

HIV Trends

New diagnoses 2014-2023

Data as of July 2024



The HIV Trend Report includes persons diagnosed with HIV while living in Michigan. This slide set highlights key HIV diagnosis trends over the past 10 years and is meant to guide care and prevention strategies. Changes in short term trends - such as an outbreak - are monitored by the HIV Surveillance Program monthly. To view the tables used to create this slide set, confidence intervals, and other geographic and demographic breakdowns, please see the [HIV Trends Tables](#).

When available, census data are used to calculate rates of new diagnoses. For populations where census data are not available (for example, number of persons who inject drugs), the proportion of newly diagnosed persons who fall into a given category are assessed. Using rates and proportions (rather than counts) when comparing regions, demographic groups, or changes over time is critical. For further explanation, see our 5 minute [Epidemiology 101 video](#).

Negative binomial regression and Poisson distributions are utilized to determine statistically significant changes in new diagnoses over the preceding 10 years. For simplicity, statistically significant changes ($p < 0.05$) are referred to as "significant" increases or decreases. Important trends where $0.05 \leq p \leq 0.1$ are referred to as "marginally significant". Often non-significant trends that visually appear significant are due to large variability year to year. When something is "significant" it means we are 95% sure the upward or downward trend is real. When there's a lot of variability, we can't be sure - for example it's possible there were a couple outlier years and there's not really a change. Brown trendlines indicate a significant change while the grey trendlines indicate changes not significantly different from zero ($p > 0.05$).

Overview 2014-2023

- It's likely a surplus of PWH are unaware of their status due to the 2020 dip in diagnoses and continued low diagnoses 2021-2022. *(see slide 4)*
- Lack of risk data creates challenges around curbing rapid transmission networks – especially among persons who inject drugs.

Increased diagnoses

- Grand Traverse Region (slide 10)
- Southwest Michigan (slide 11)
- Latinx residing in the Detroit LHD jurisdiction (slide 15)
- Persons 30-39 years old (slide 18)
- Undisclosed reason for transmission (a.k.a risk, slide 20)

Decreased diagnoses

- Detroit LHD (slide 7)
- Oakland Co. (slide 8)
- Kent and Washtenaw Counties (slide 9)
- Black/AA persons (slide 14)
- 15-29, 40+ year old persons (slides 17-19)

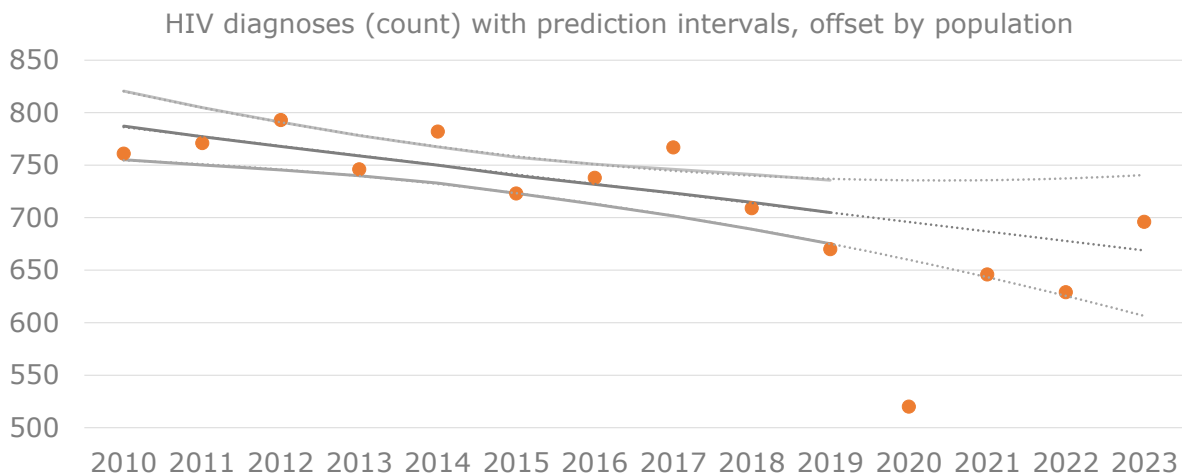
Given shifting age groups, the primary priority population will transition from Black men 15-29 years old to Black men 20-39 years old. *(see slides 17-19)*

Notes

- Trendlines and significance testing do not include 2020.
- Trends are a measure of new diagnoses, not new infections. Historically, new diagnoses were a consistent proxy for new infections. This may still be the case, but the drop in testing during 2020 has made the relationship questionable.

Further information is on the next slide.

HIV diagnoses dropped significantly during 2020 due to lack of testing



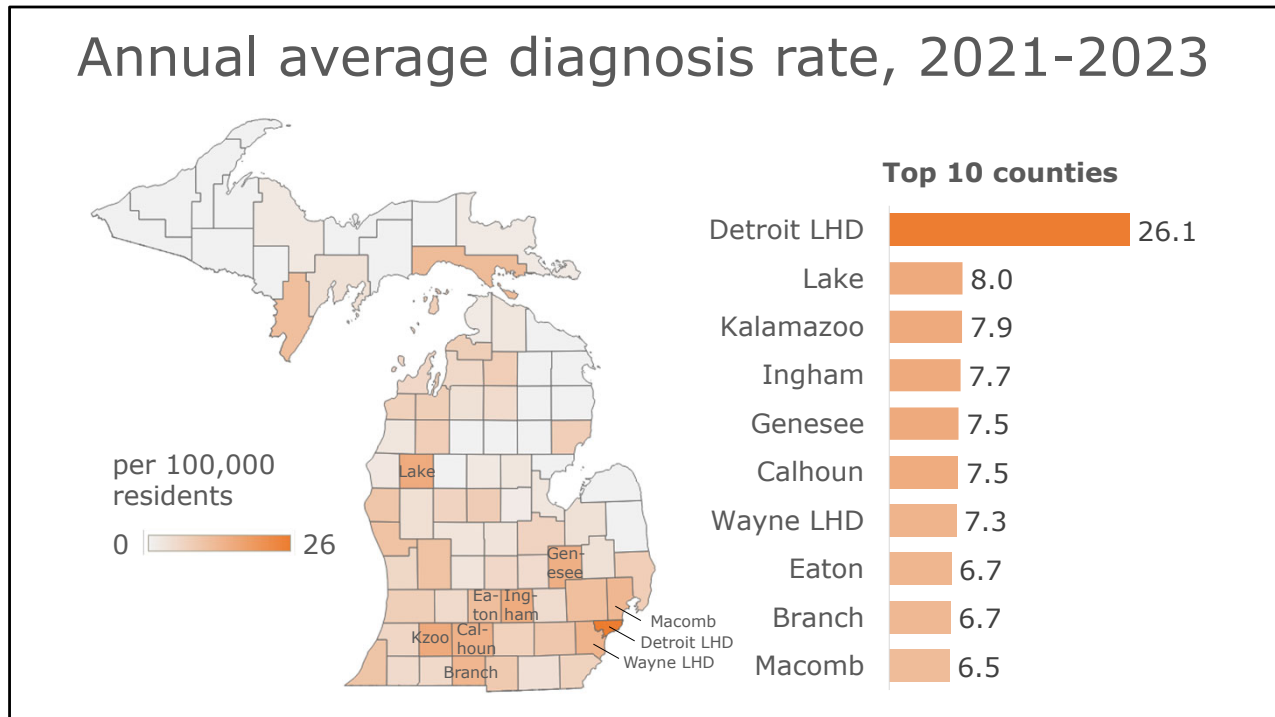
Given the 2010-2019 trend (grey line with prediction intervals), new diagnoses during 2020 were 25% lower than expected. The magnitude of this drop was most likely due to lack of testing, not a decrease in actual transmissions. STI's, specifically Syphilis diagnoses among men who have sex with men, did not decline during 2020 or 2021 – a relatively good proxy for HIV transmissions.

