnosed Adult/Adolescent Kentuckians Engaged in Selected Stages of HIV Care by Current Age, 2022



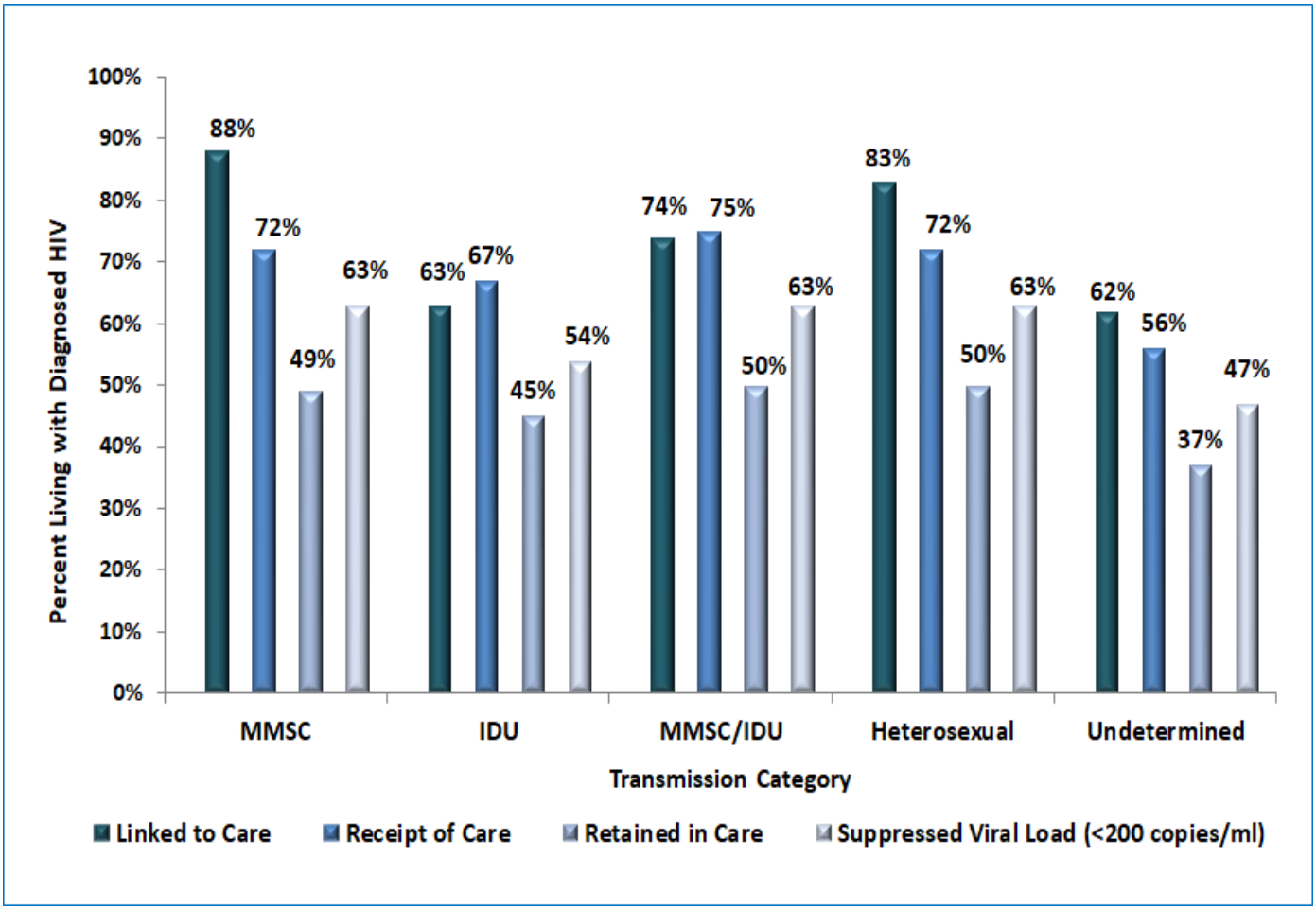
Linkage to care among newly diagnosed adult/adolescents in 2022 only. Therefore the total of new cases for linkage to care is different than all the other measures presented, and should not be directly compared.

