Epidemiology of HIV in Marion County: 2023

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Epidemiologist

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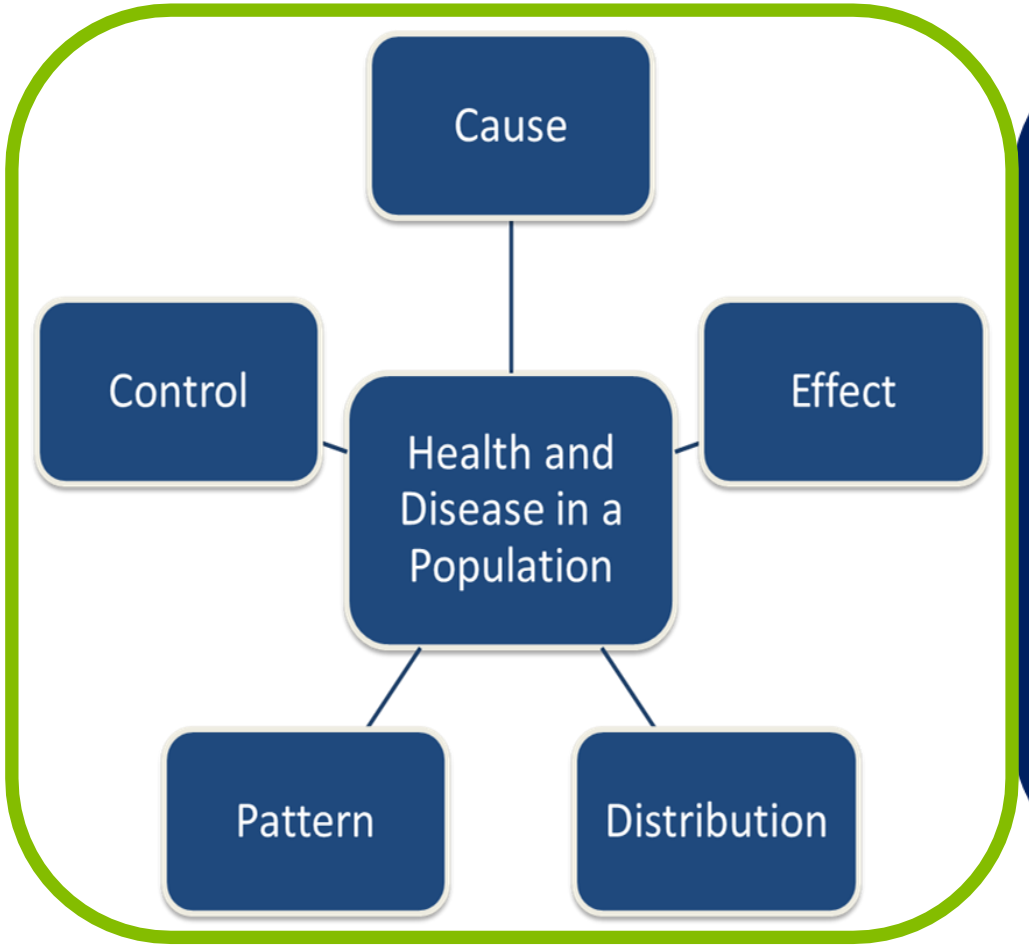
Epidemiology

Epidemiology



- The study of the distribution and determinants of health-related states or events in specified populations and the application of this study to the control of health problems

Epidemiology - Terminology

- Incidence
  - The number of new HIV cases in a defined population during a specified year
- Prevalence
  - The estimated number of persons living with HIV/AIDS, including persons diagnosed and undiagnosed, at the end of a specified year
- Confidence Interval (CI)
  - A range of values for a measure that is believed to contain the true value at a specified level of certainty (e.g., 95%)
- Mortality
  - The total number of persons who have died from HIV
- Rate
  - A measure of the frequency of an event compared with the number of persons at risk for the event
- Rate Ratio
  - Comparison of rates between two or more groups

Gender Identity

- Male
  - Persons assigned “male” sex at birth and current gender identity is “male”.
- Female
  - Persons assigned “female” sex at birth and current gender identity is “female”.
- Transgender woman
  - Persons assigned “male” sex at birth and current gender identity is “female”.
- Transgender man
  - Persons assigned “female” sex at birth and current gender identity is “male”.

Exposure Types

- Male-to-male sexual contact (MSM)
  - Includes individuals assigned male sex at birth who have had sexual contact with other males, or who have had sexual contact with both males and females (i.e. bisexual contact)
- Injection drug use (IDU)
  - Includes persons who injected nonprescription drugs or who injected prescription drugs for nonmedical purposes
- MSM & IDU
  - Includes individuals assigned male sex at birth who have had sexual contact with other males, or who have had sexual contact with both males and females (i.e. bisexual contact) and injected nonprescription drugs or injected prescription drugs for nonmedical purposes
- Heterosexual Contact
  - Includes persons who have ever had heterosexual contact with a person known to have, or with a risk factor for, HIV
- Perinatal
  - Includes persons who acquired HIV through mother-to-child transmission
- Other
  - Includes persons with other risk factors (e.g., blood transfusion, hemophilia) or whose risk factor was not reported or not identified

Marion County Geography and Demographics

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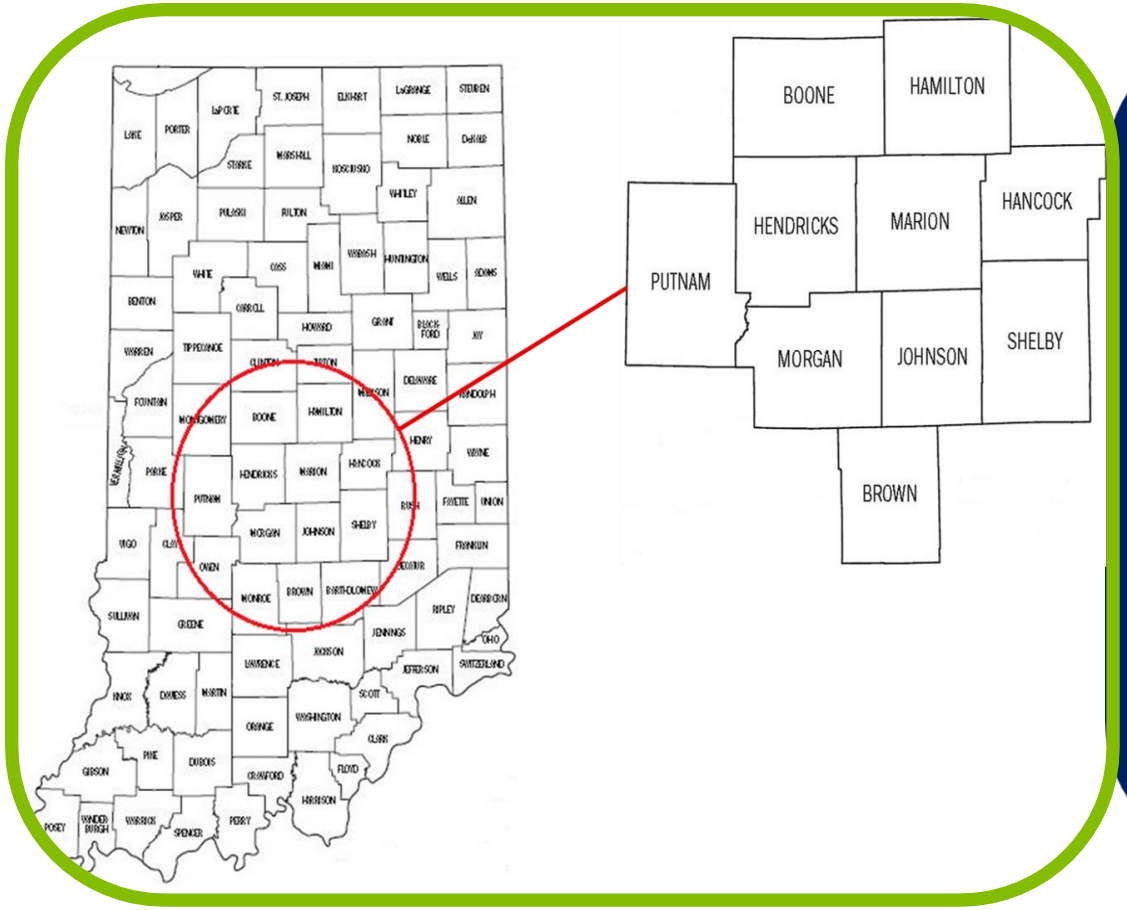
Marion County Location & Population



- As of July 1, 2023, Marion County had an estimated population of approximately 977,008
- This is an 8% increase since 2010 and a 1.2% increase since 2020

Data Source: US Census Bureau

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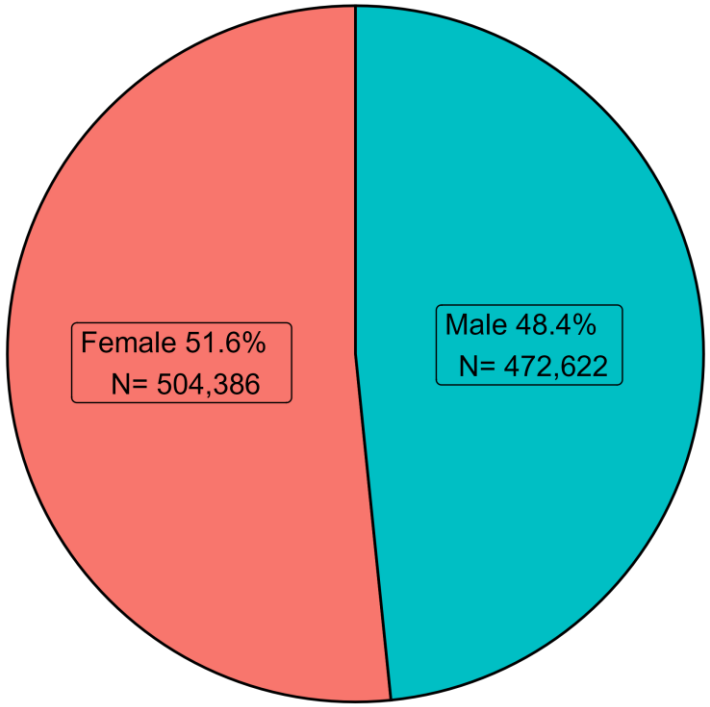
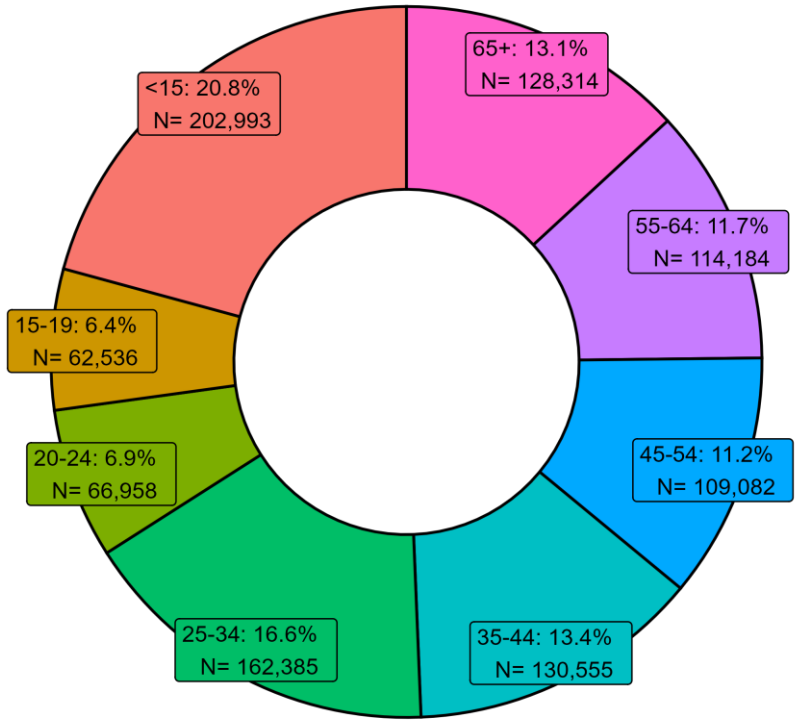
Marion County Demographics

Gender of All Marion County Residents, 2022



Age Groups of All Marion County Residents, 2022



Data Source: US Census Bureau

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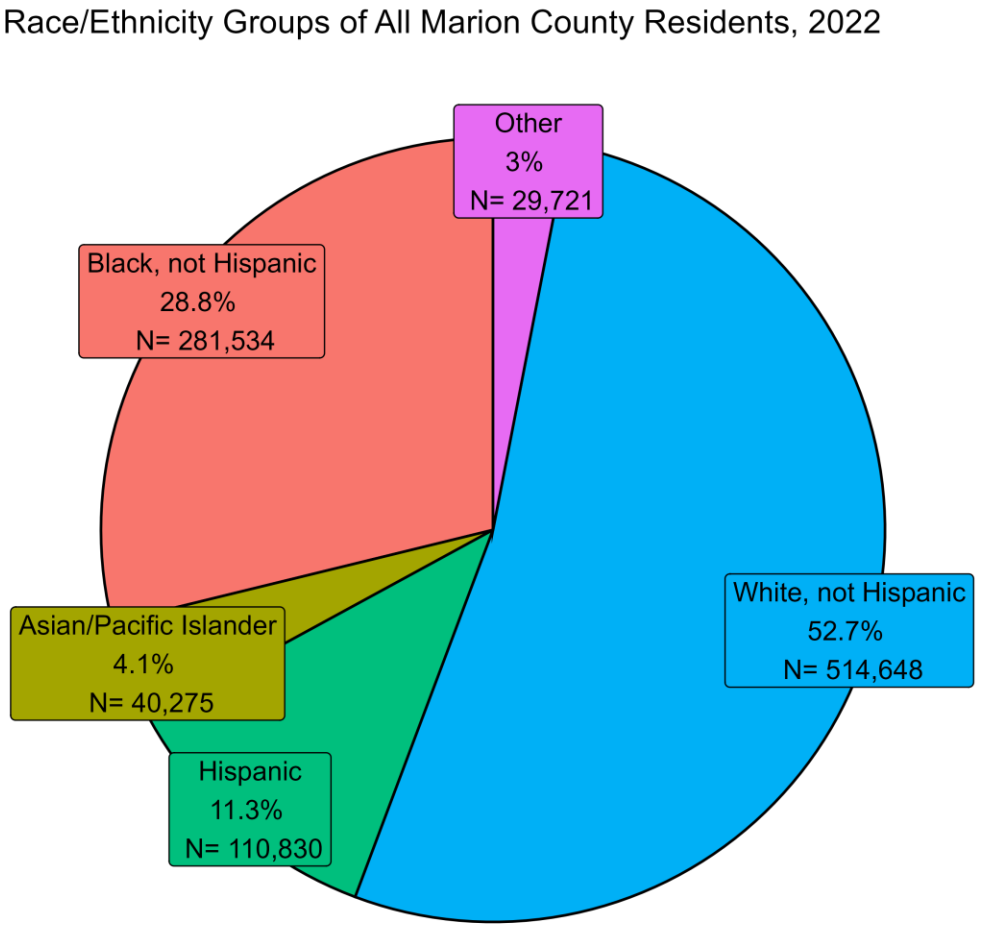
Marion County Demographics



Data Source: US Census Bureau

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HIV/AIDS Incidence

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HIV/AIDS Incidence, 2023

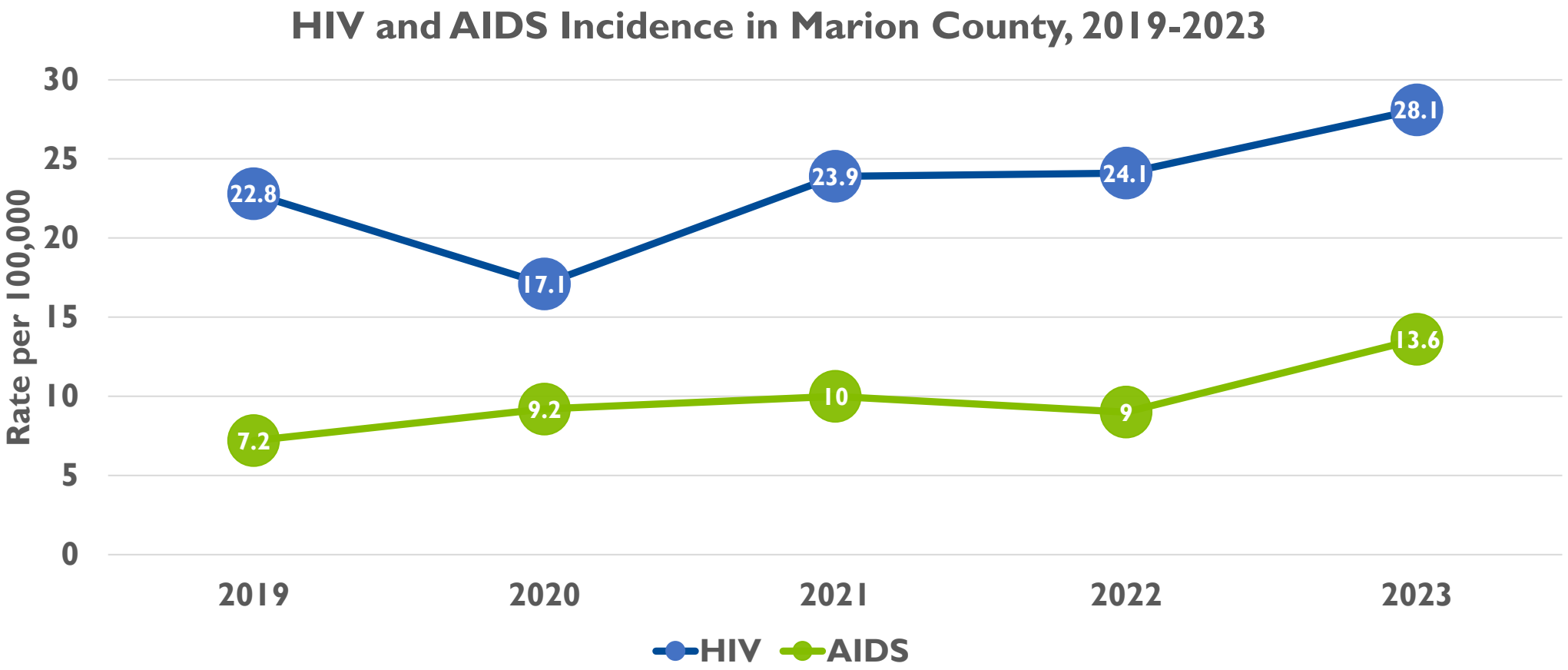
New Diagnoses	No.	Rate [95% CI*]	2022 Rate [95% CI*]	U.S. Rate (2021)
HIV†	273	28.1 [24.9-31.6]	24 [21-27.3]	13
AIDS	133	13.6 [11.4-16.2]	9 [7.2-11.1]	

*95% Confidence Interval
†New HIV dx and HIV at AIDS dx

In 2023, HIV incidence increased by 16.2% and AIDS incidence increased by 51.1% compared to 2022 in Marion County