The Stay Home Stay Safe (SHSS) order from March 23 – June 1 closed all non-essential businesses, including many HIV testing sites. Post SHSS, Local Health Departments (LHD's) and Community Based Organizations (CBO's) switched from walk-in HIV testing to testing by appointment only which greatly reduced testing volume. Most diagnoses during 2020 occurred in primary care settings or in Emergency Departments.

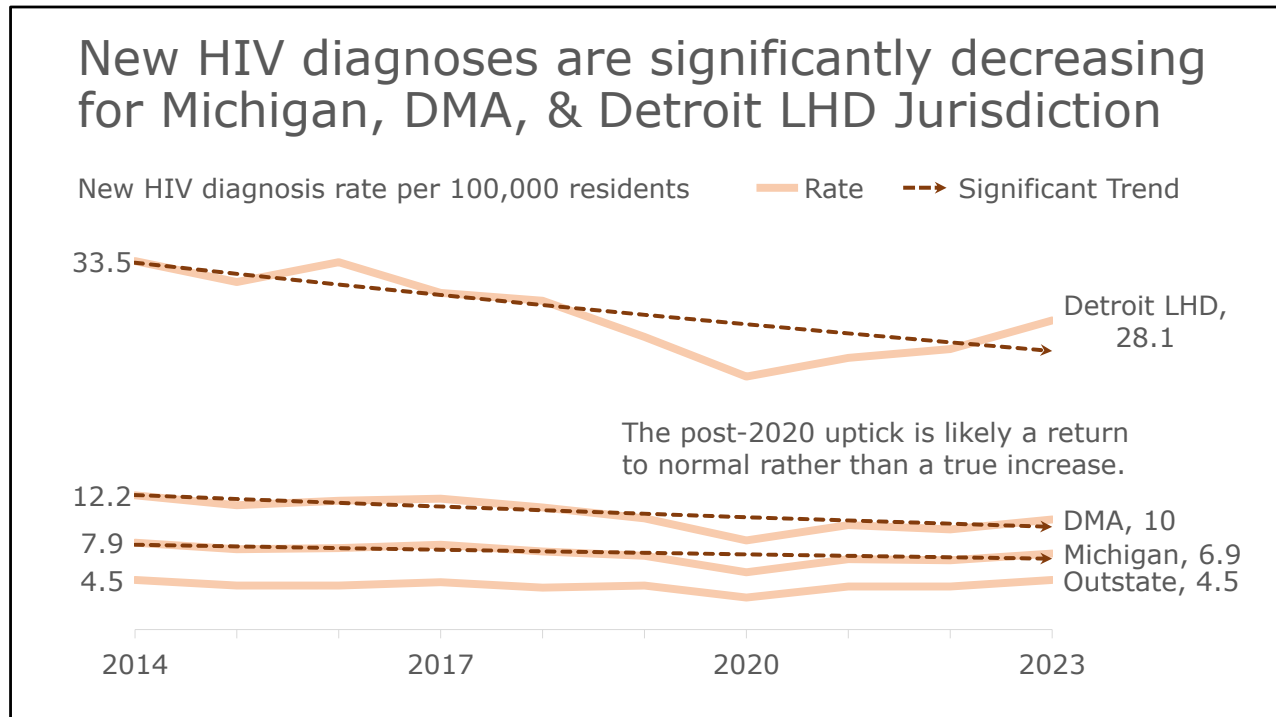
New diagnoses during 2021 and 2022 appear to be on the low end of the normal range suggesting those missed during 2020 likely remain undiagnosed along with additional missed diagnoses 2021-2022. The number of diagnoses during 2023 returned to an expected level, but over 200 diagnoses missed 2020-2022 remain undiagnosed.

Receiving a diagnosis early and getting into HIV care improves the individual's prognosis and reduces the risk of further transmissions. Additionally, the low diagnoses during 2021 and 2022 may be amplifying moderate decreases or masking increases.