Figure 5 shows the percentages of adult/adolescent Kentuckians engaged in the HIV care continuum by their current age in 2022 – the analysis year. The figure shows that 13-19 year olds were most likely (100%) to get linked to care, when compared to the other current age categories. Receipt of care was highest among those aged 20-29 years old (72%), while 40-49 year olds were least likely to receive care at 66%.

Retention in care was highest among 13-19 year olds at 57%, and lowest among 20-29 and 40-49 year old categories at 44%. Adults/adolescent Kentuckians aged 13-19 years were most likely to be virally suppressed at 71% when compared to other age categories, while the 40-49 years age category were least likely to be virally suppressed at 58%.

Kentucky Engagement in Selected Stages of Care by Mode of Transmission, 2022

Figure 6. Percentage of HIV-Diagnosed Adult/Adolescent Kentuckians Engaged in Selected Stages of HIV Care by Mode of Transmission, 2022



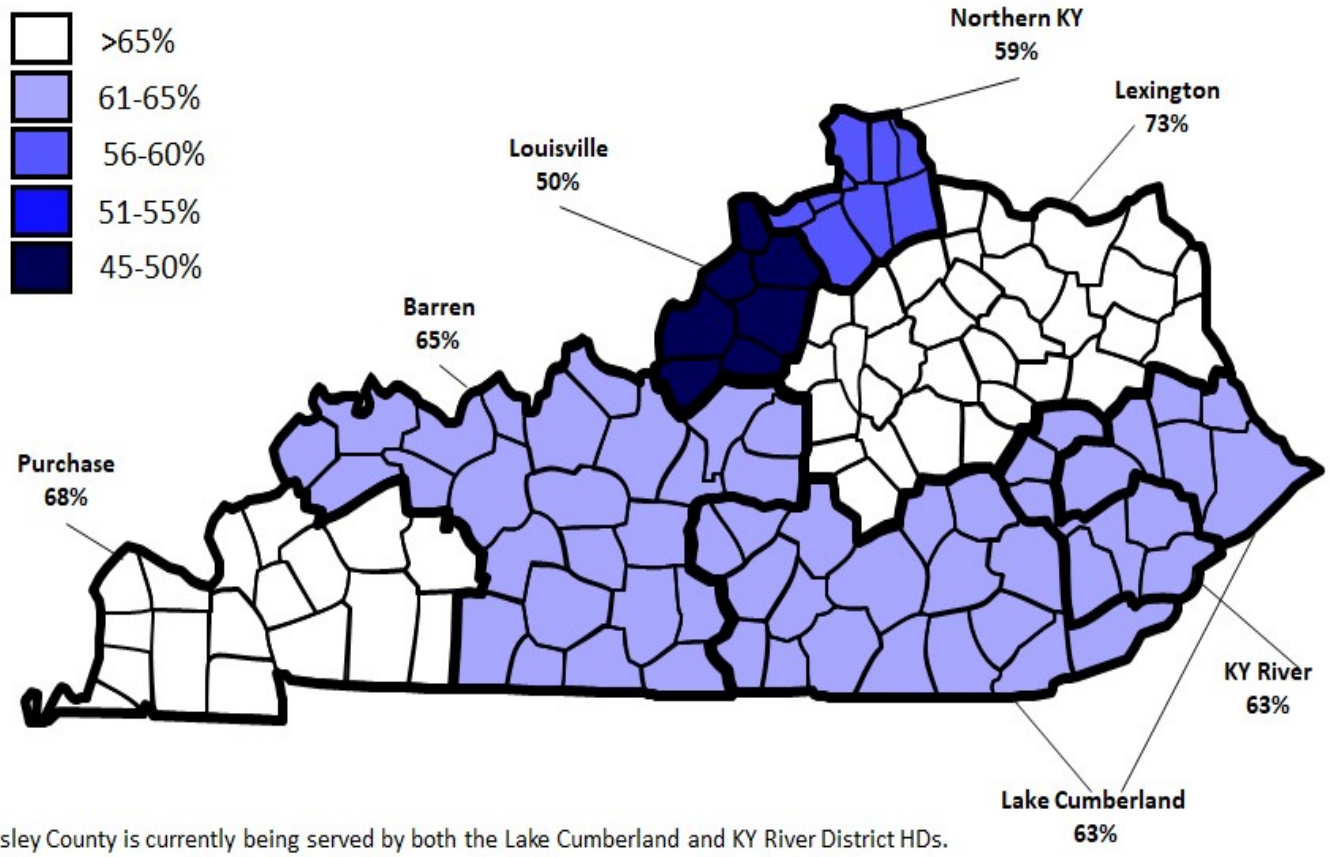
Linkage to care among newly diagnosed adult/adolescents in 2022 only. Therefore the total of new cases for linkage to care is different than all the other measures presented, and should not be directly compared.
MMSC = Male-to-male sexual contact.
IDU = Injection drug use.