Data Source: DR5730, eHARS

HIV/AIDS Incidence, 2019-2023



Data Source: DR5730, eHARS

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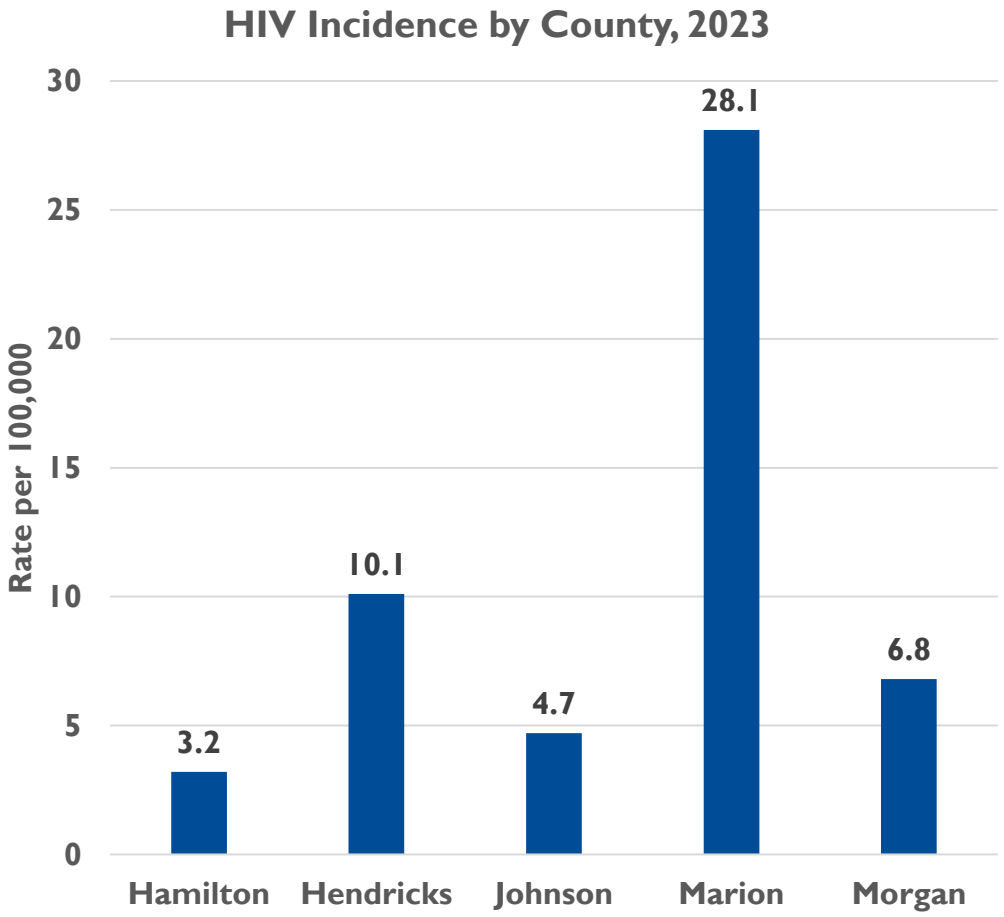
HIV Incidence by County

County	No.	% of HIV in TGA	Rate [95% CI*]	RR [95% CI*]: to Hamilton
Marion	273	83.5%	28.1 [24.9-31.6]	8.7 [4.9-15.5]
Hendricks	19	5.8%	10.1 [6.1-15.8]	3.1 [1.5-6.5]
Hamilton	12	3.7%	3.2 [1.7-5.6]	1.0
Johnson	8	2.5%	4.7 [2-9.3]	1.5 [0.6-3.6]
Morgan	5	1.5%	6.8 [2.2-15.9]	2.1 [0.7-6.0]
Boone	<5	-	-	-
Shelby	<5	-	-	-
Hancock	<5	-	-	-
Putnam	<5	-	-	-
Brown	0	0	-	-

*95% Confidence Interval
RR = Risk Ratio

Data Source: DR5730, eHARS

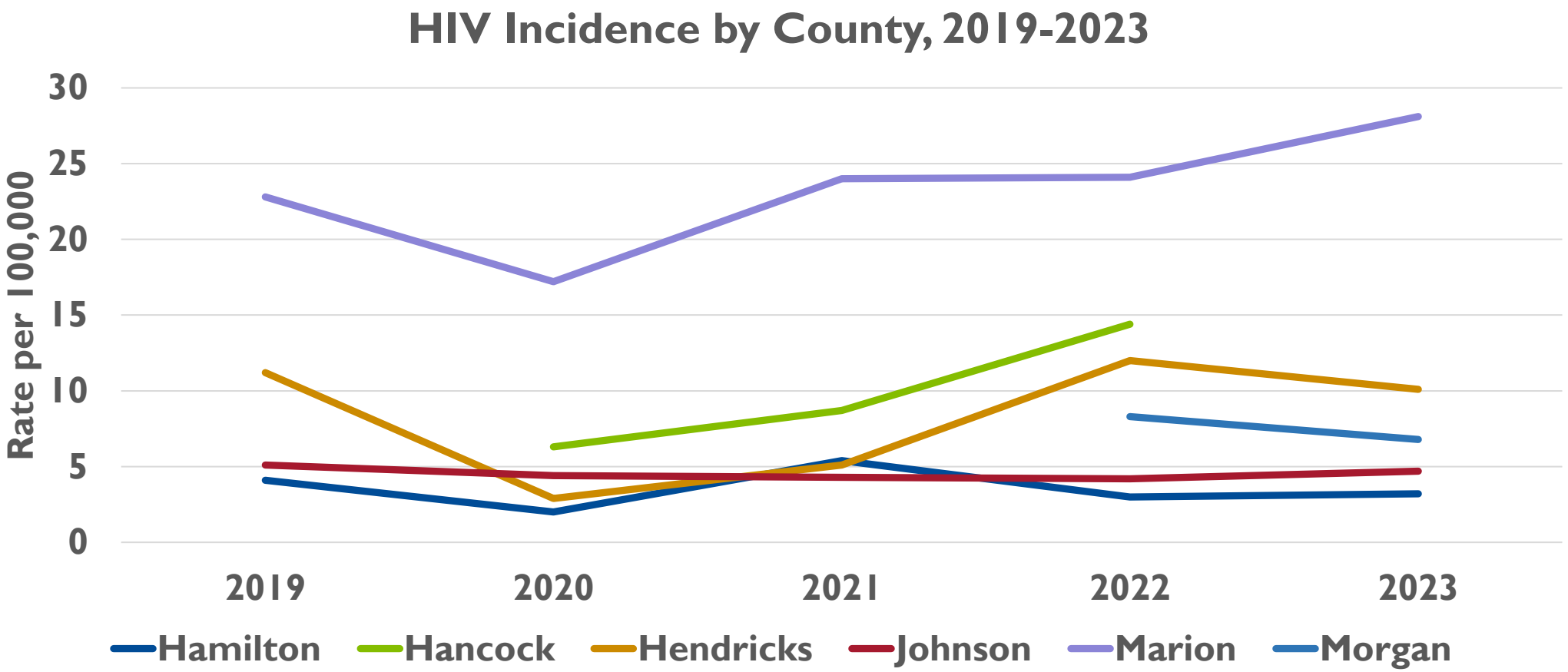
HIV Incidence by County



- In 2023, among the TGA counties, HIV incidence was highest in Marion County (28.1 per 100,000 residents) and lowest in Hamilton County (3.2 per 100,000)
- The incidence rate in Marion County was 8.7 times higher than the rate in Hamilton County

Data Source: DR5685, eHARS

HIV Incidence by County, 2019-2023



Data Source: DR5685, eHARS

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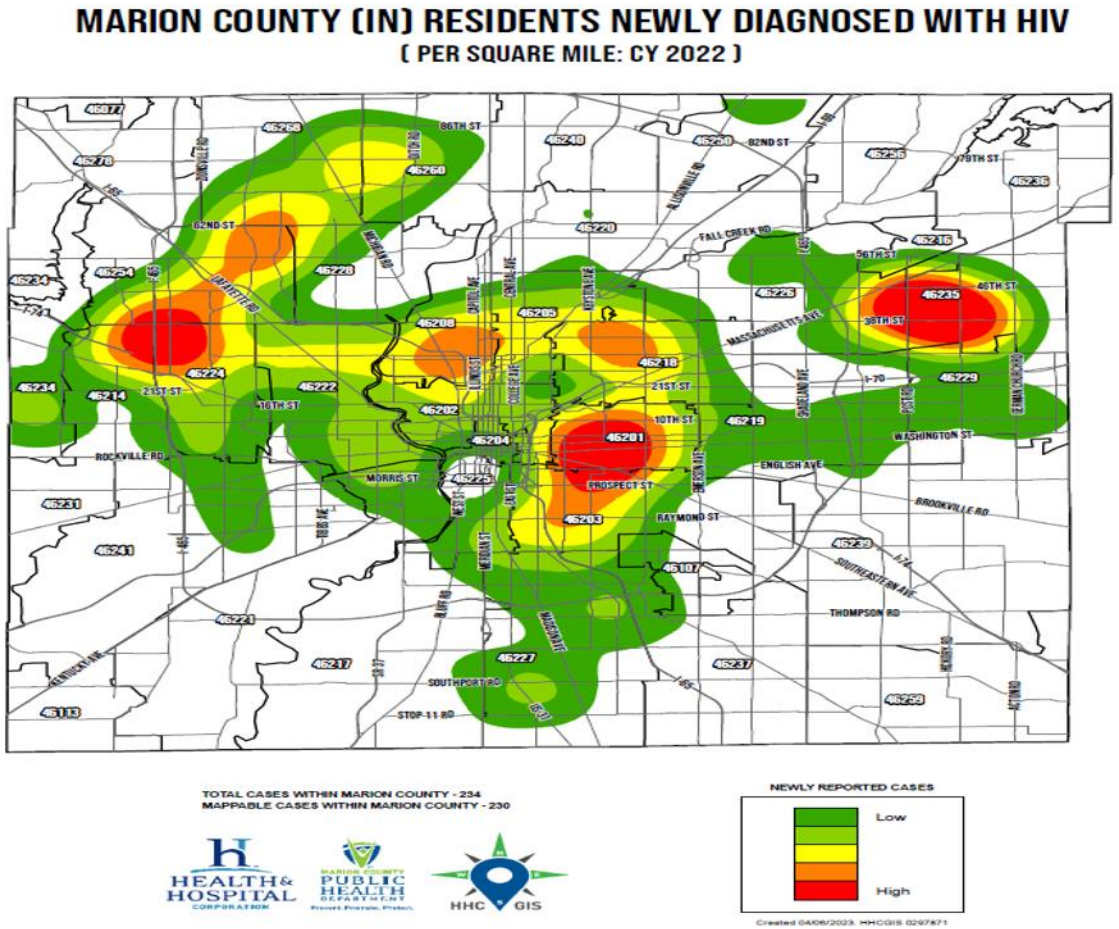
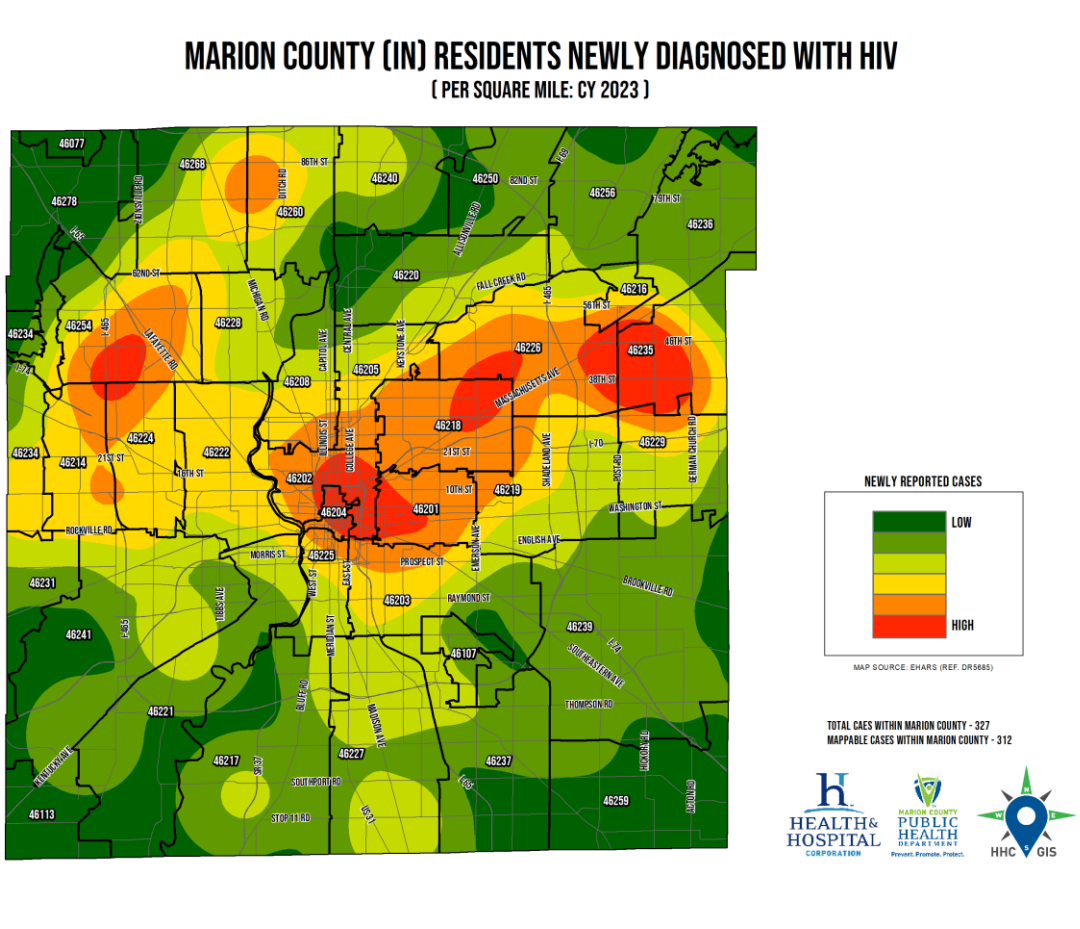
Marion County Residents Newly Diagnosed with HIV, 2022 and 2023





Data Source: DR5685, eHARS

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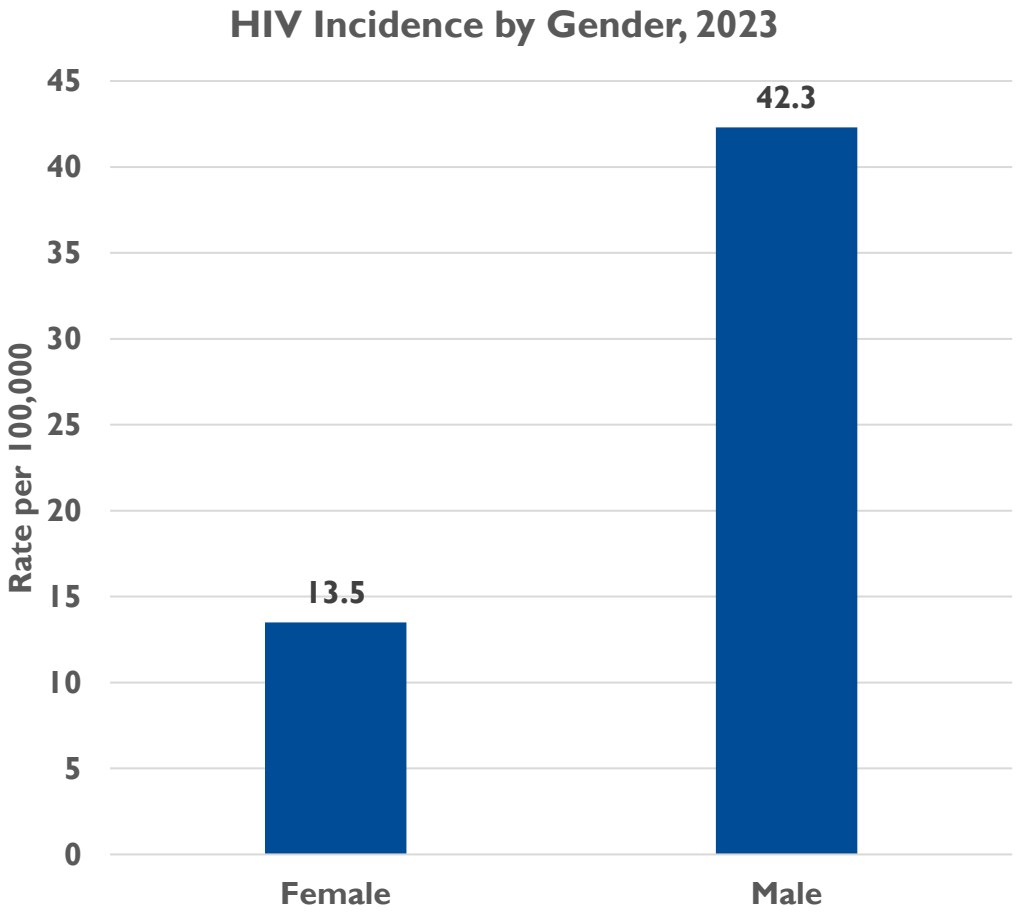
HIV Incidence by Gender

Gender	No.	% of HIV in Marion County	Rate [95* CI]	RR [95% CI*]: to Female
Female	68	24.9%	13.5 [10.5-17.1]	1.0
Male	198	72.5%	42.3 [36.6-48.6]	3.1 [2.4-4.1]
Transgender	7	2.6%	-	-