Geographic Trends



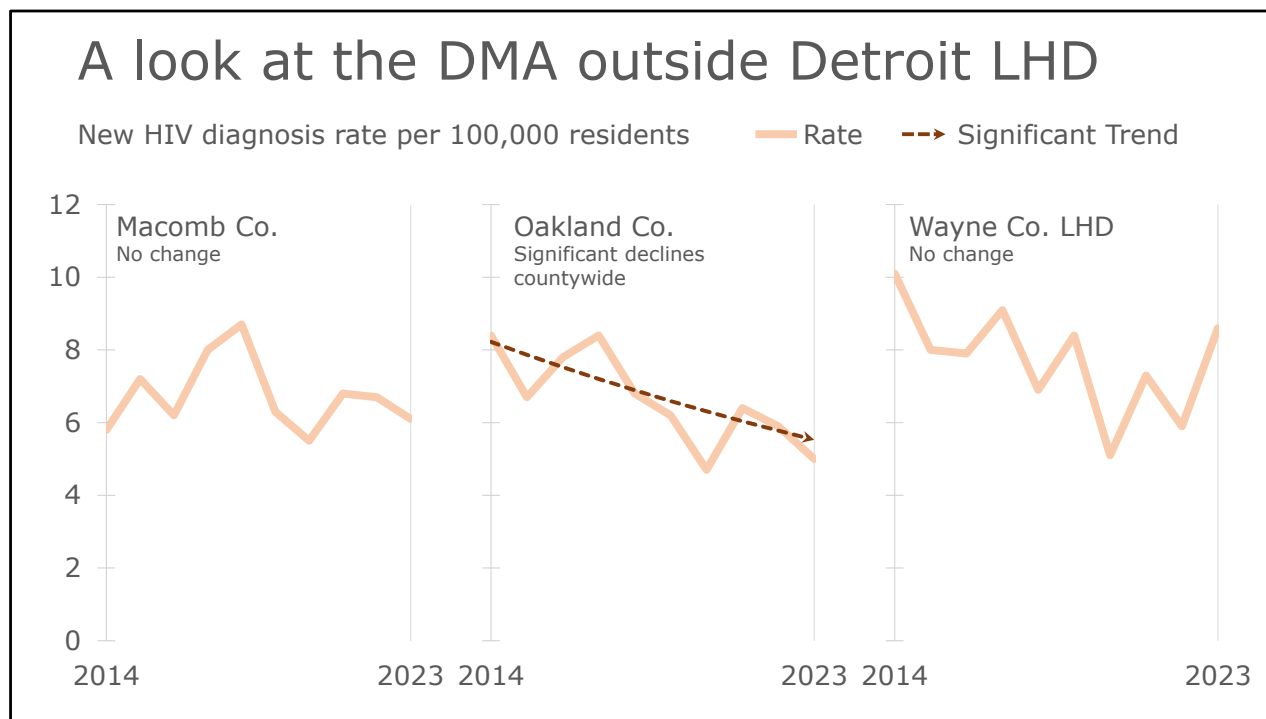
The **Detroit Local Health Department (LHD)** jurisdiction includes persons living in the cities of Detroit, Highland Park, Hamtramck, Harper Woods, or the Grosse Pointes. The **Wayne Co. LHD** includes person living in Wayne County outside the Detroit LHD.



The **Detroit Local Health Department** (LHD) jurisdiction includes persons living in the cities of Detroit, Highland Park, Hamtramck, Harper Woods, or the Grosse Pointes. **DMA** is the Detroit Metro Area and includes Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne (including Detroit) counties. **Outstate** includes persons living in Michigan outside the DMA.

The rate of new diagnoses significantly declined among residents of the Detroit LHD jurisdiction, the DMA, and the state of Michigan as a whole. There was no significant change in the Outstate region as a whole. New diagnoses decreased an average of 3.0% per year in the Detroit LHD and the DMA. The significant drop among City of Detroit residents drove these declines along with a significant decrease among Oakland County residents. Because the majority of persons diagnosed with HIV in Michigan reside in the DMA, the decrease at the state level (2.0% per year) is primarily due to the decrease in the DMA.

Brown trendlines indicate a significant change ($p < 0.05$) while an absence of a trendline indicates changes not significantly different from zero.

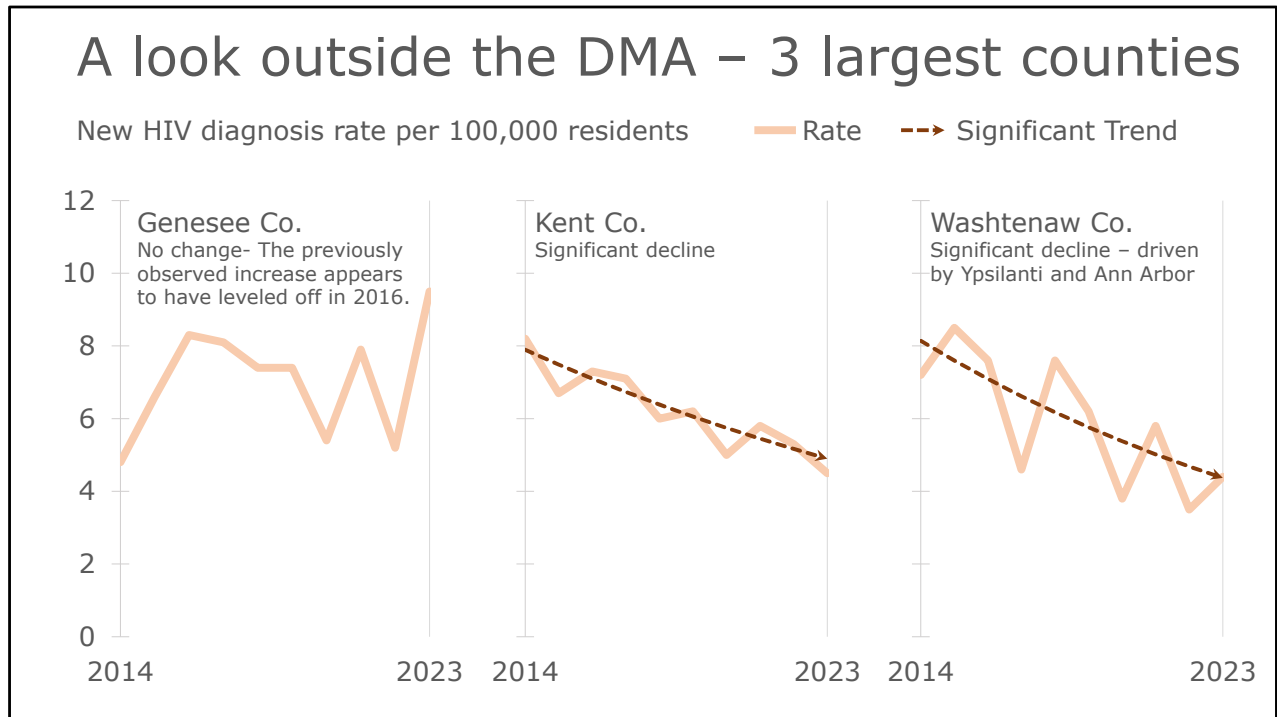


NOTE: The y-axis scale is the same for all graphs.

The **Detroit Local Health Department** (LHD) jurisdiction includes persons living in the cities of Detroit, Highland Park, Hamtramck, Harper Woods, or the Grosse Pointes. **DMA** is the Detroit Metro Area and includes Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne (including Detroit) counties.