Figure 6 shows the percentages of adult/adolescent Kentuckians engaged in the care continuum by mode of transmission. Persons with undetermined risk factor had the lowest percentages of linkage to care, receipt of care, retention in care and viral load suppression. Conversely, those who reported MMSC as category of transmission had the highest rates of linkage to care (88%), while MMSC/IDU category had the highest percentage of receipt of HIV care (75%).

Heterosexual and MMSC/IDU had the highest level of retention in care (50% each). Viral load suppression was highest among MMSC, MMSC/IDU and heterosexual categories at 63%.

Kentucky Viral Suppression Attainment by Care Coordinator Region, 2022

Figure 7. Percentage of Kentuckians Living with HIV as of December 31, 2022 Who were Virally Suppressed in 2022 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. Care coordinator 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 Care Coordinator region had the highest percentage of persons achieving viral suppression at 73%, followed by Purchase Care Coordinator region at 68%.

In Barren 65 out of every 100 PWH were virally suppressed during 2022. Sixty-three percent (63%) of the Kentuckians living with HIV in the Lake Cumberland and Kentucky River regions achieved viral suppression. In Northern Kentucky 59% were virally suppressed. Louisville region had the lowest percentage of viral suppression in the state at 50%.

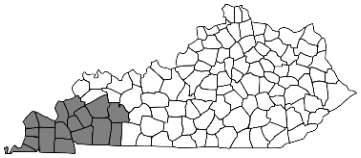
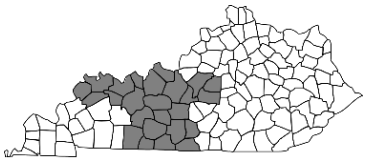
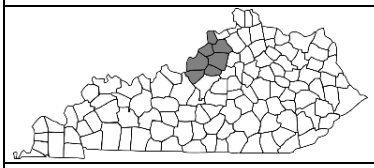
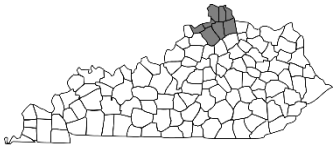
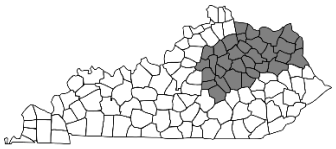
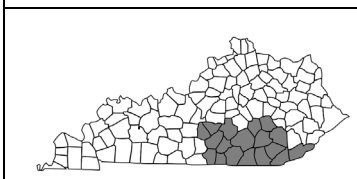
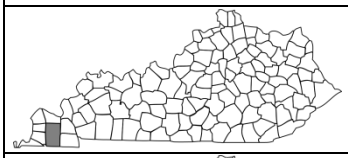
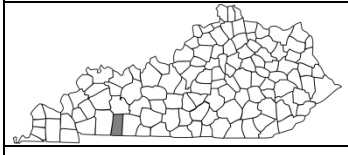
Limitations:

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 Kentucky Department for Public Health's HIV/AIDS Surveillance Program were not included.

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 Carlisle 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. 4th 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	