*95% Confidence Interval
RR = Risk Ratio

Data Source: DR5730, eHARS

HIV Incidence by Gender



- HIV incidence rate was 3.1 times higher among Males compared to Females

Data Source: DR5730, eHARS

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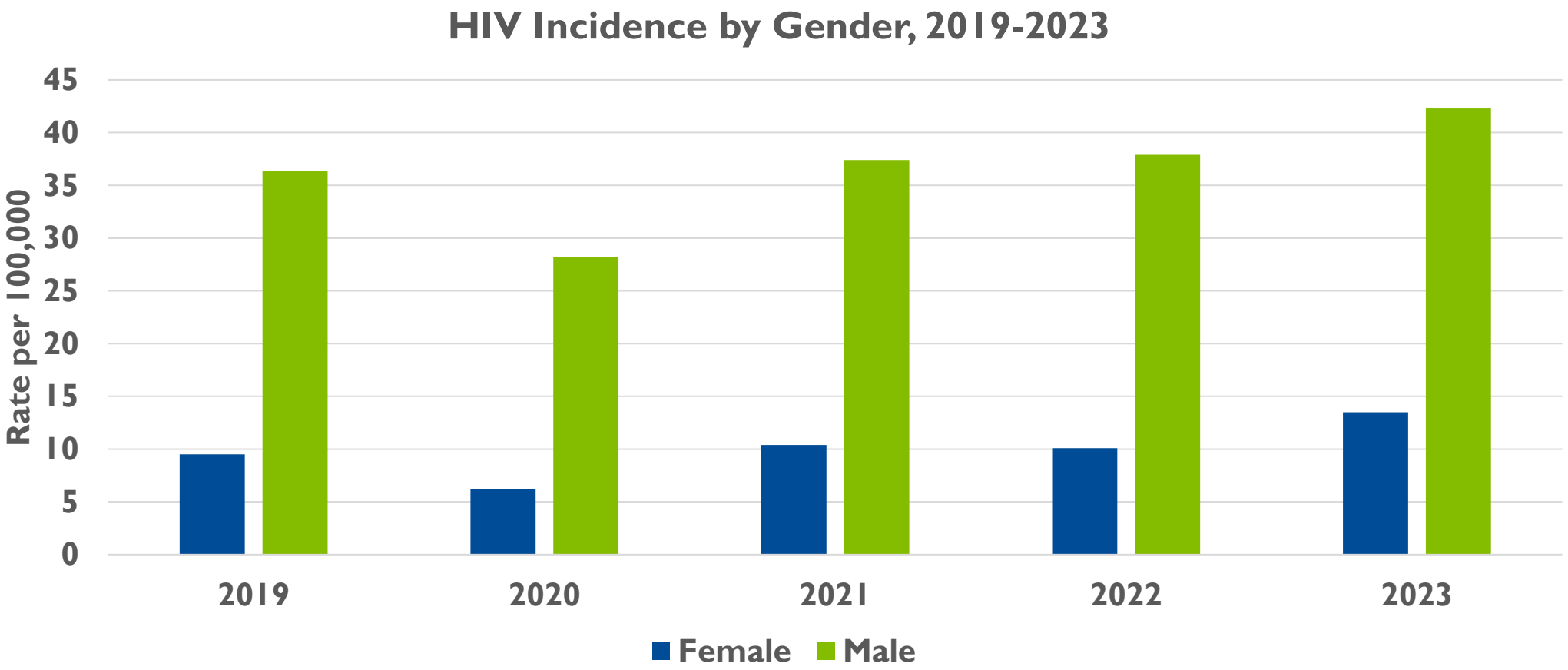
HIV Incidence by Gender, 2019-2023



Data Source: DR5730, eHARS

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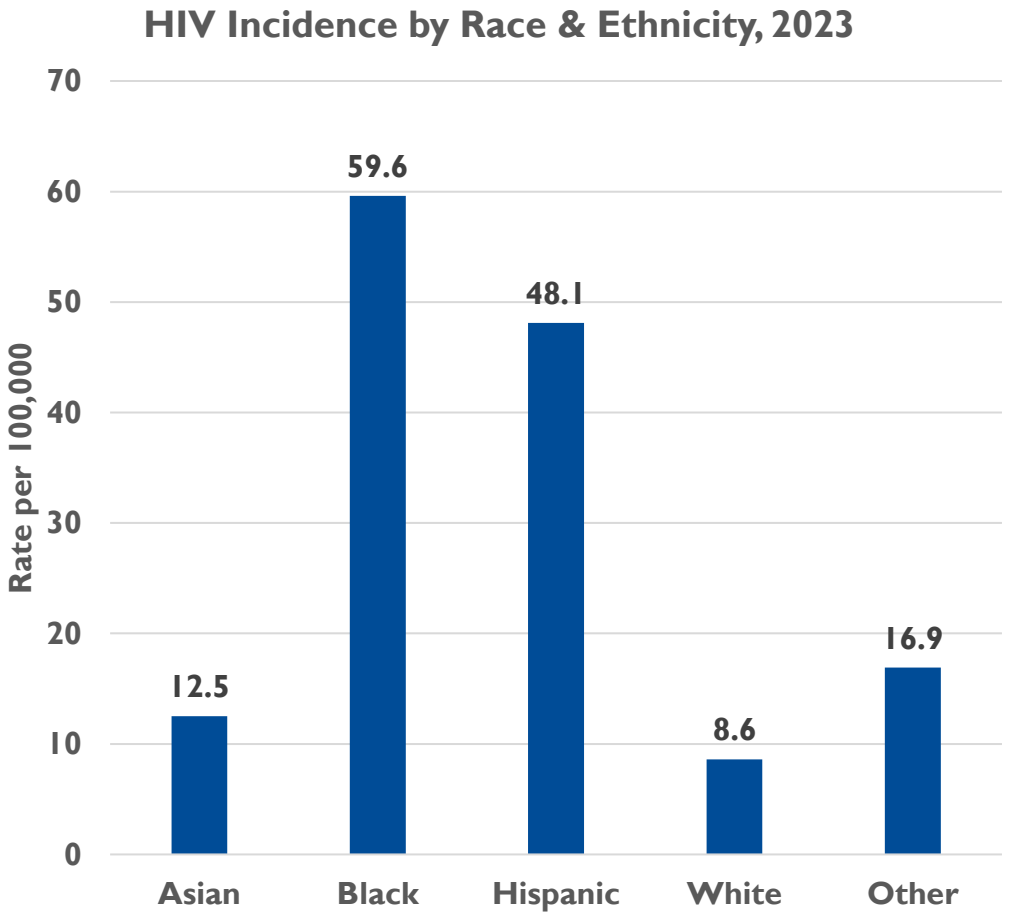
HIV Incidence by Race/Ethnicity

Race/Ethnicity	No.	% of HIV in Marion County	Rate [95% CI*]	RR [95% CI*]: to White
Asian/Pacific Islander	5	1.8%	12.5 [4-29.1]	1.5 [0.6-3.7]
Black	166	60.8%	59.6 [50.8-69.3]	6.9 [5.0-9.7]
Hispanic	53	19.4%	48.1 [36-62.9]	5.6 [3.8-8.4]
White	44	16.1%	8.6 [6.2-11.5]	1.0
Other	5	1.8%	16.9 [5.5-39.5]	2.0 [0.8-5.0]

*95% Confidence Interval
RR = Risk Ration

Data Source: DR5730, eHARS

HIV Incidence by Race/Ethnicity



- HIV incidence was highest among Black, non-Hispanic residents with a rate 6.9 times that of White, non-Hispanic residents

Data Source: DR5730, eHARS

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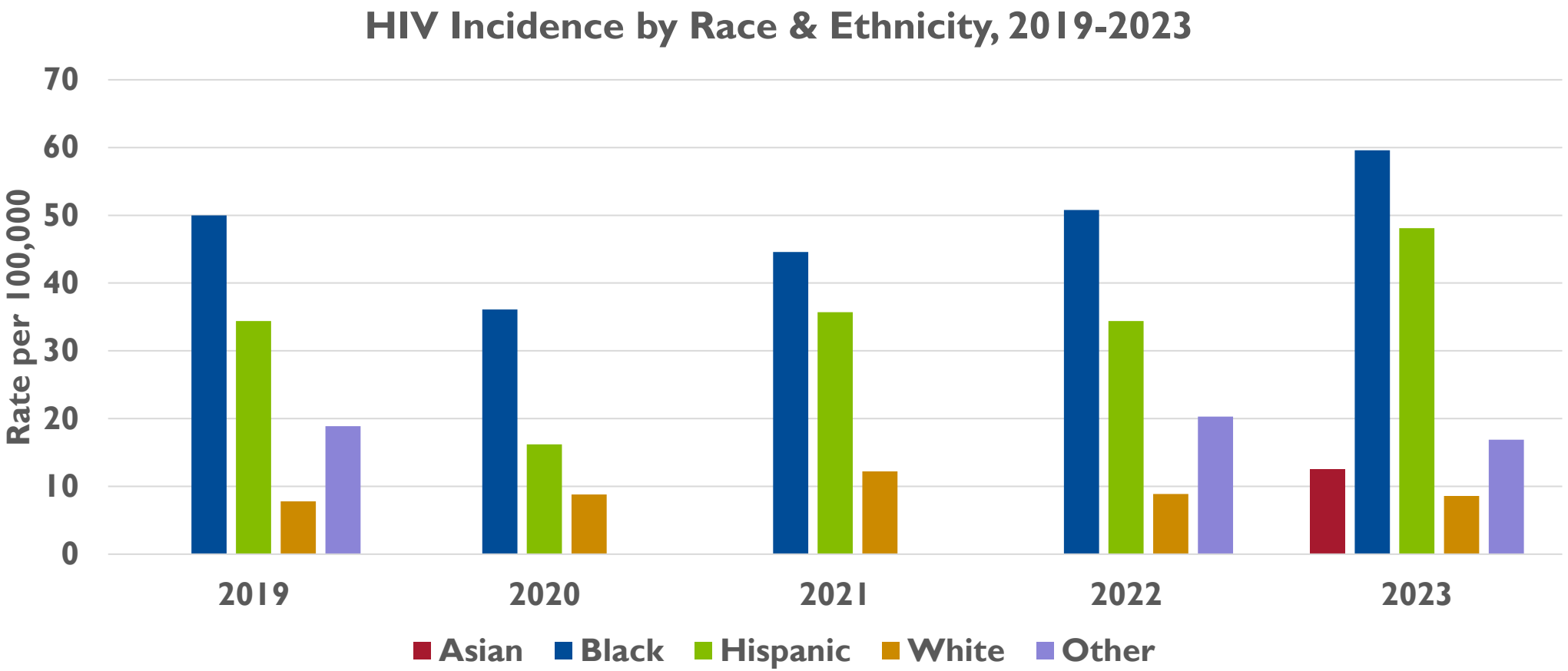
HIV Incidence by Race/Ethnicity, 2019-2023



Data Source: DR5730, eHARS

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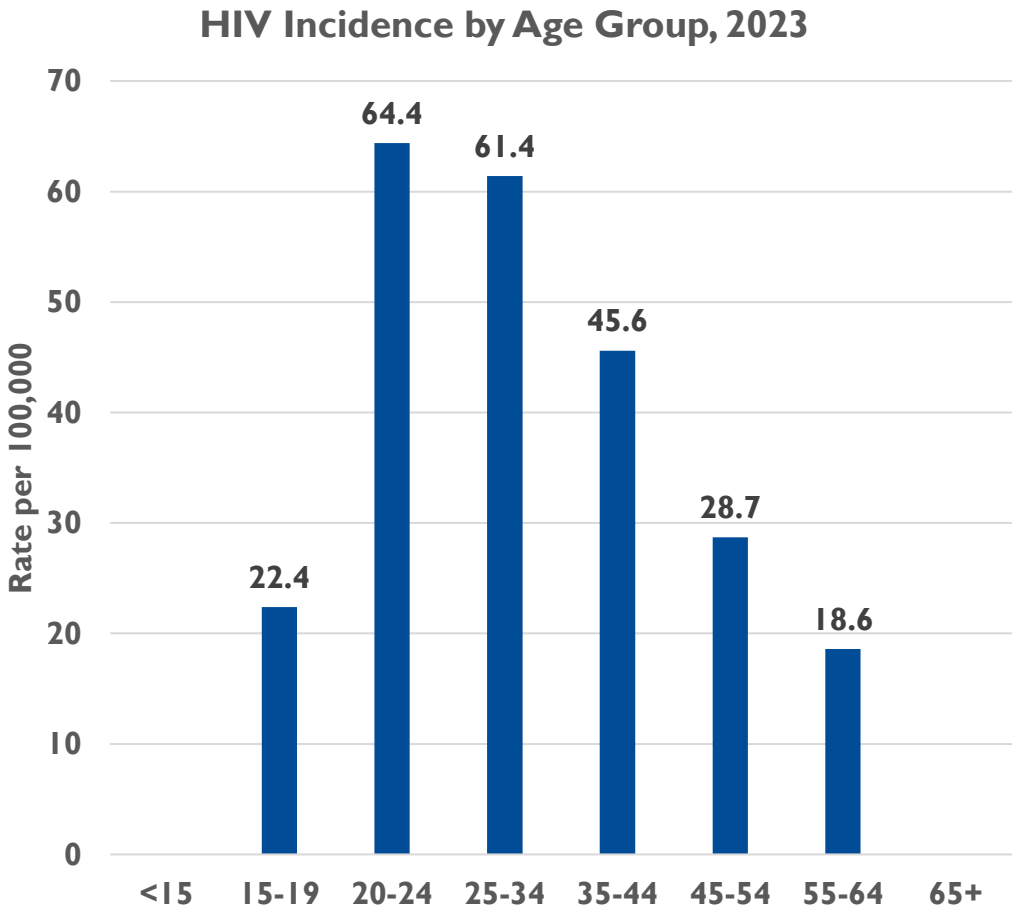
HIV Incidence by Age Group

Age (Yrs)	No.	% of HIV in Marion County	Rate [95% CI*]
<15	<5	-	-
15-19	14	5.1%	22.4 [12.2-37.6]
20-24	43	15.8%	64.4 [46.6-86.7]
25-34	99	36.3%	61.4 [49.9-74.7]
35-44	59	21.6%	45.6 [34.7-58.9]
45-54	31	11.4%	28.7 [19.5-40.8]
55-64	21	7.7%	18.6 [11.5-28.4]
65+	<5	-	-

*95% Confidence Interval

Data Source: DR5730, eHARS

HIV Incidence by Age Group



- 74% of new HIV cases occurred in people between the ages of 20-44
- People between the ages of 20-24 had the highest incidence rate, followed by 25-34-year-olds and 35-44-year-olds

Data Source: DR5730, eHARS

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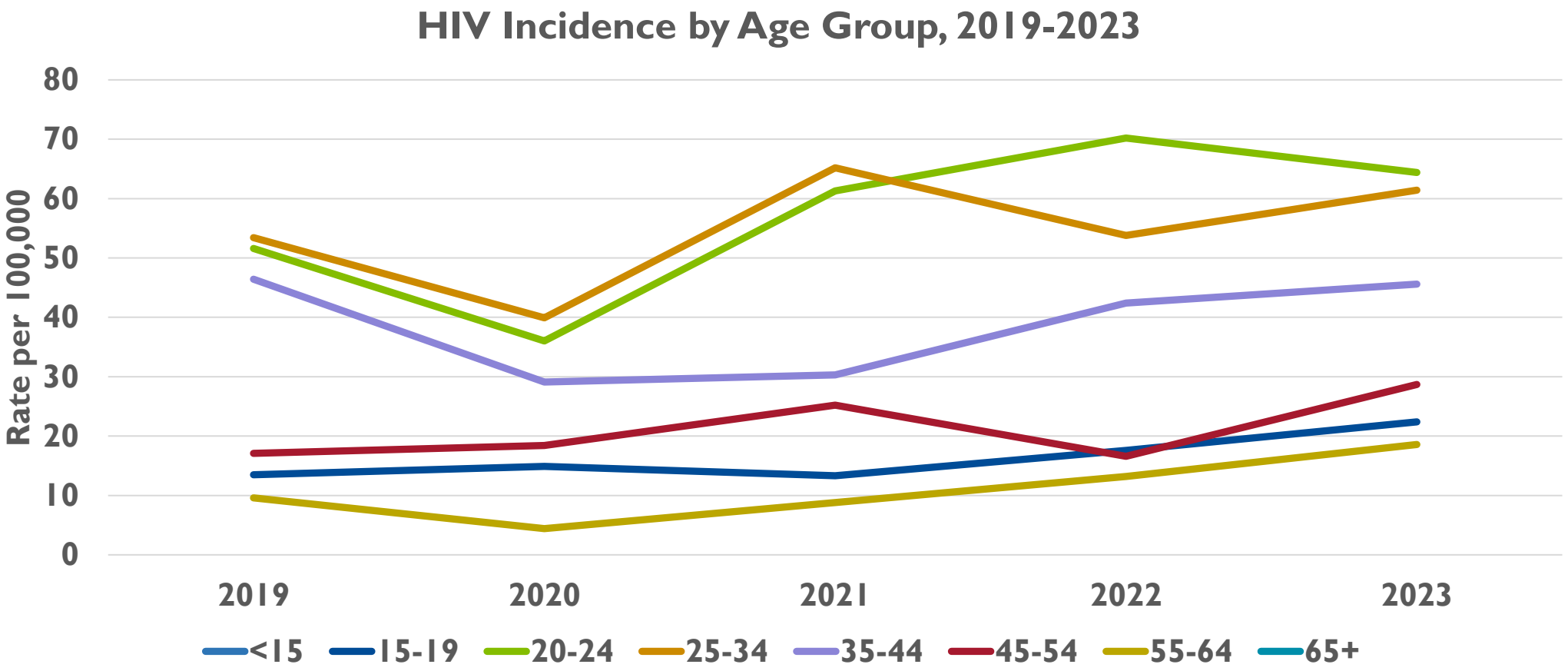
HIV Incidence by Age Group, 2019-2023



Data Source: DR5730, eHARS

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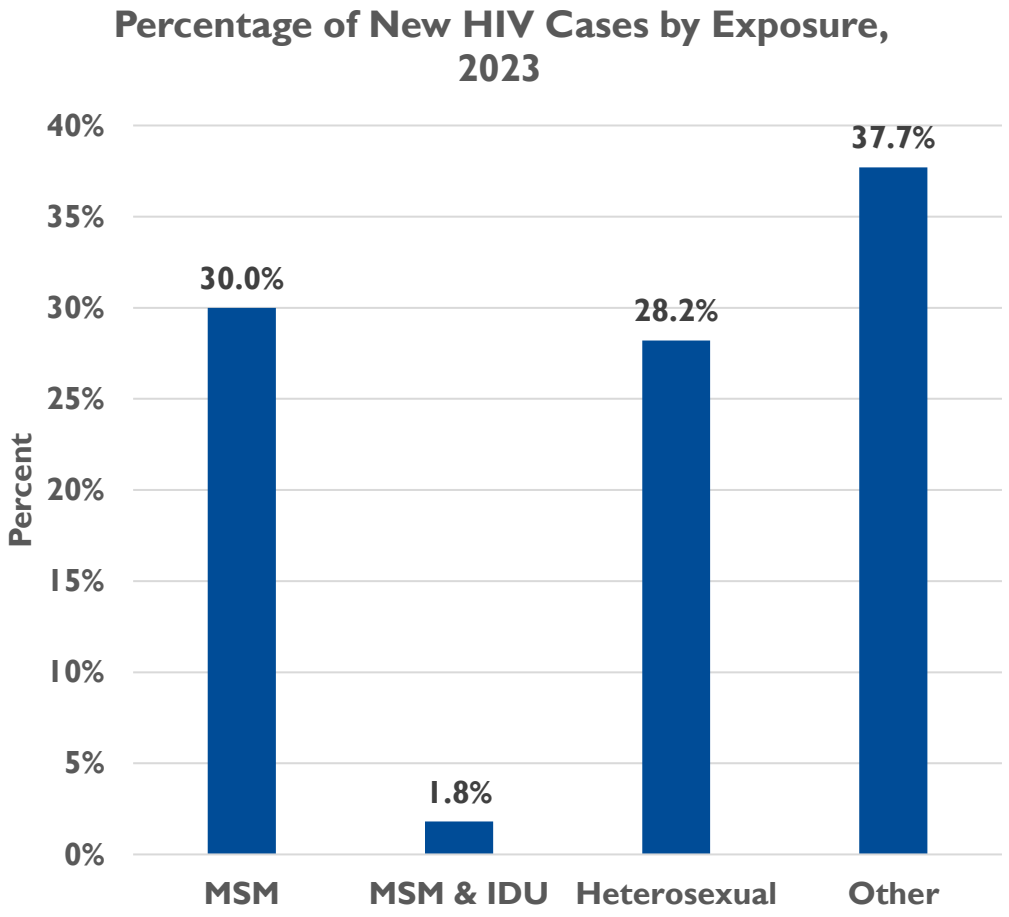
HIV Incidence by Exposure Category