- In **Macomb** county, it is possible a continued lack of testing since 2020 is keeping diagnoses low.
- **Oakland** County significantly decreased by 4.3% per year. It's possible missed individuals since 2020 still need to be diagnosed.
- **Wayne Co. LHD** (Wayne Co. outside the Detroit LHD jurisdiction) was declining significantly pre-2020. This year the decline was not significant due to the uptick in 2023. It is possible the number of diagnoses in 2023 made up for those missed in 2020. Next year should give a clearer picture of Wayne LHD's post-2020 trend.
- No significant changes were observed among Lapeer, Monroe, or St. Clair Counties.

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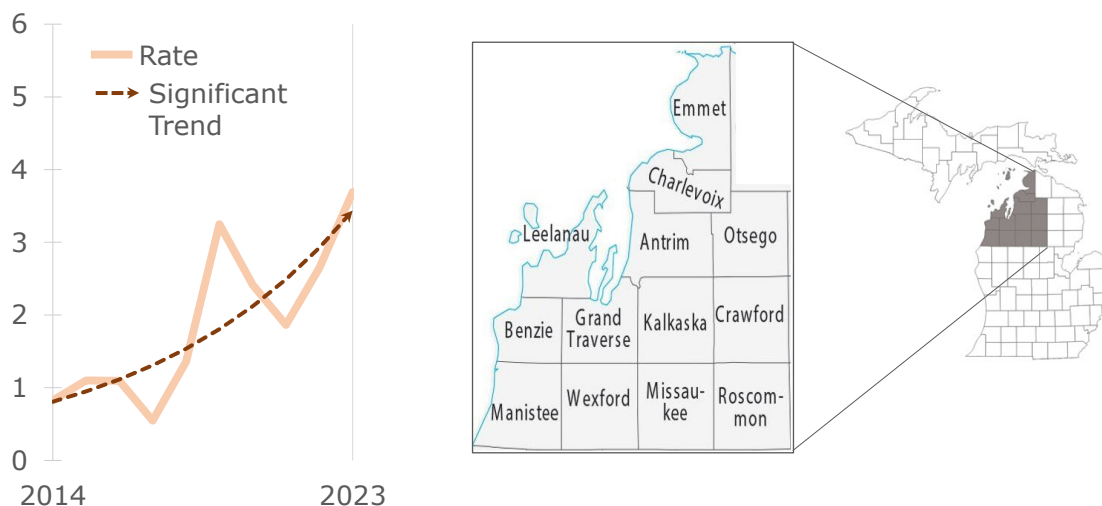
DMA is the Detroit Metro Area and includes Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne (including Detroit) counties.

New diagnoses among **Kent** County residents decreased significantly by 5.2% per year. Diagnoses decreased significantly for **Washtenaw** County residents by 6.8% per year.

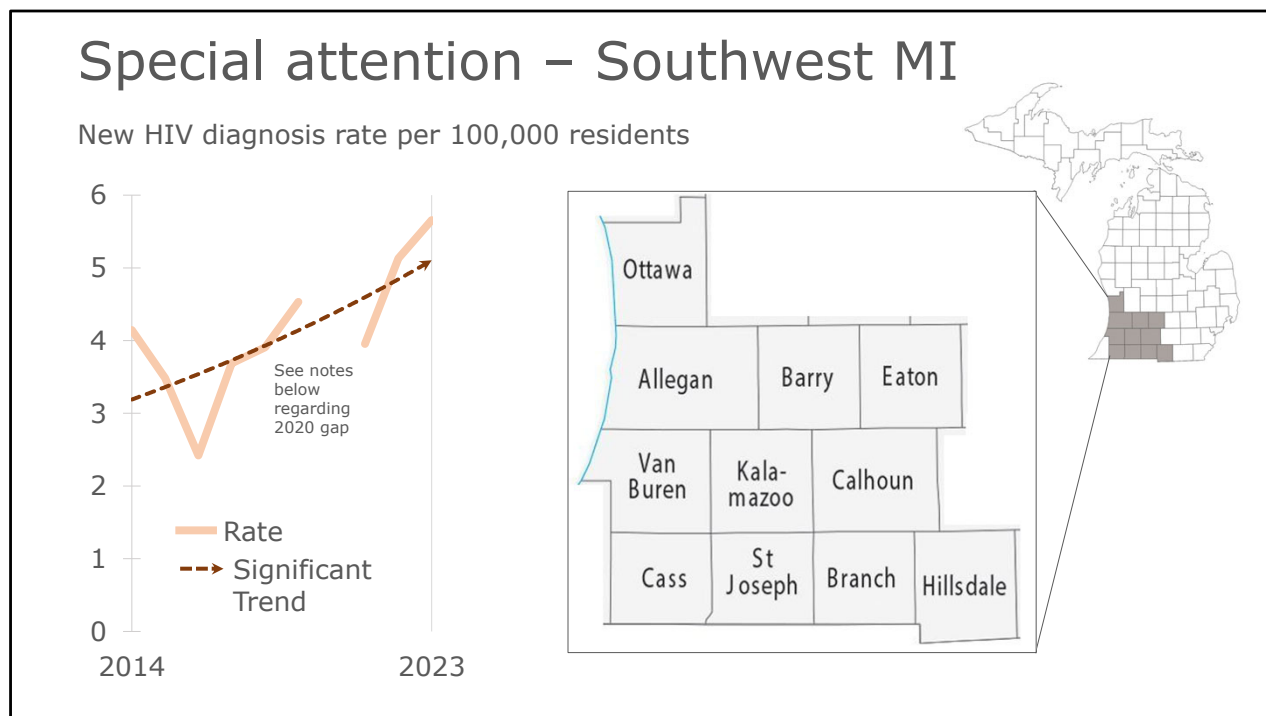
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Special attention – Grand Traverse Region

New HIV diagnosis rate per 100,000 residents



The HIV diagnosis rate in this region has increased by 17.5% per year. The first indication occurred in 2018 when an oddly high number of new diagnoses were identified in Kalkaska County. Since then, the region was identified several more times through morbidity monitoring and network detection. These new diagnoses are predominately older (>35) heterosexual-presenting individuals who are being diagnosed in a hospital setting at stage 3. Network interviews revealed several individuals participate in group sex and/or partner sharing. BHSP has encouraged and supported testing increases in the region, however many individuals likely remain undiagnosed.



The 2020 diagnosis rate was removed from the graph for clarity. While this year was excluded from all trends assessments, it is still pictured on all other slides. Here, the 2020 rate was so low, it made it difficult to visualize the overall trend, so it is not pictured.

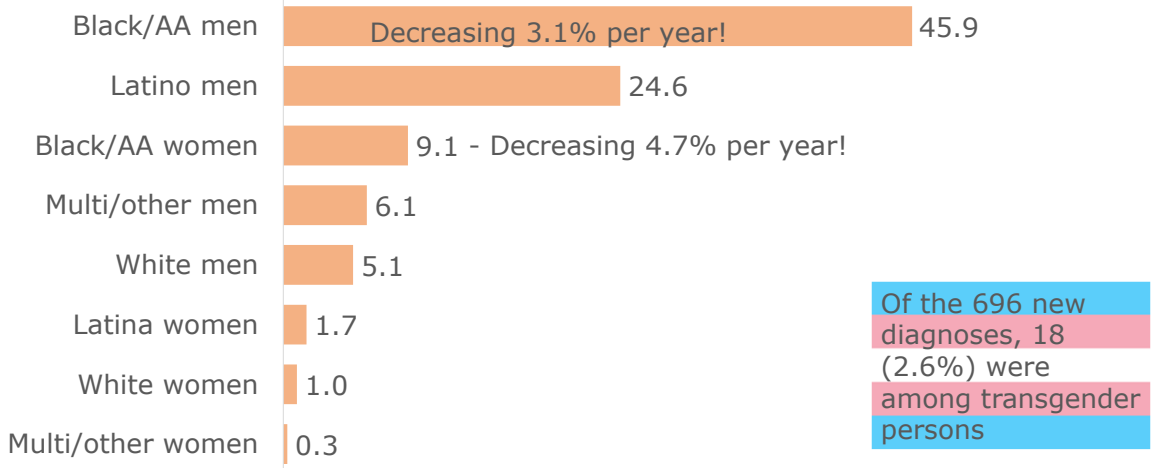
Notes on counties and LHD jurisdictions in Southwest Michigan:

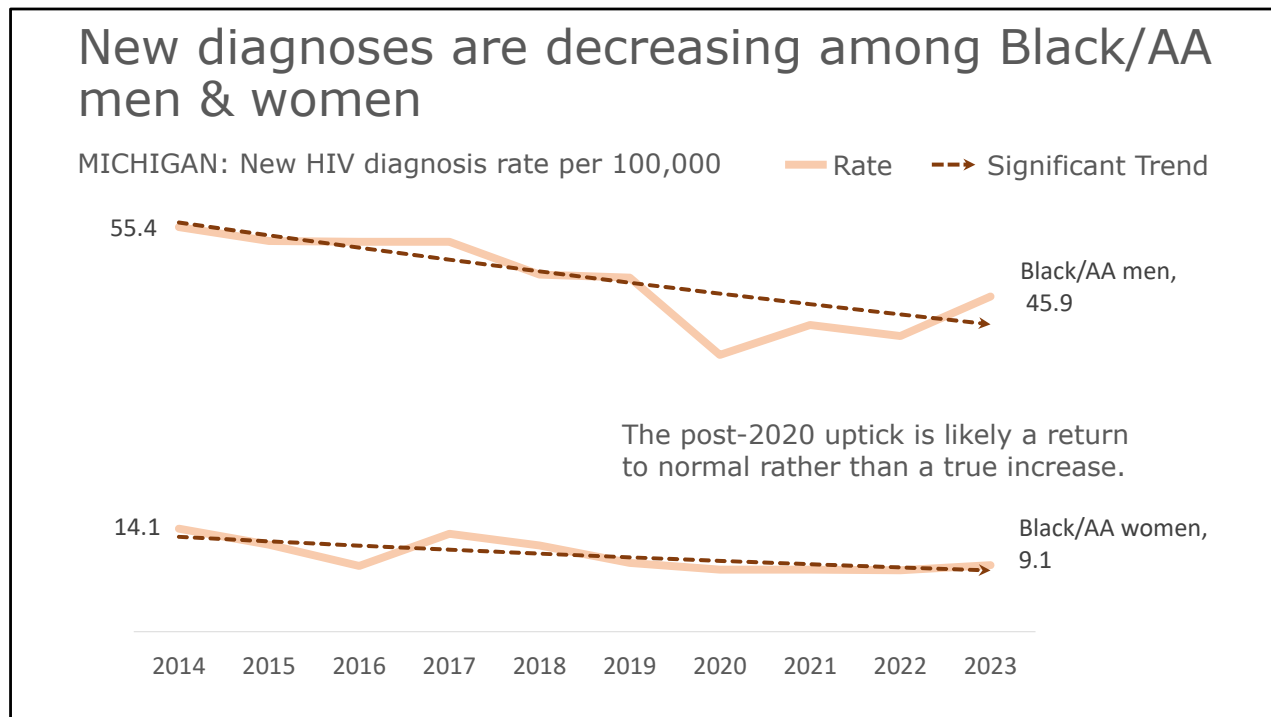
- **Allegan & Ottawa Counties:** The 2014-2023 trend was not significantly different than zero, but the area will continue to be monitored. The average annual new diagnosis rate has nearly doubled since the early 2010's with unusually high diagnoses in 2015, 2017, and 2022. Diagnoses are not confined to any particular city within the counties.
- **Barry-Eaton:** An increase of diagnoses since 2021 (primarily among Lansing residents in Eaton county) is driving the 9.8% increase per year in this jurisdiction. This jurisdiction had an average of 3.8 diagnoses per year 2015-2019; 2 diagnoses in 2020; an average of 9 diagnoses per year 2021-2023 (more than double the pre-2020 average).
- **Van Buren Cass:** While no significant change, diagnoses have increased, and some newly diagnosed individuals were identified as part of a recent and rapidly growing transmission network.
- **Branch-Hillsdale-St. Joseph LHD** had a significant increase of 14.1% per year, and some newly diagnosed individuals were identified as part of a recent and rapidly growing transmission network.
- **Battle Creek** increased 7.0% per year. The increase was not observed in Calhoun County as a whole.
- **Kalamazoo County:** while no significant trend was observed, cases are trending upwards, and Kalamazoo has the 3rd highest rate 2021-2023 behind Detroit LHD and Lake Co (see slide 6).