Exposure	No.	% of HIV in Marion County
MSM	82	30.0%
IDU	<5	-
MSM & IDU	5	1.8%
Heterosexual Contact	77	28.2%
Perinatal	<5	-
Other*	103	37.7%

*Includes Other, No Risk Reported, and No Risk Identified
MSM = Male-to-male sexual contact
IDU = Injection drug use

Data Source: DR5730, eHARS

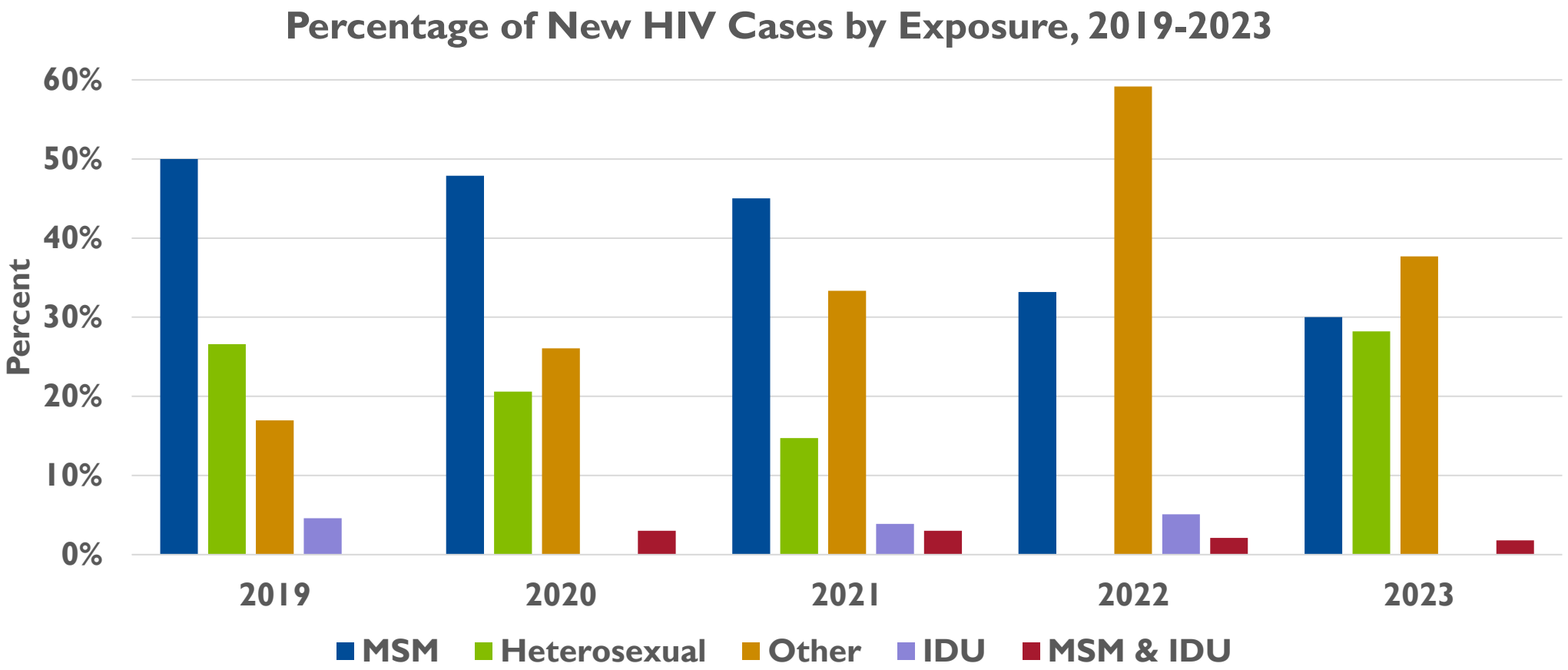
HIV Incidence by Exposure Category



- 30% of new cases had HIV attributed to male-to-male sexual contact, 28.2% to heterosexual contact, and 1.8% to MSM & IDU

Data Source: DR5730, eHARS

Percentage of New HIV Cases by Exposure Type, 2019-2023



Data Source: DR5730, eHARS

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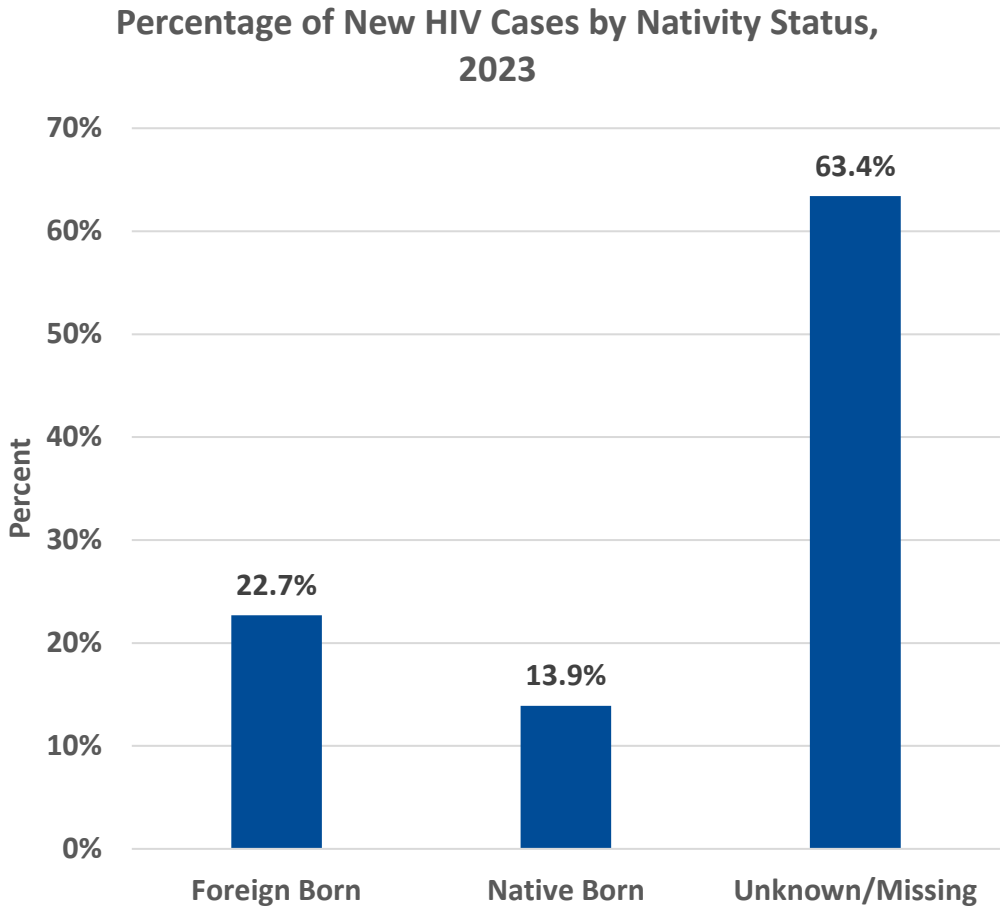
HIV Incidence by U.S. Nativity Status

Nativity Status	No.	% of HIV in Marion County	Rate [95% CI*]	RR [95% CI*]" to Native Born
Foreign Born**	62	22.7%	62.8 [48.1-80.5]	14.4 [9.6-21.6]
Native Born	38	13.9%	4.3 [3.1-6]	1.0
Unknown/Missing	173	63.4%	-	-

*95% Confidence Interval
**Marion County foreign born population denominator based on census tract data
RR = Risk Ratio

Data Source: DR5730, eHARS

HIV Incidence by U.S. Nativity Status



- HIV incidence was highest among the foreign-born population with a rate of 62.8 per 100,000 people. Among the native-born population, the rate is 4.3 per 100,000 people
- However, 63.4% of new HIV cases had a nativity status of unknown or missing

Data Source: DR5730, eHARS

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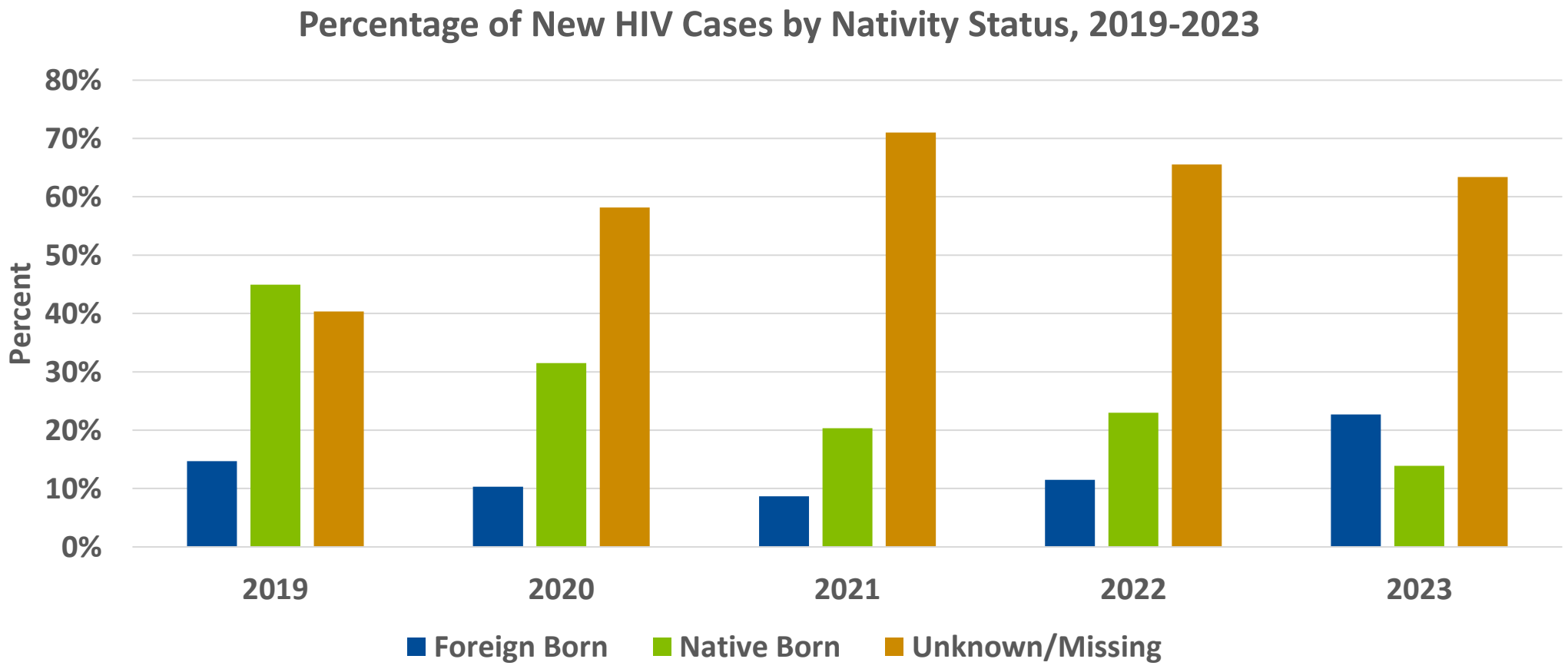
Percentage of New HIV Cases by U.S. Nativity Status, 2019-2023



Data Source: DR5730, eHARS

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HIV Deaths

Deaths of PLWH/A (Regardless of Cause) in Marion County: 2023

	No.	Rate [95% CI*]	2022 Rate [95% CI*]
Mortality	<5	-	-
All Deaths (Regardless of Cause)	48	4.9 [3.6-6.5]	4.5 [3.3-6.0]

*95% Confidence Interval

Data Source: DR5730, eHARS

Deaths by Gender, Race, and Age Group

Demographic	No.	% in Marion County	Rate [95% CI*]
Gender			
Male	44	91.7%	9.3 [6.8-12.5]
Race			
Black	22	45.8%	7.8 [4.9-11.8]
White	19	39.6%	3.7 [2.2-5.8]
Age Group			
45-54	12	25.0%	11 [5.7-19.2]
55-64	15	31.3%	13.1 [7.4-21.7]
65+	14	29.2	10.9 [6-18.3]

*95% Confidence Interval

Deaths by Exposure Type & Nativity Status

	No.	% in Marion County	Rate [95% CI*]
Nativity Status			
Native Born	42	87.5%	4.8 [3.5-6.5]
Exposure Type			
MSM	29	60.4%	-
MSM & IDU	7	14.6%	-
Heterosexual Contact	8	16.7%	-

*95% Confidence Interval

HIV/AIDS Prevalence

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Prevalence of Diagnosed and Undiagnosed HIV/AIDS

HIV/AIDS Prevalence	**5663**
HIV Prevalence	3155
AIDS Prevalence	2508
Estimated Undiagnosed	847
Estimated Total PLWH/A	**6510**

In the United States, an estimated 13.3% of persons living with HIV are undiagnosed or unaware

Data Source: DR5730, eHARS

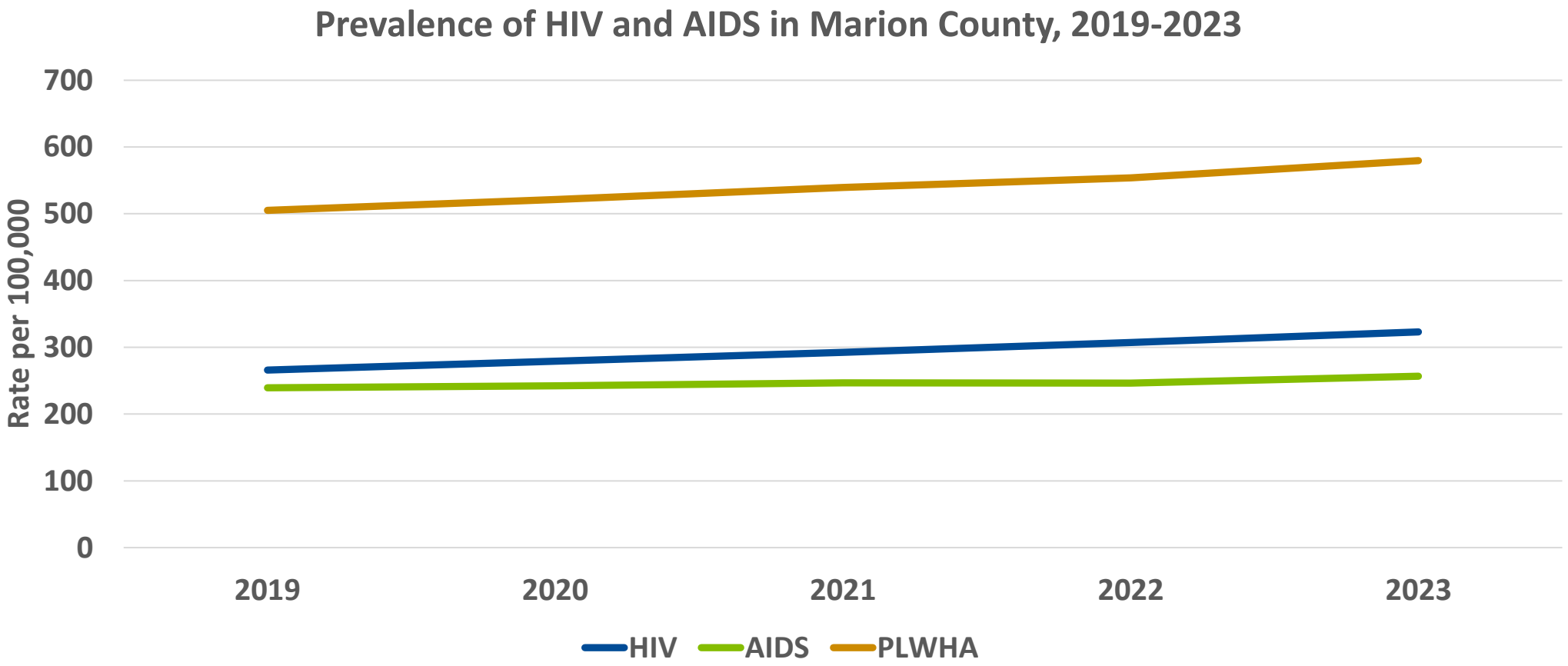
Prevalence of Diagnosed HIV/AIDS

Status	No.	Rate [95% CI*]	2022 Rate [95% CI*]	U.S. Rate (2021)
HIV	3155	322.9 [311.8-334.4]	307.3 [296.4-318.4]	384
AIDS	2508	256.7 [246.8-266.9]	246.4 [236.7-256.4]	
Total	5663	579.6 [564.7-594.8]	553.6 [539.1-568.5]	

*95% Confidence Interval

Data Source: DR5730, eHARS

PLWH/A in Marion County, 2019-2023



Data Source: DR5730, eHARS

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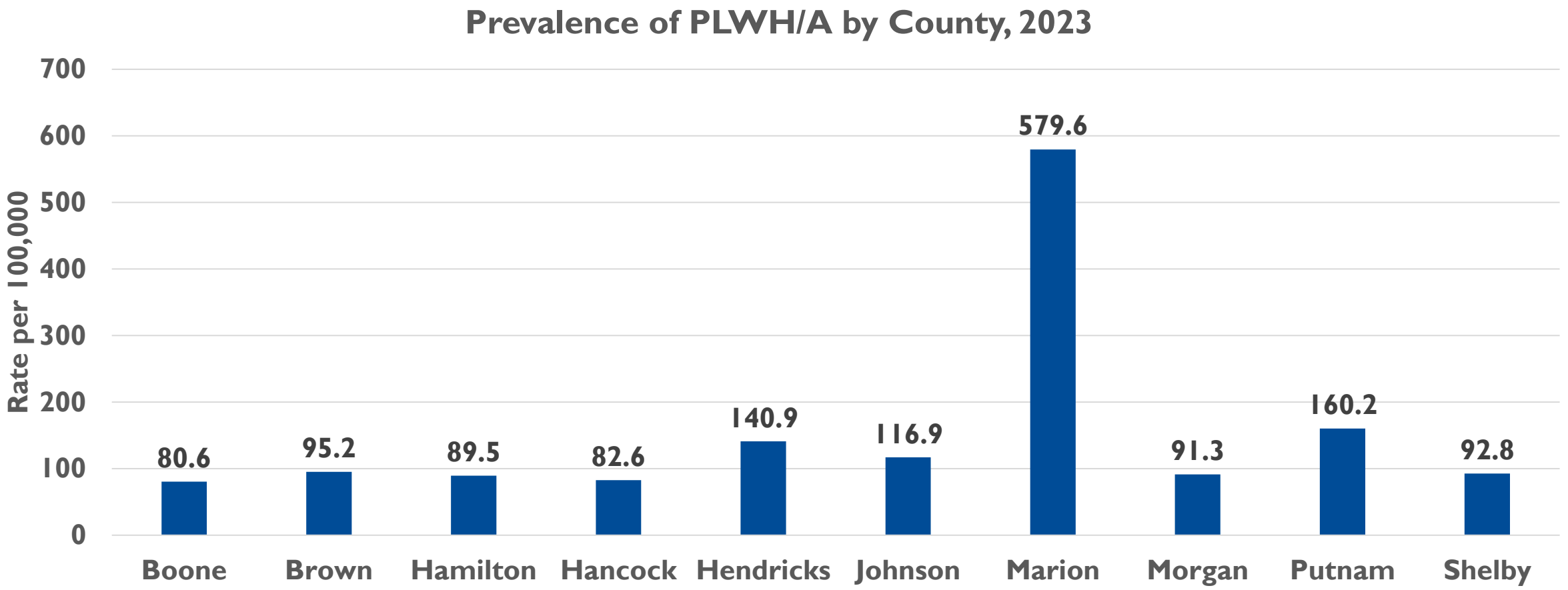
HIV/AIDS Prevalence by County