Demographic Trends

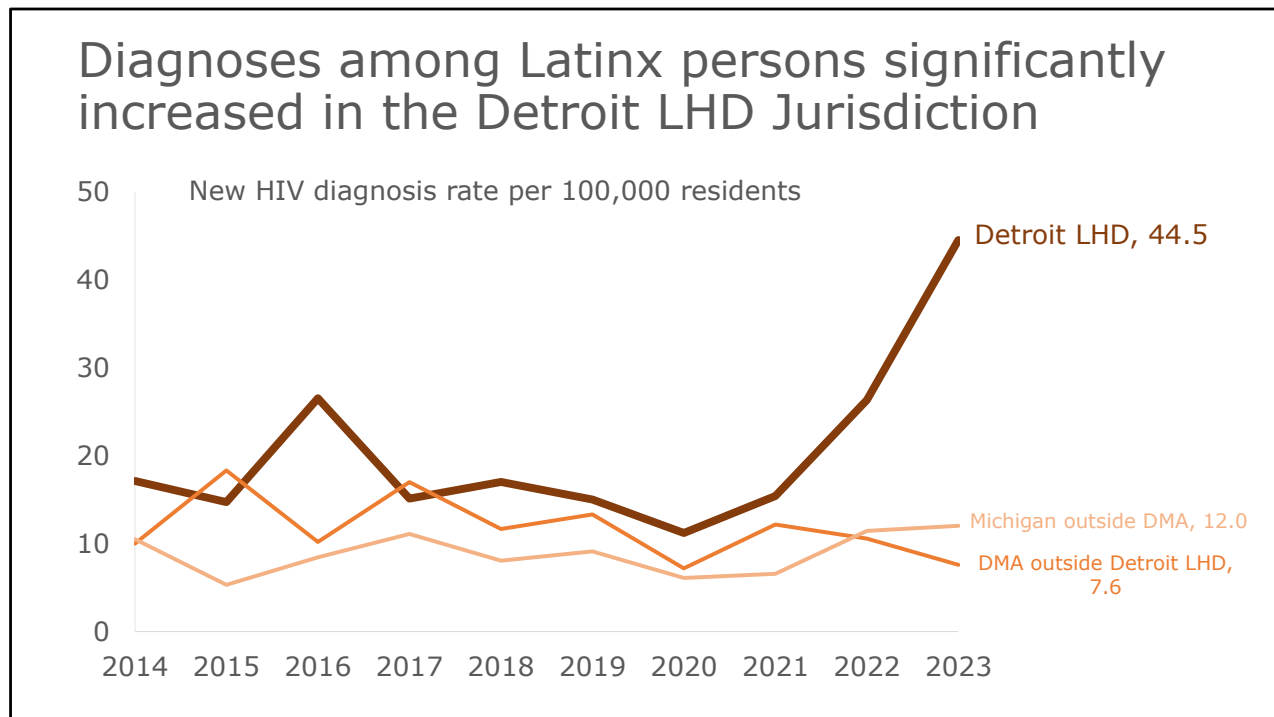
Black/AA men are most affected by HIV

MICHIGAN: New HIV diagnosis rate per 100,000 by race and sex assumed at birth, 2023





- The new diagnosis rate among Black/AA men significantly decreased by 3.1% per year.
- The new diagnosis rate among Black/AA women significantly decreased by 4.7% per year.
- No significant trends were observed among white, Latinx, or persons of other races statewide.

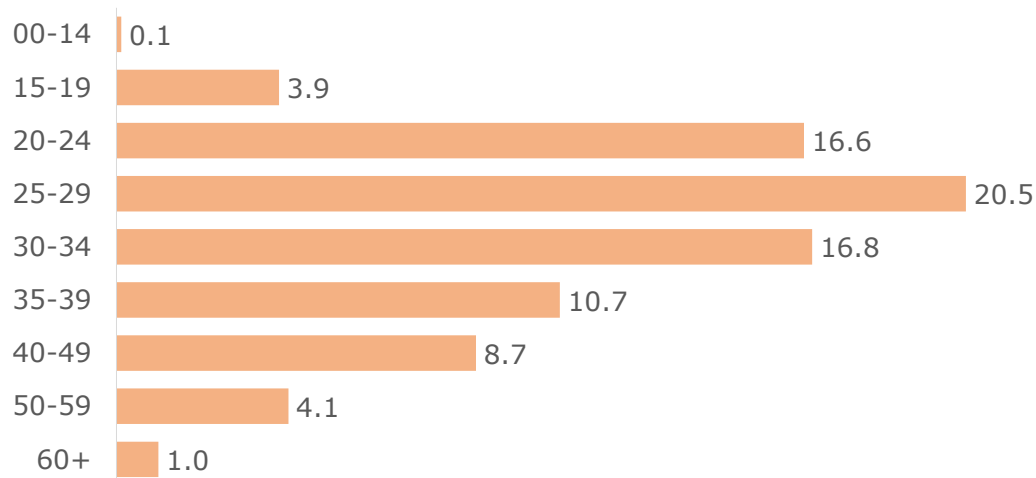


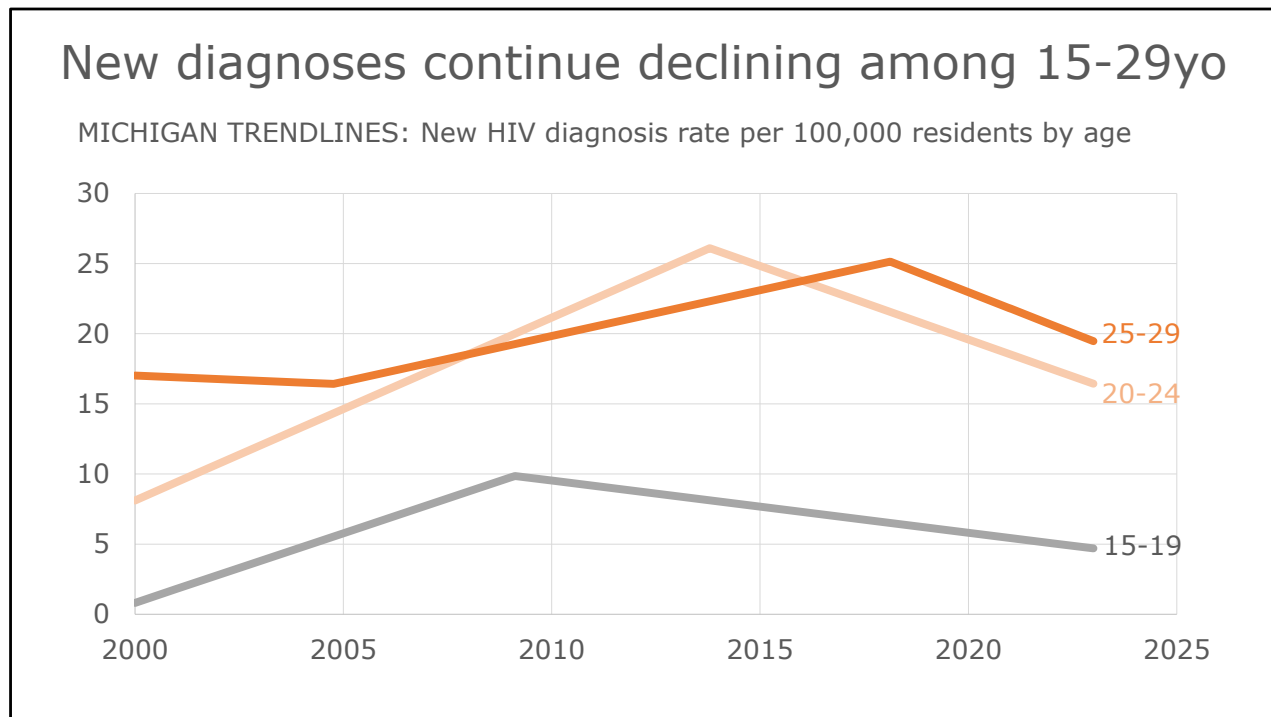
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The significant increase among Latinx persons are among men and women residing primarily west of Woodward. The increases are not confined to Southwest Detroit.