County	No.	% in TGA	Rate [95% CI*]	RR [95% CI*]: to Boone
Marion	5663	83.6%	579.6 [564.7-594.8]	7.2 [5.6-9.2]
Hamilton	333	4.9%	89.5 [80.1-99.6]	1.1 [0.8-1.5]
Hendricks	265	3.9%	140.9 [124.4-158.9]	1.7 [1.3-2.3]
Johnson	198	2.9%	116.9 [101.2-134.3]	1.4 [1.1-1.9]
Hancock	70	1.0%	82.6 [64.4-104.3]	1.0 [0.7-1.4]
Morgan	67	1.0%	91.3 [70.8-116]	1.1 [0.8-1.6]
Boone	62	0.9%	80.6 [61.8-103.3]	1.0
Putnam	59	0.9%	160.2 [122-206.6]	2.0 [1.4-2.8]
Shelby	42	0.6%	92.8 [66.9-125.5]	1.2 [0.8-1.7]
Brown	15	0.2%	95.2 [53.3-157]	1.2 [0.7-2.1]

*95% Confidence Interval
RR = Risk Ratio

Data Source: DR5685, eHARS

HIV/AIDS Prevalence by County



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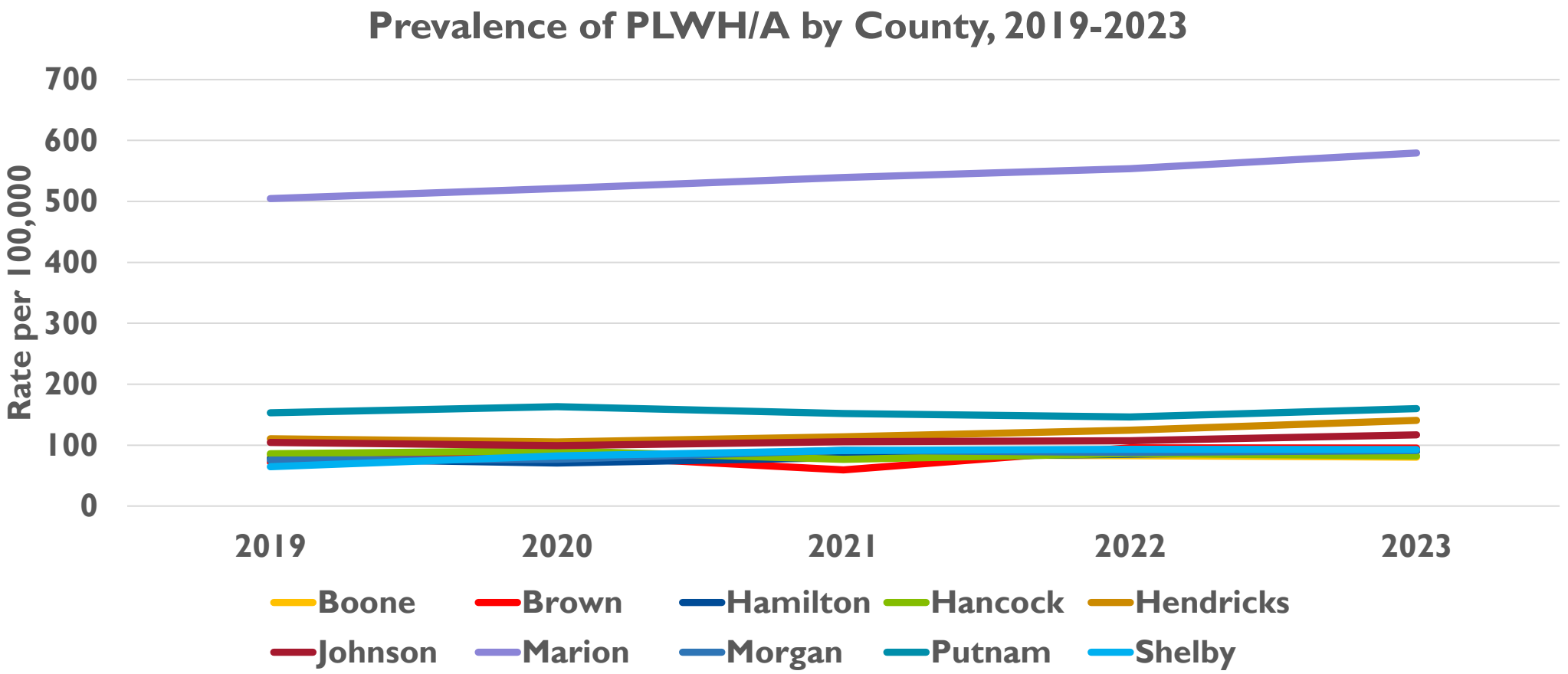
HIV/AIDS Prevalence by County, 2019-2023



Data Source: DR5685, eHARS

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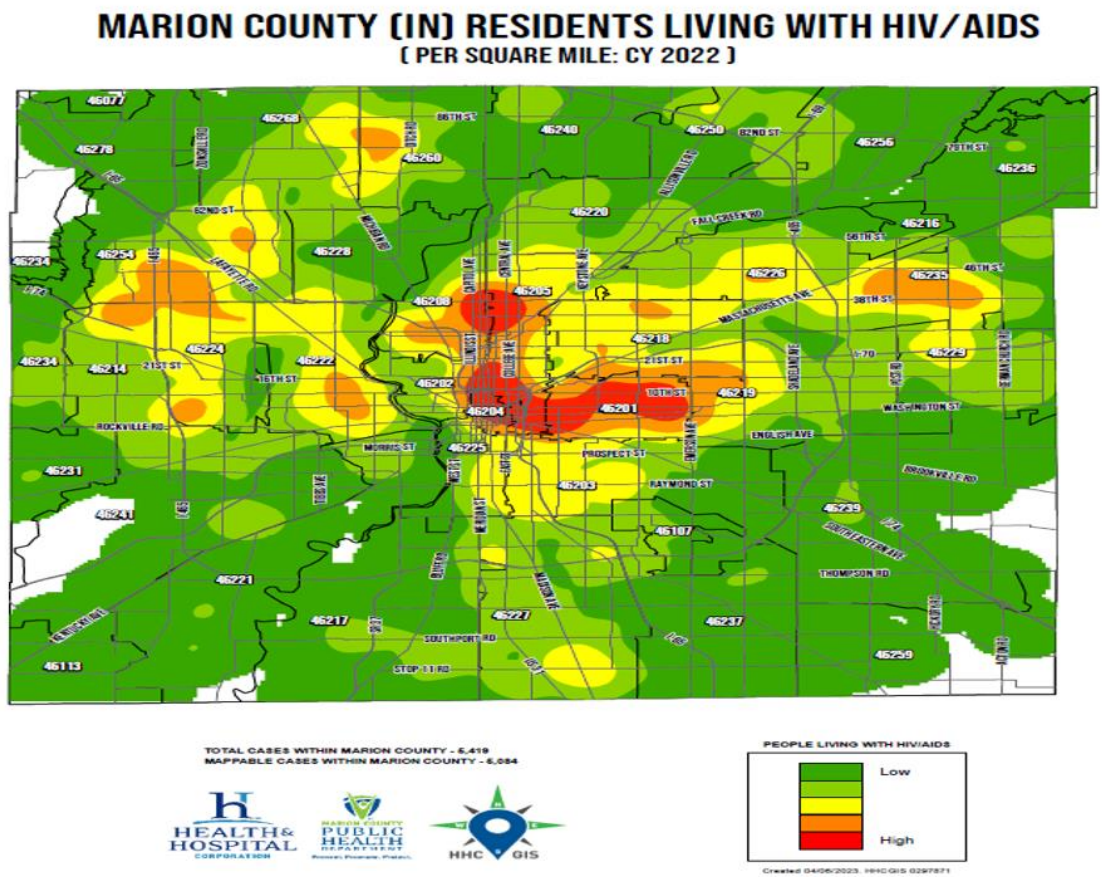
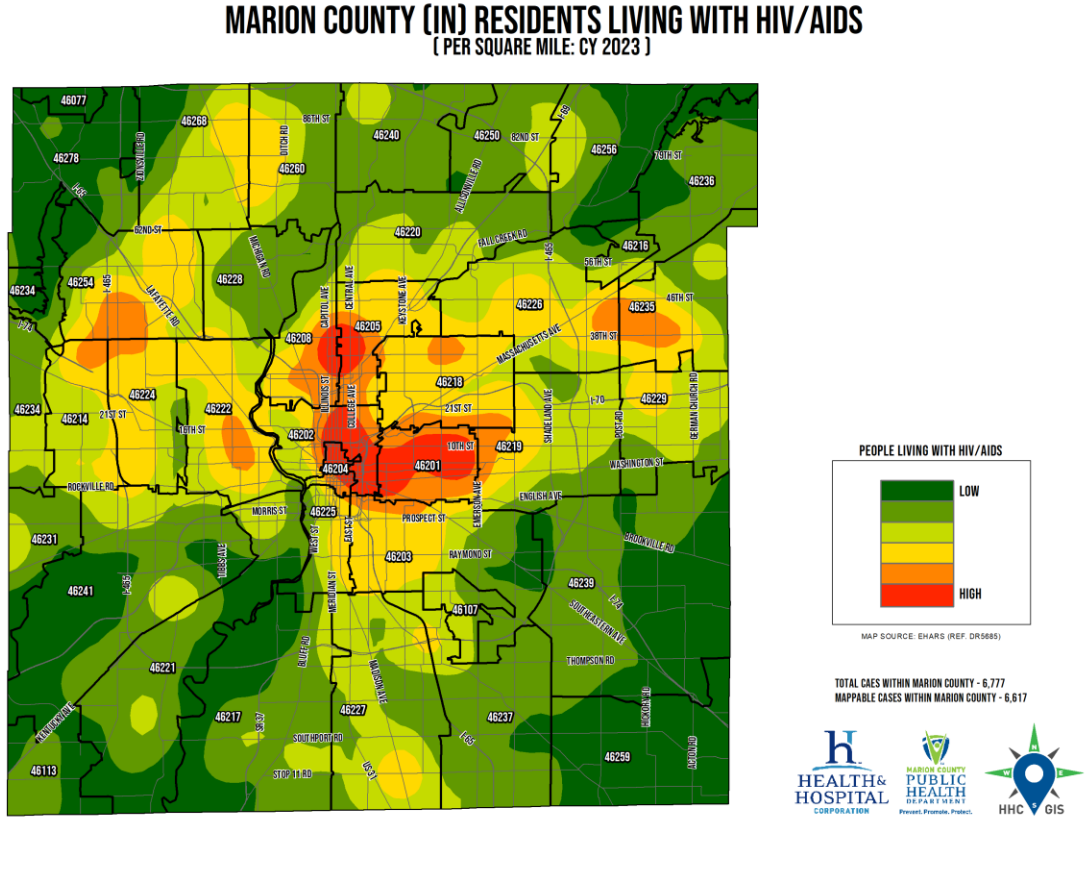
Marion County Residents Living with HIV/AIDS, 2022 and 2023





Data Source: DR5685, eHARS

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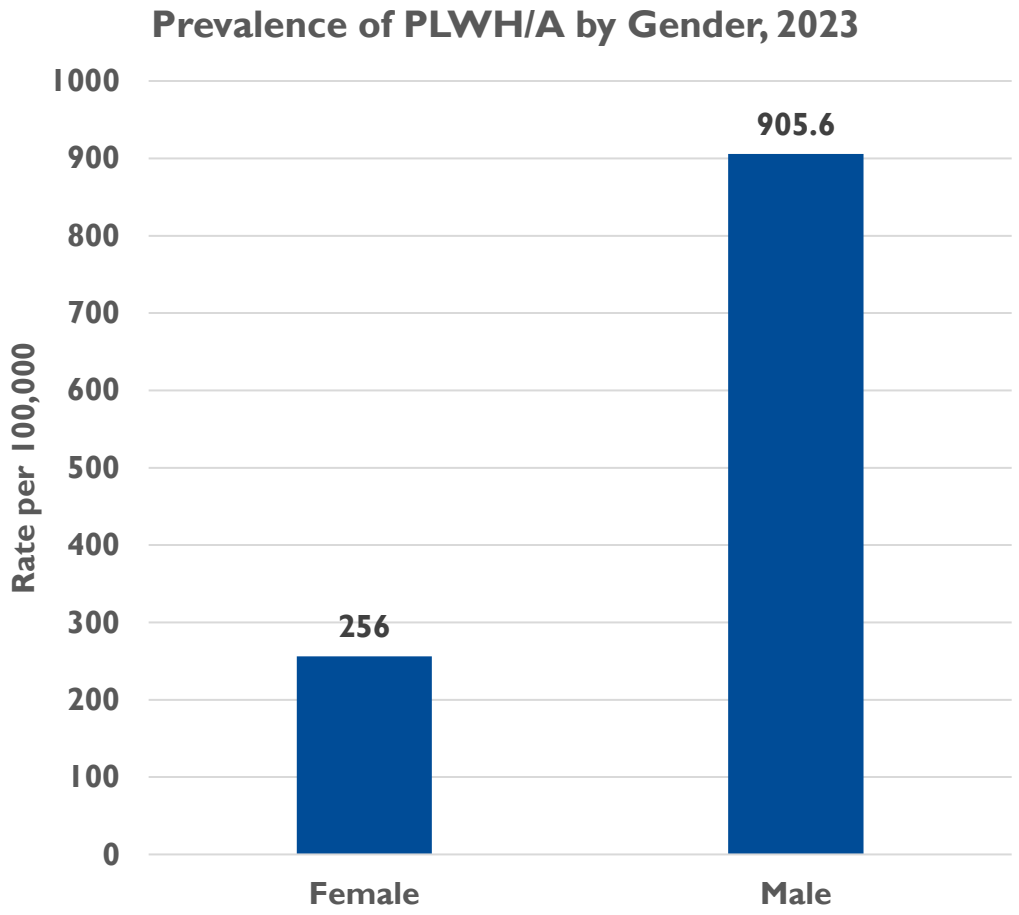
HIV/AIDS Prevalence by Gender

Gender	No.	% in Marion County	Rate [95% CI*]	RR [95%CI*]: to Female
Female	1291	22.8%	256 [242.2-270.3]	1.0
Male	4280	75.6%	905.6 [878.9-932.9]	3.5 [3.3-3.8]
Transgender	92	1.6%	-	-

*95% Confidence Interval
RR = Risk Ratio

Data Source: DR5730, eHARS

HIV/AIDS Prevalence by Gender



- Prevalence was highest among Males at a rate 3.5 times greater than Females

Data Source: DR5730, eHARS

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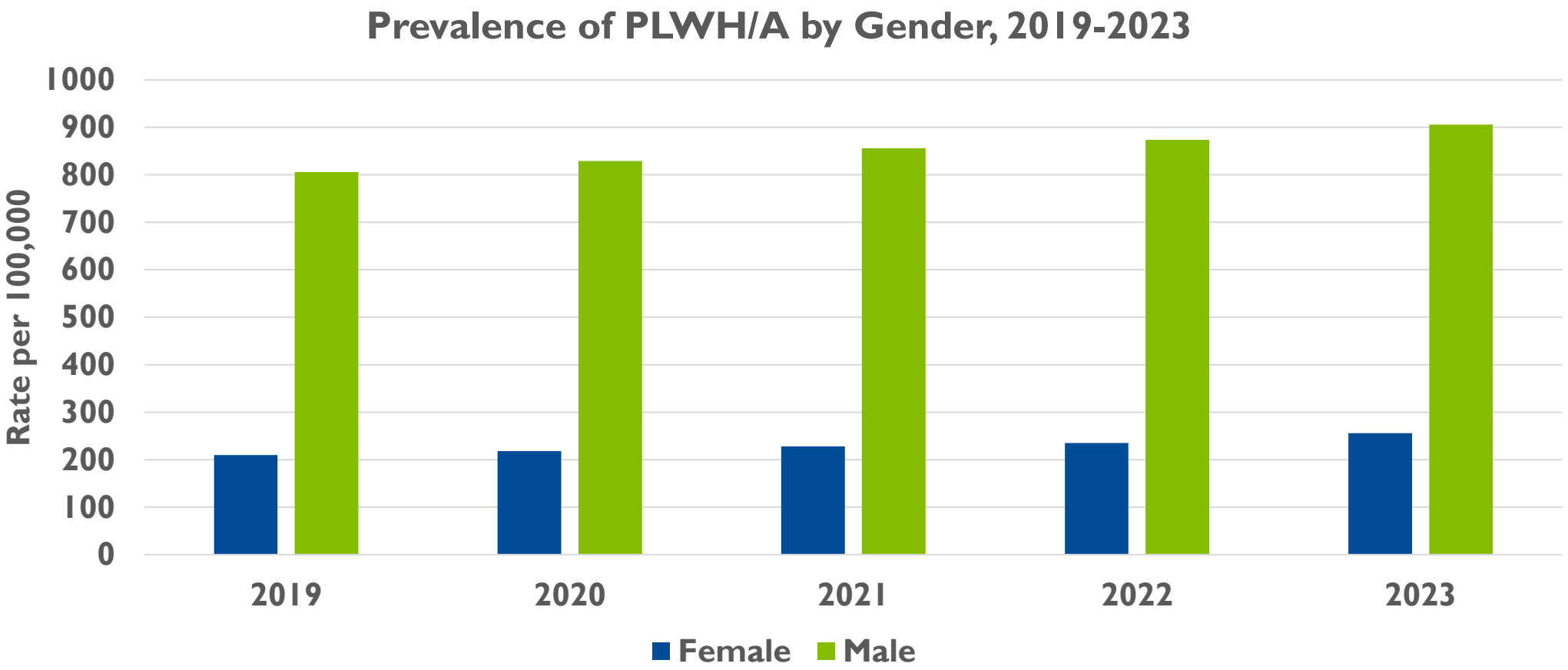
HIV/AIDS Prevalence by Gender, 2019-2023