High diagnosis rates among 20-34 yr olds

MICHIGAN: New HIV diagnosis rate per 100,000 by age, 2023



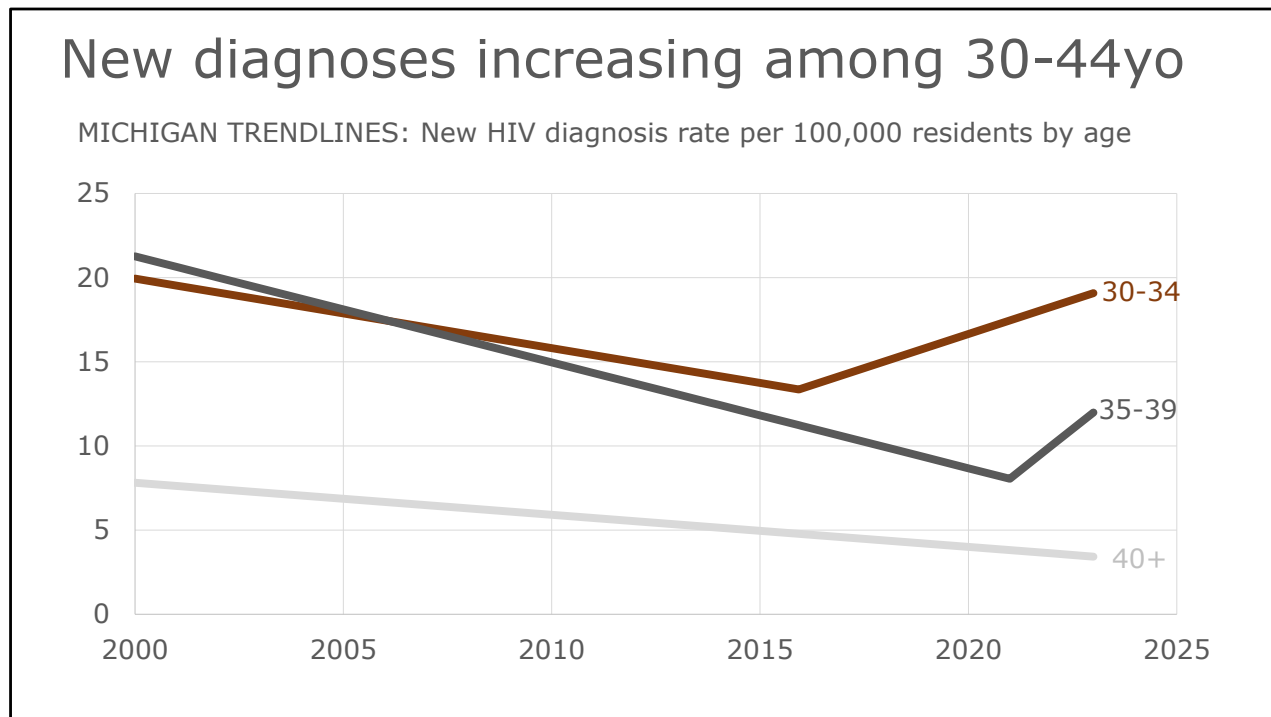


Over the past two decades trends among multiple age groups have changed.

- 15-19 year olds: Historically, HIV was virtually non-existent in this group. Diagnoses steadily rose from 2000-2008 and have slowly declined since.
- 20-24 year olds: new diagnoses rose 2000-2014. Since 2014, new diagnoses have steadily decreased.
- 25-29 year olds: new diagnoses rose 2007- 2017 (trendline rises at 2005), then began declining in 2018.