Data Source: DR5730, eHARS

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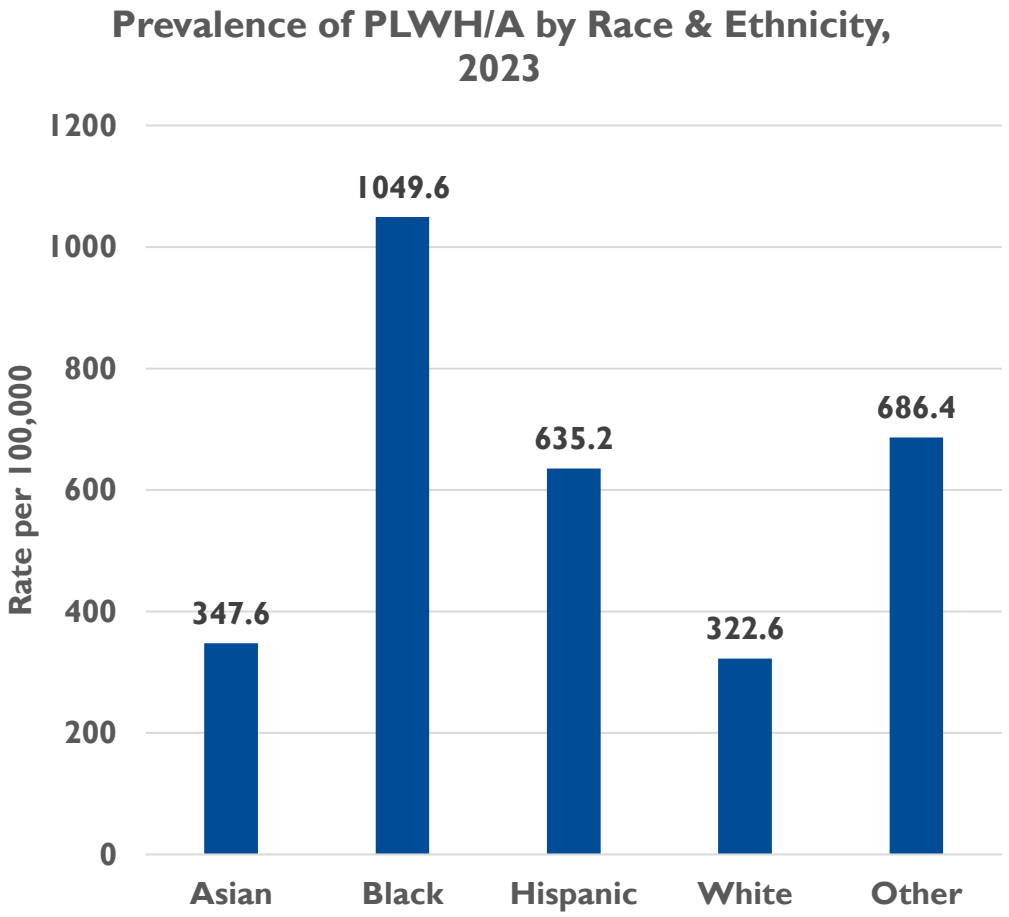
HIV/AIDS Prevalence by Race/Ethnicity

Race/Ethnicity	No.	% in Marion County	Rate [95% CI*]	RR [95% CI*]: to White
Asian/Pacific Islander	140	2.5%	347.6 [292.5-410.1]	1.1 [0.9-1.3]
Black	2955	52.2%	1049.6 [1012.5-1087.7]	3.3 [3.1-3.5]
Hispanic	704	12.4%	635.2 [589.3-683.7]	2.0 [1.8-2.2]
White	1660	29.3%	322.6 [307.3-338.4]	1.0
Other	204	3.6%	686.4 [595.7-786.9]	2.1 [1.8-2.5]

*95% Confidence Interval
RR = Risk Ratio

Data Source: DR5730, eHARS

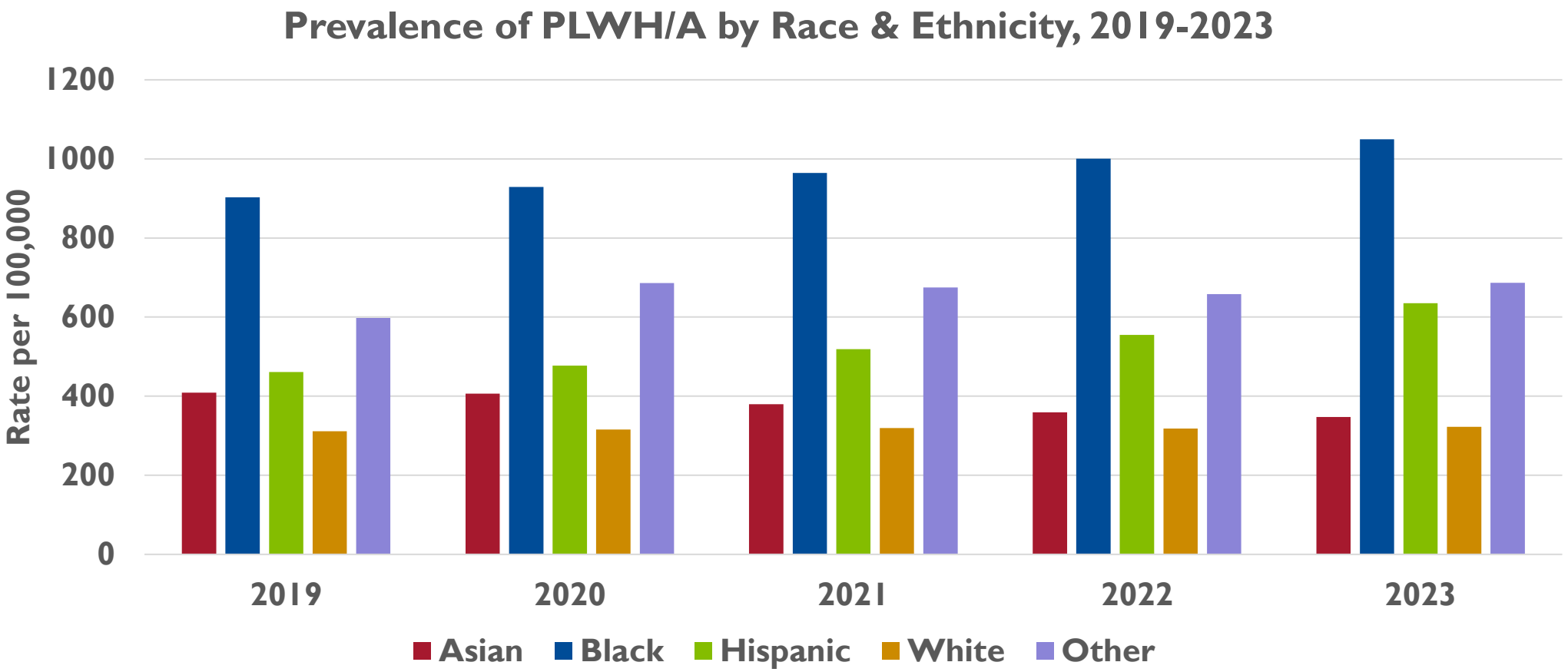
HIV/AIDS Prevalence by Race/Ethnicity



- Prevalence was highest among Black, non-Hispanic people with a rate of 1049.6 per 100,000 people compared to Hispanic (635.2 per 100,000), Asian (347.6 per 100,000), and White, non-Hispanic (322.6 per 100,000)

Data Source: DR5730, eHARS

HIV/AIDS Prevalence by Race/Ethnicity, 2019-2023



Data Source: DR5730, eHARS

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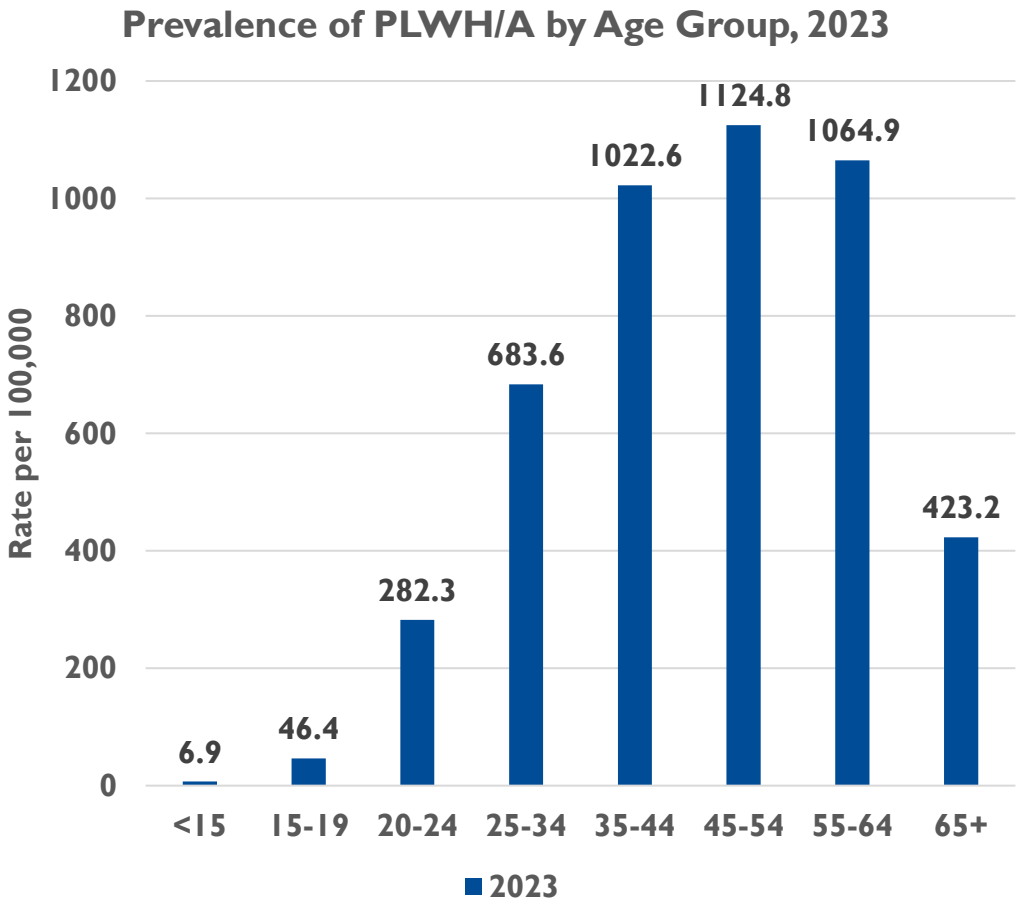
HIV/AIDS Prevalence by Age Group

Age Group	No.	% in Marion County	Rate [95% CI*]
<15	14	0.3%	6.9 [3.8-11.6]
15-19	29	0.5%	46.4 [31.1-66.6]
20-24	189	3.3%	282.3 [243.5-325.4]
25-34	1110	19.6%	683.6 [644.1-724.8]
35-44	1335	23.6%	1022.6 [968.7-1078.6]
45-54	1227	21.7%	1124.8 [1063.1-1189.2]
55-64	1216	21.5%	1064.9 [1006.2-1126.2]
65+	543	9.6%	423.2 [388.4-460.2]

*95% Confidence Interval

Data Source: DR5730, eHARS

HIV/AIDS Prevalence by Age Group



- 67% of PLWH/A are between the ages of 35-64
- PLWH/A between the ages of 45-54 had the highest prevalence rate, followed by 55-64-year-olds, and 35-44-year-olds

Data Source: DR5730, eHARS

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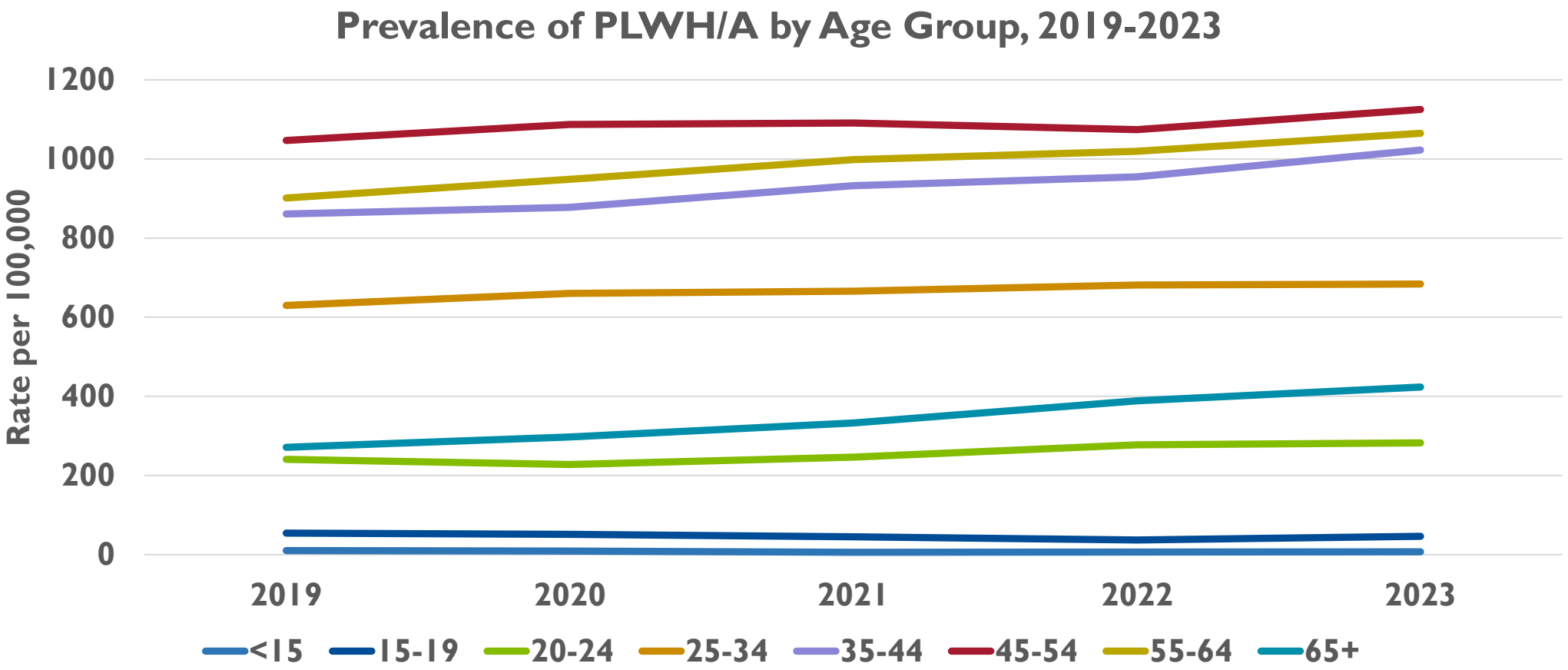
HIV/AIDS Prevalence by Age Group, 2019-2023



Data Source: DR5730, eHARS

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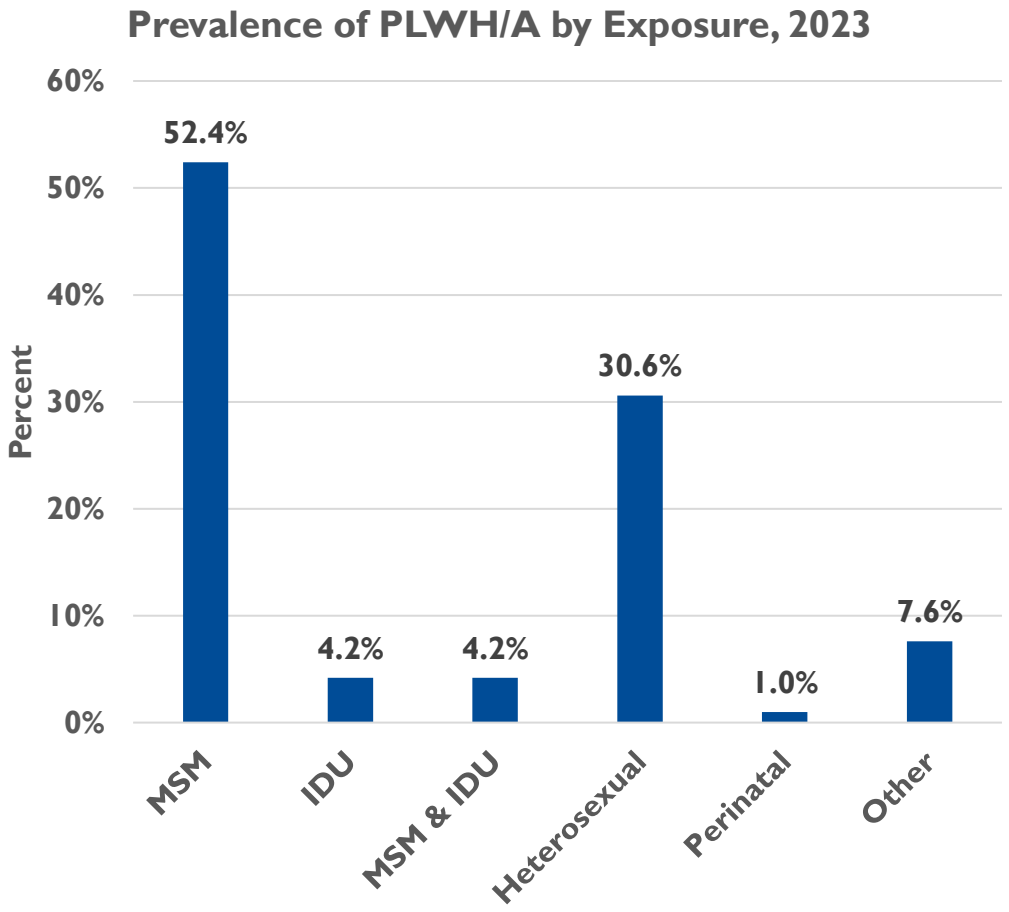
HIV/AIDS Prevalence by Exposure Category

Exposure	No.	% in Marion County
MSM	2969	52.4%
IDU	239	4.2%
MSM & IDU	235	4.2%
Heterosexual	1731	30.6%
Perinatal	58	1.0%
Other	431	7.6%

*Other includes Other, No Risk Reported, and No Risk Identified
RR = Risk Ratio

Data Source: DR5730, eHARS

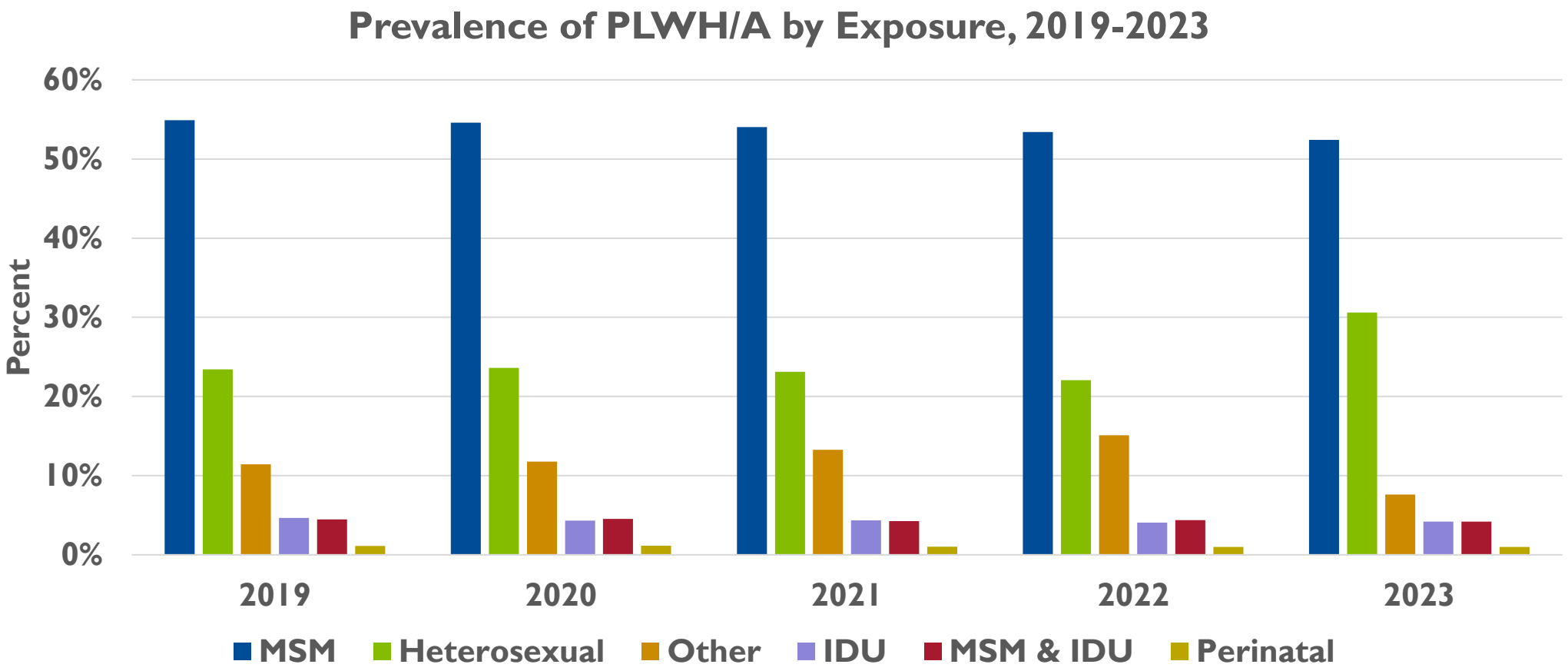
HIV/AIDS Prevalence by Exposure Category



- 52.4% of PLWH/A are attributed to male-to-male sexual contact, 30.6% to heterosexual contact, 4.2% to IDU and MSM/IDU, and 1.0% to perinatal exposure

Data Source: DR5730, eHARS

HIV/AIDS Prevalence by Exposure Category, 2019-2023



Data Source: DR5730, eHARS

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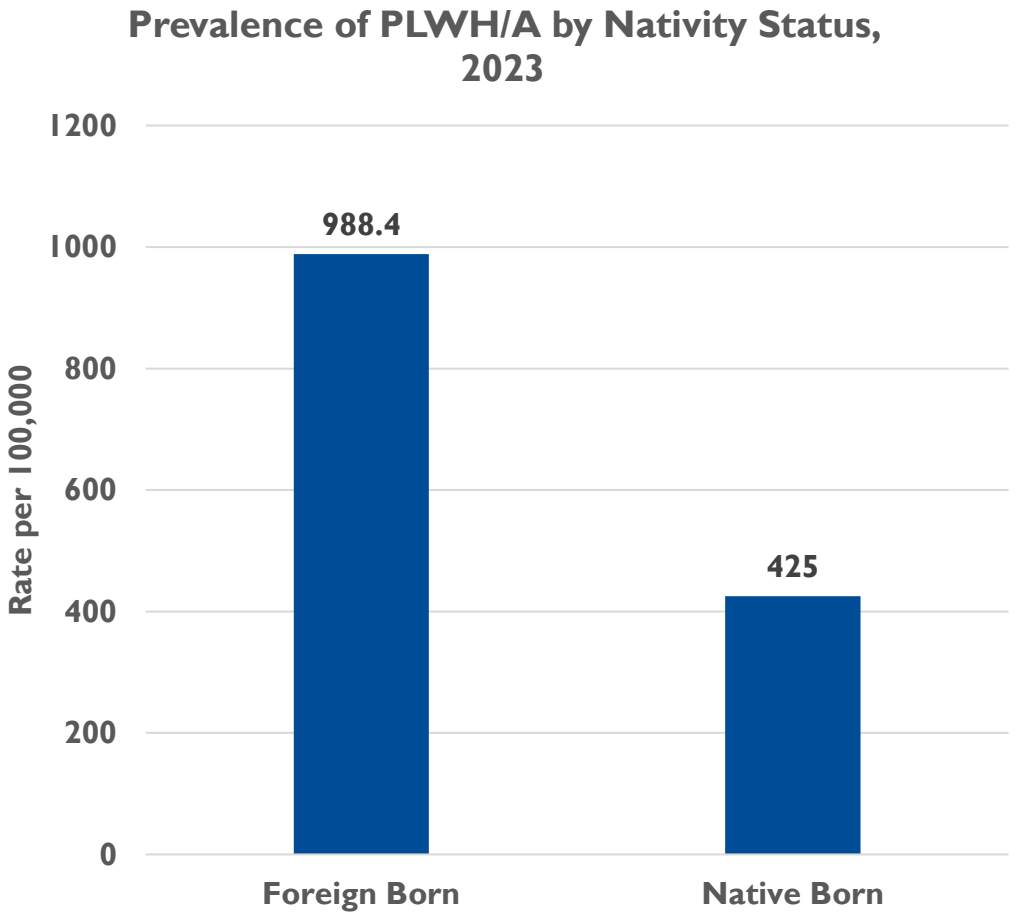
HIV/AIDS Prevalence by U.S. Nativity Status

Nativity Status	No.	% in Marion County	Rate [95% CI*]	RR [95% CI*]: to Native Born
Foreign Born	985	17.4%	988.4 [927.9-1051.8]	2.3 [2.2-2.5]
Native Born	3729	65.9%	425 [411.6-438.8]	1.0
Unknown/Missing	949	16.8%	-	-

*95% Confidence Interval
RR = Risk Ratio

Data Source: DR5730, eHARS

HIV/AIDS Prevalence by U.S. Nativity Status



- Prevalence is highest among the foreign-born population with a rate of 988.4 per 100,000 compared to the native-born population with a rate of 425 per 100,000 people

Data Source: DR5730, eHARS

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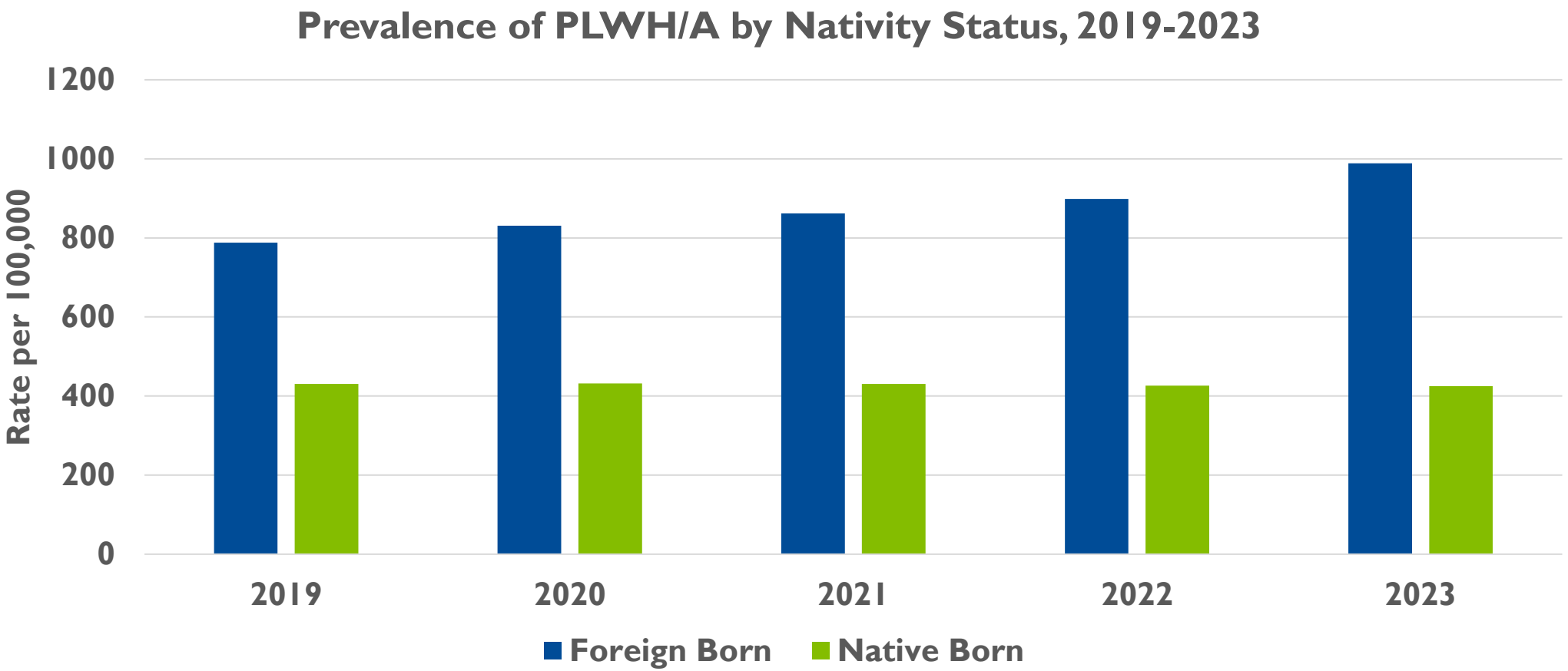
HIV/AIDS Prevalence by U.S. Nativity Status, 2019-2023



Data Source: DR5730, eHARS

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Measures of HIV/AIDS Health Outcomes

HIV Care Continuum

- A public health model that outlines the stages that people living with HIV go through from diagnoses to maintaining viral suppression
  - Diagnosis of HIV
  - Linkage to care
  - Receipt of care
  - Retention in care
  - Achieving and maintaining viral suppression

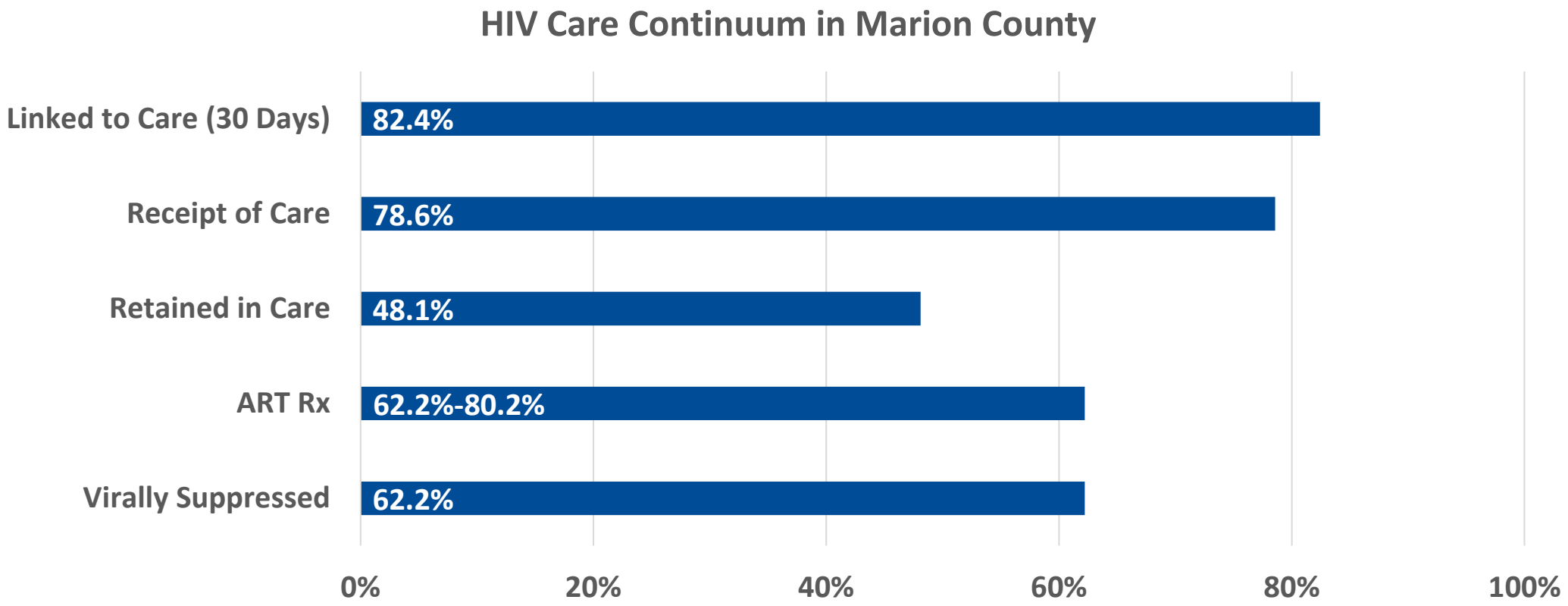
National HIV/AIDS Strategy for the United States 2022-2025

- By 2025, the nation hopes to achieve the following indicators
  - Indicator 1: Increase knowledge of status to 95% from a 2017 baseline of 85.8%
  - Indicator 5: Increase linkage to care within 1 month of diagnosis to 95% from a 2017 baseline of 77.8%
  - Indicator 6: Increase viral suppression among people with diagnosed HIV to 95% from a 2017 baseline of 63.1%

HIV Care Continuum Definitions

- Linked to Care
  - Having a visit with a health care provider and getting a CD4 or viral load test within one month of being diagnosed with HIV
- Receipt of Care
  - Those living with diagnosed HIV who received medical care for HIV and had at least one CD4 count or HIV viral load test in that year
- Retained in Care
  - Those living with diagnosed HIV who had two or more CD4 or viral load tests, performed at least 3 months apart
- Antiretroviral Therapy (ART)
  - A combination of medications used to treat HIV
- Viral Suppression
  - Those living with diagnosed HIV who had suppressed HIV viral load results (<200 copies/mL) on their last reported viral load test during 2023

HIV Care Continuum in Marion County



*90.8% of people newly diagnosed with HIV were linked to care within 90 days

Data Source: DR5730, eHARS

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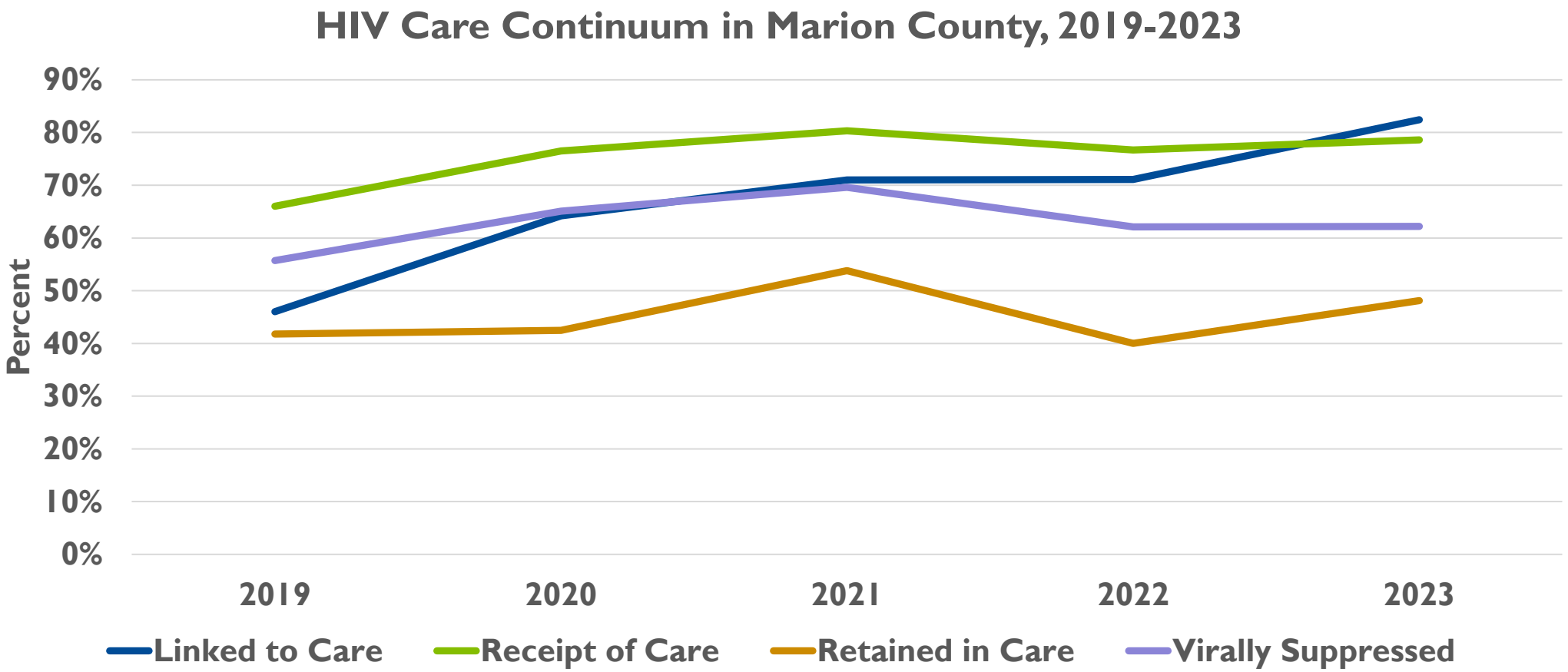
HIV Care Continuum in Marion County, 2019-2023



Data Source: DR5730, eHARS

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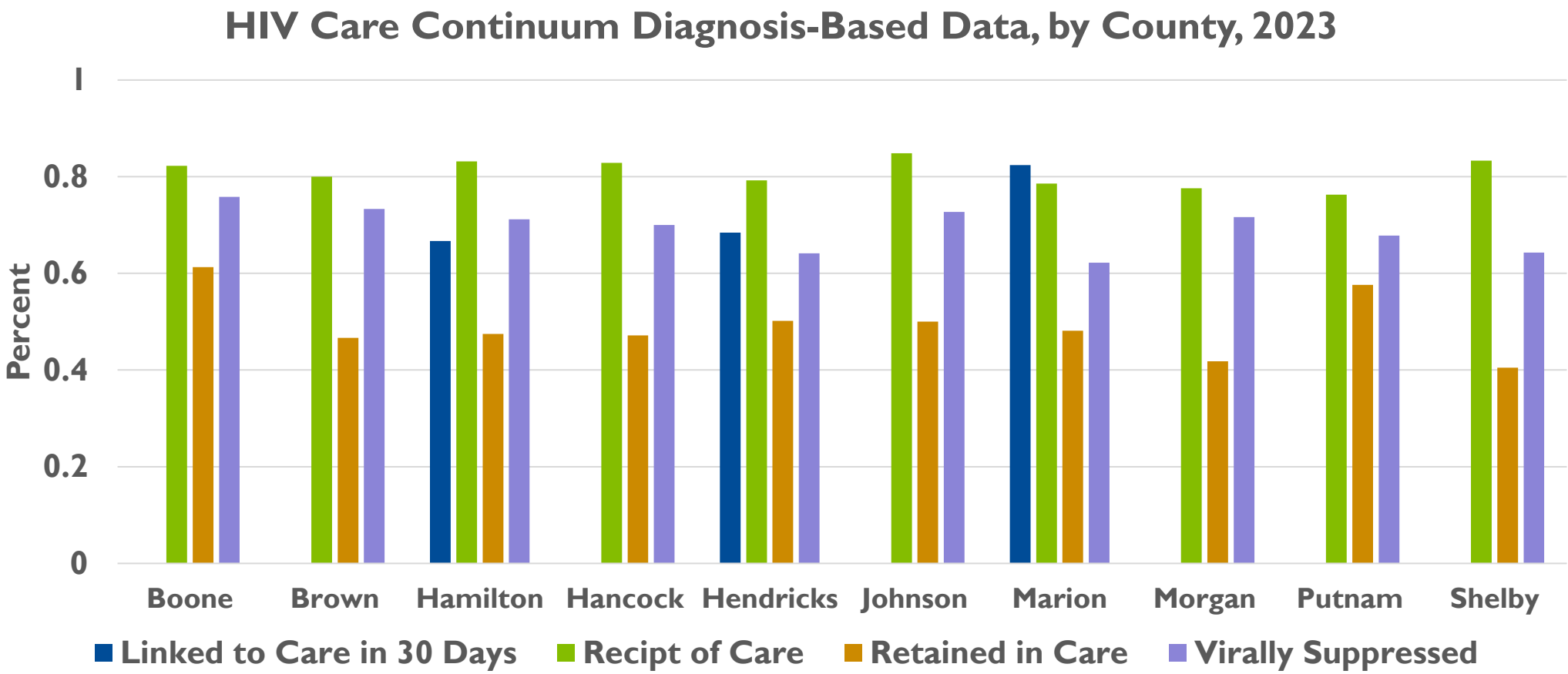
HIV Care Continuum by County