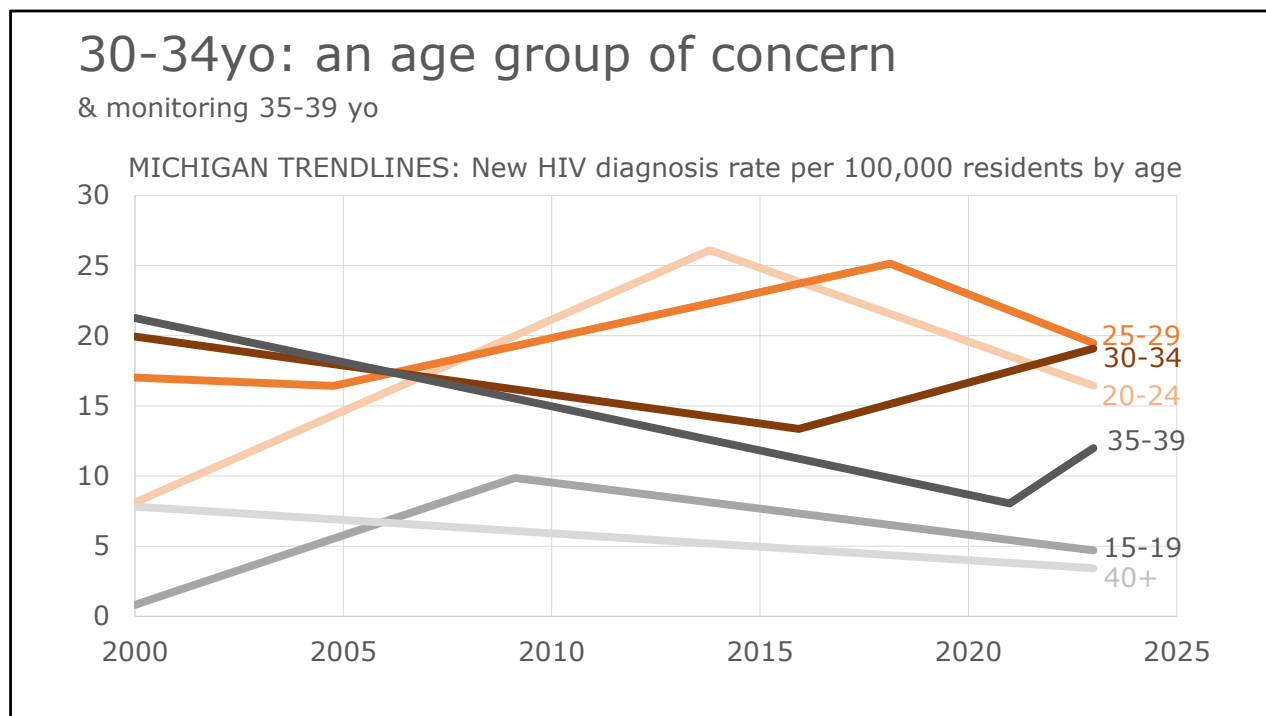
As shown in the previous slide, 20-29 year olds remain an age group of concern as they still experience the highest diagnosis rates.

Statistically significant declines were observed in all 3 of these age groups between 2014 and 2023, however the above graph better depicts the shift in ages than the 10-year trends displayed in this slide deck.



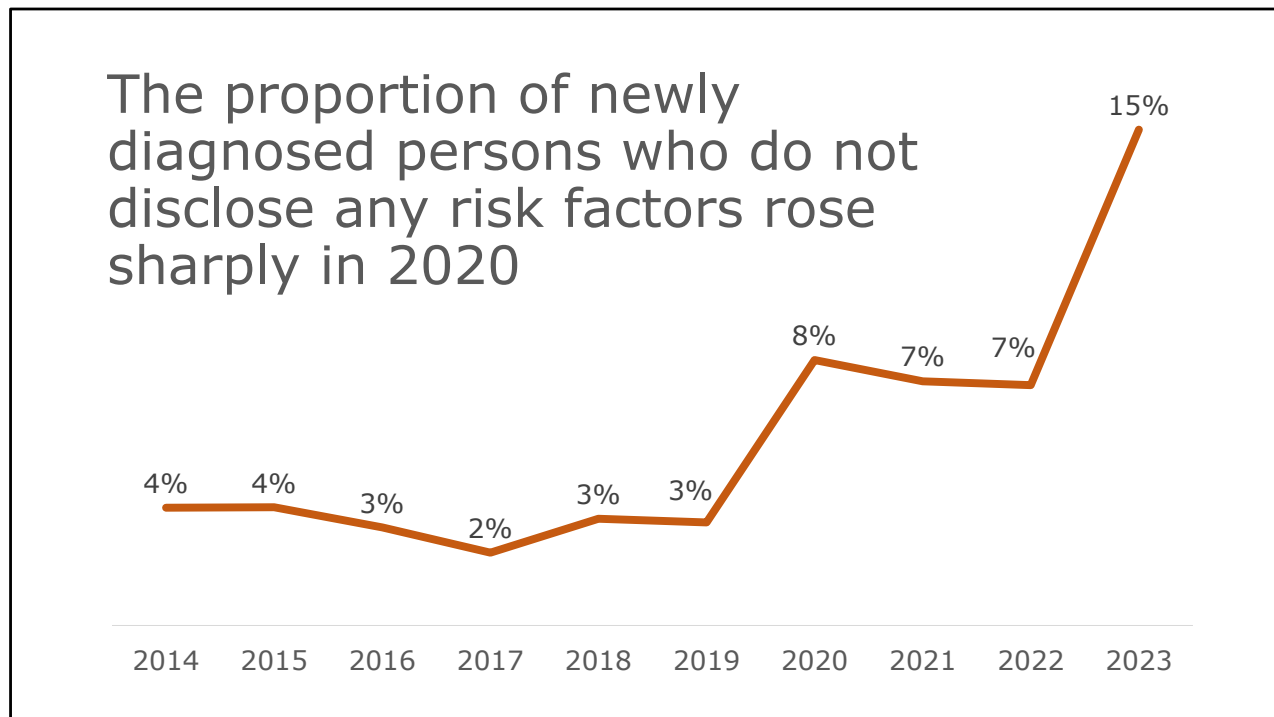
Over the past two decades trends among multiple age groups have changed.

- 30-34 year olds: new diagnoses consistently decreased 2000-2016 before rising sharply. This age group appears to be a group of concern again after nearly two decades of improvement. The 2014-2023 trend was a significant increase.
- In 2023, the rate of new diagnoses among 35-39 year olds increase 40% compared to the previous year. The new diagnosis rate for this age group did not drop in 2020, so the recent increase was not due to diagnosing individuals missed during 2020.
- 40+ have declined steadily or plateaued since 2000.



Over the past two decades trends among multiple age groups have changed.

- After several years of increases, HIV is steadily declining among 15-29 year olds. However, 20-29 year olds remain a priority given the high rate of new diagnoses.
- The increased rate among 30-34 year olds is concerning, and the increase during 2023 among 35-39 will be closely monitored.



Before 2020, the likely reason for HIV transmission (a.k.a. risk) was monitored for changes. Unfortunately, since 2020, this information is disclosed less frequently to providers and to Partner Services (PS). Additionally, the time it takes to obtain reason for transmission is getting longer. This greatly hinders real-time morbidity monitoring and response efforts among risk-based groups such as persons who inject drugs.

Note: In addition to the proportion of newly diagnosed persons who do not disclose any risk factors (shown above), 13% of newly diagnosed persons do not disclose a risk that meets the threshold for likely mode of transmission (e.g. men who only report sex with women – often reporting sex with only one monogamous female partner who is HIV negative). The proportion of newly diagnosed persons who fall into this group has not changed over the years.



For STI or HIV Data Requests or
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