Data Source: DR5685, eHARS

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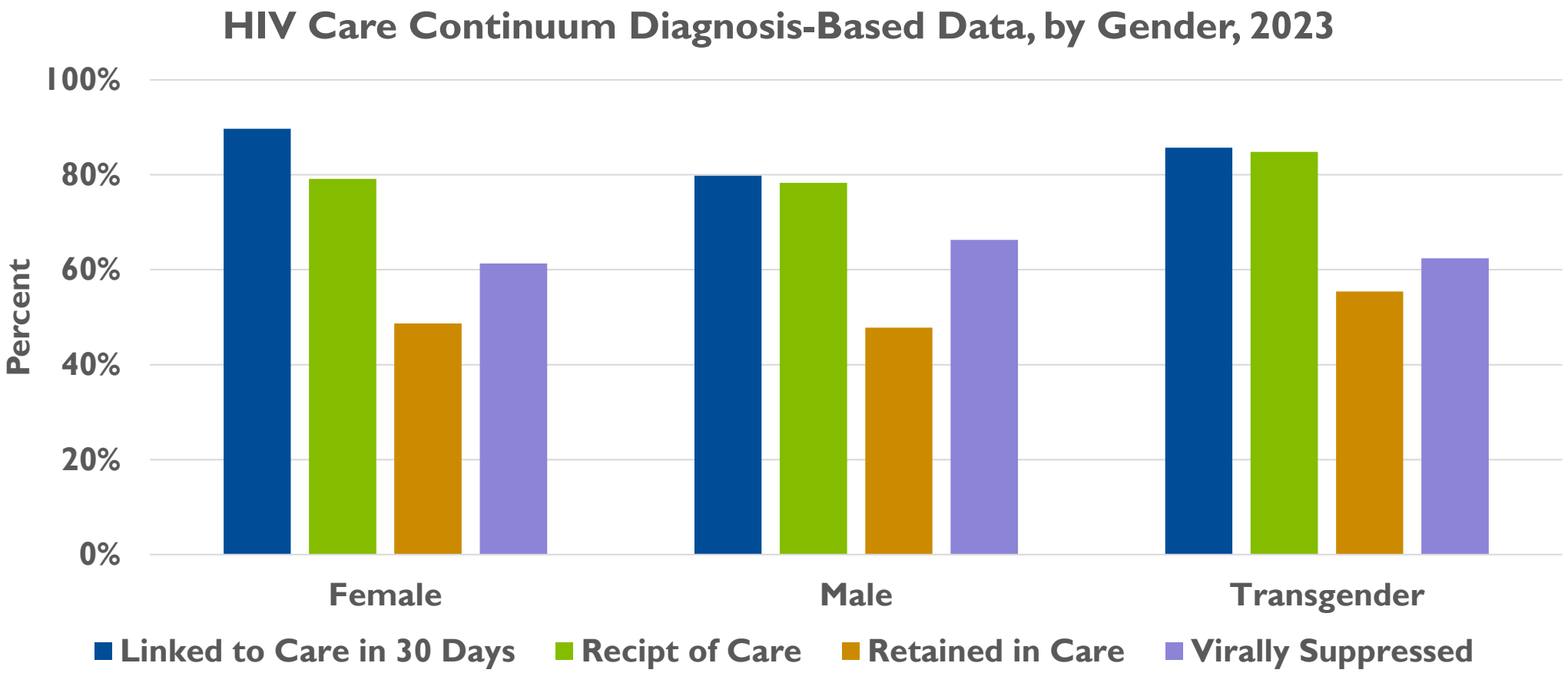
HIV Care Continuum by Gender



Data Source: DR5730, eHARS

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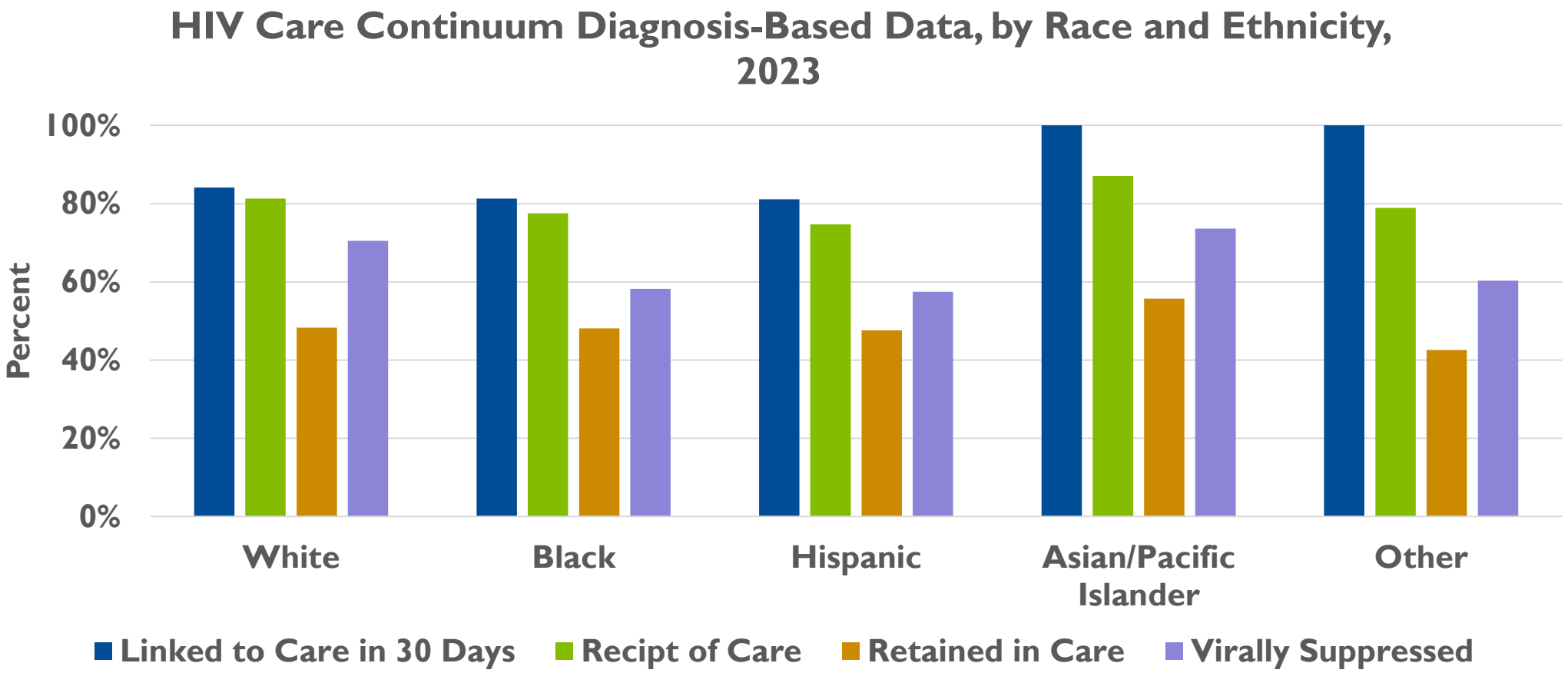
HIV Care Continuum by Race & Ethnicity



Data Source: DR5730, eHARS

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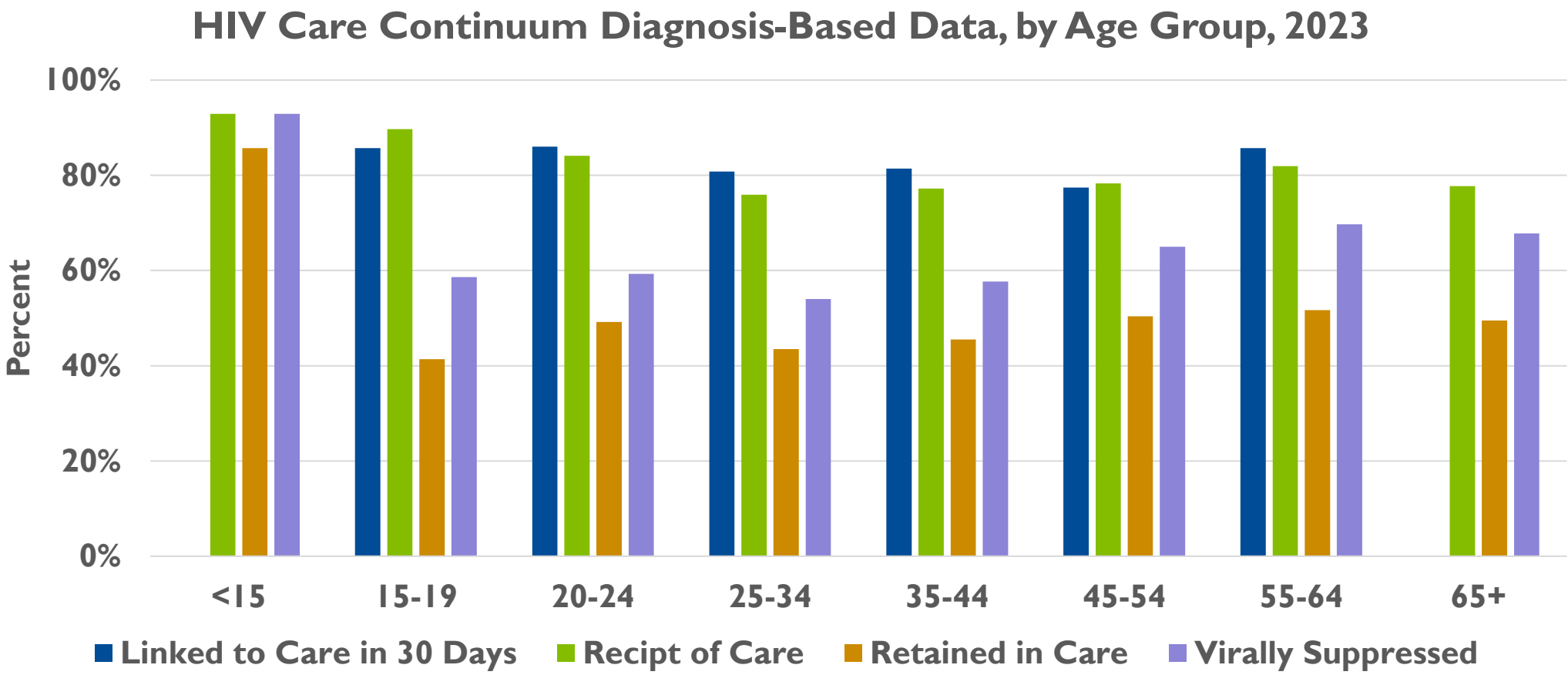
HIV Care Continuum by Age Group



Data Source: DR5730, eHARS

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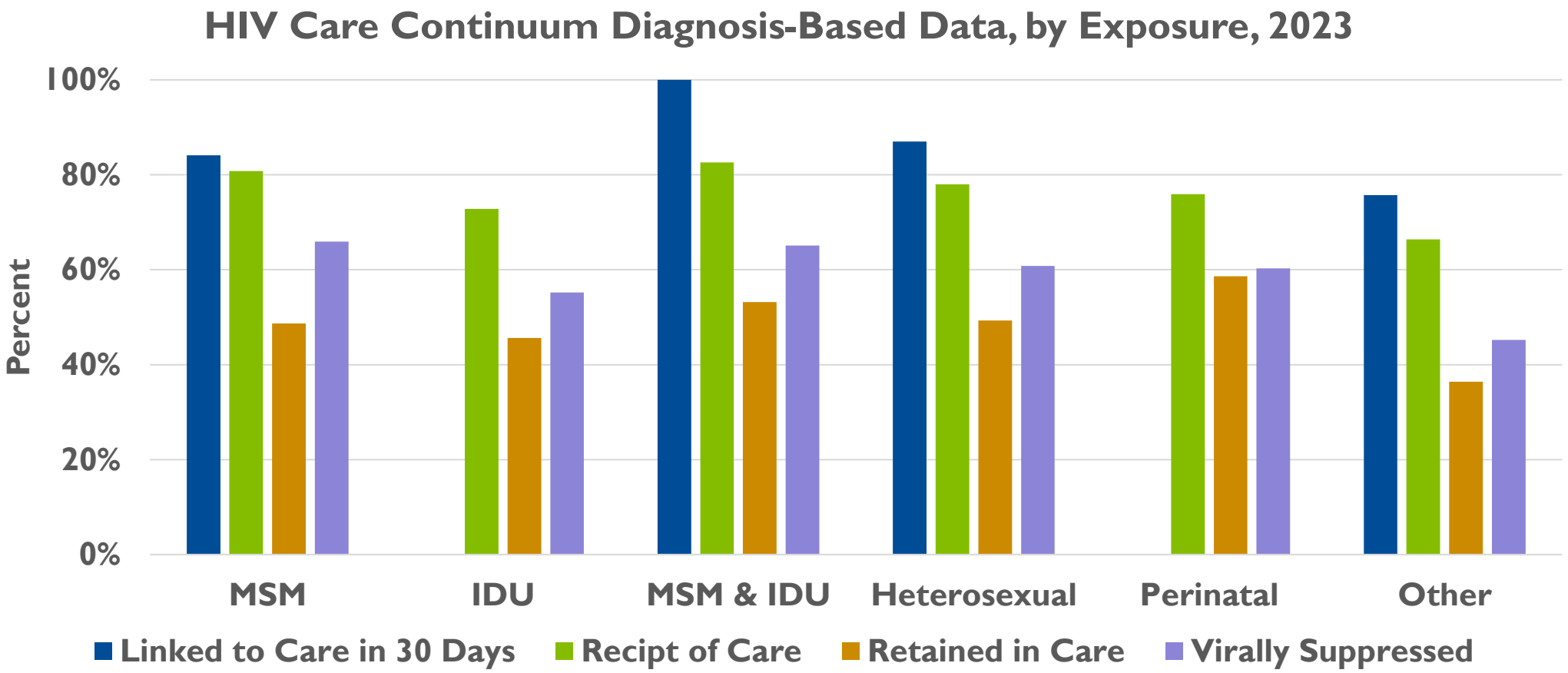
HIV Care Continuum by Exposure Category



Data Source: DR5730, eHARS

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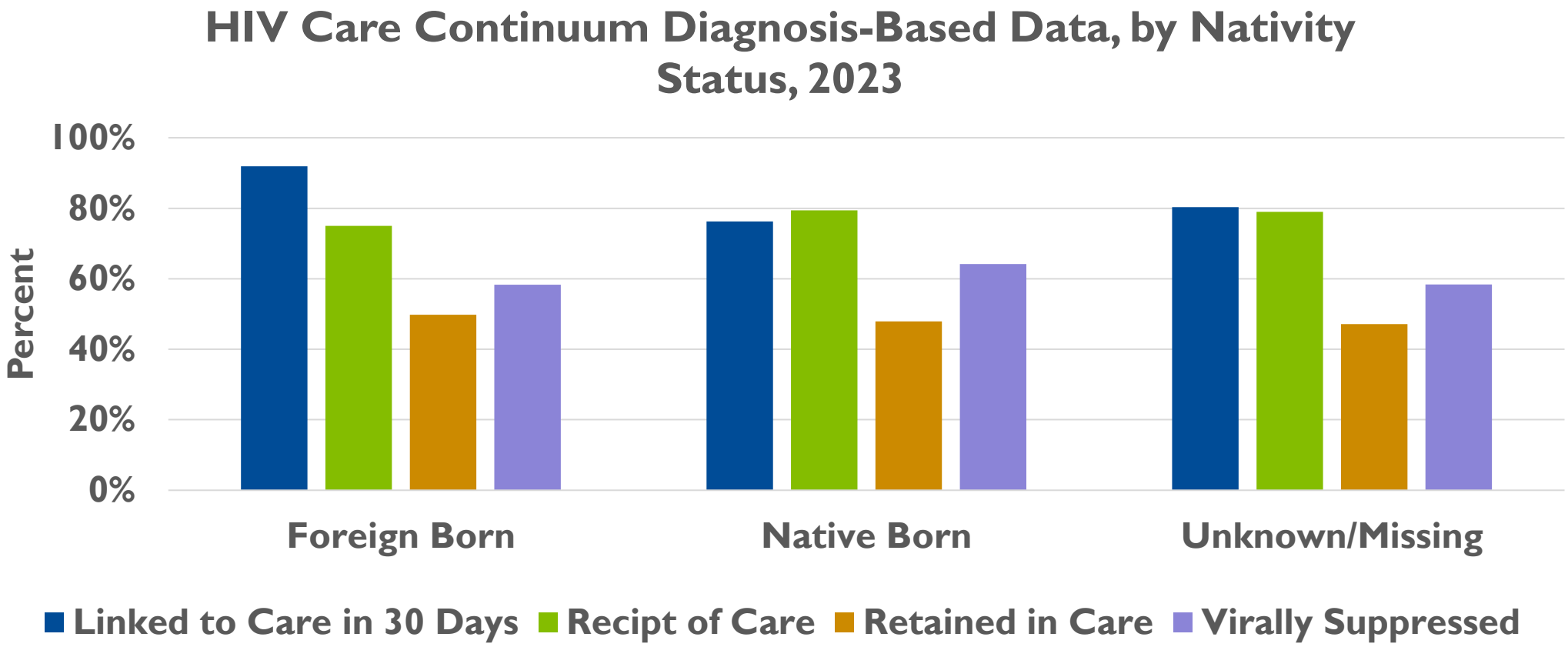
HIV Care Continuum by Nativity Status



Data Source: DR5730, eHARS

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Questions?

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Thank you

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