The Lingering Impact of COVID-19 Disruptions on HIV Diagnoses: Lower than Expected Rebound in Identifying New Diagnoses, Georgia, 2021

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Introduction

Background:

- Georgia has one of the highest HIV diagnosis rates in the United States (U.S.), and in 2019, ranked 2nd after the District of Columbia (1).
- While HIV diagnoses have steadily declined in the U.S. and Georgia over the past decade (2,3), COVID-19-related healthcare disruptions were likely a major contributor to the unprecedented decrease in HIV diagnoses seen in 2020 (i.e., excess missed diagnoses) (4).
- It is unlikely that the 2020 decrease was solely due to a reduction in HIV transmission (e.g., fewer sexual partners) (4), especially considering other sexually transmitted infections, such as primary syphilis, increased in Georgia in 2020 (5).
- National studies suggest decreased access to HIV testing services in 2020 substantially contributed to the observed decrease (4,6).
- Monitoring the impact of COVID-19-related disruptions on HIV diagnoses over time is critical for informing testing and care strategies (4,6).

Research Aims:

- This analysis 1) examined whether HIV diagnoses in Georgia in 2021 rebounded to make up for the excess missed diagnoses in 2020, and 2) identified whether there were differences in the rebound by subpopulation.

Methods

Data Source:

- Georgia's 2015–2021 enhanced HIV/AIDS Reporting System data (annual HIV diagnosis counts).

Statistical Methods:

- We fit a negative binomial regression model to observed yearly HIV diagnosis counts from 2015–2019 (8).
- Using the regression model, we estimated the diagnosis counts for 2020 and 2021 if pre-pandemic trends from 2015–2019 were to have continued. We set a 95% confidence interval for the regression model and added predictions intervals to display margin of error.

Data Analyses:

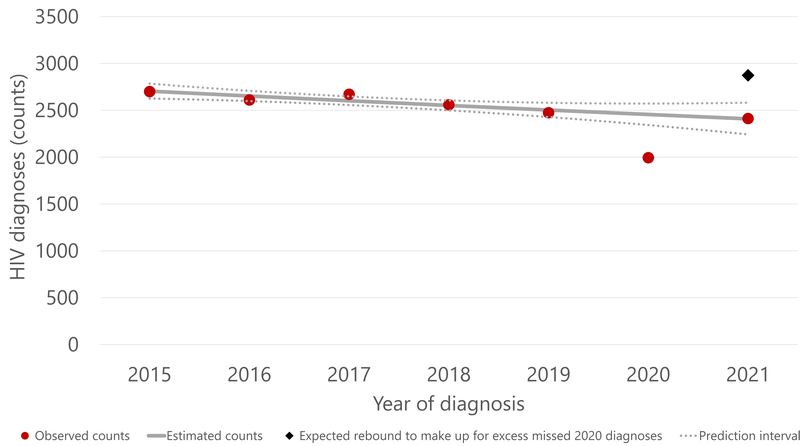
- We assessed the difference between the model-estimated vs. observed number of HIV diagnoses in 2020 and 2021 to determine whether 2021 diagnoses made up for the excess missed diagnoses in 2020 (i.e., rebounded).
- To identify potential disparities in rebound diagnoses within subgroups, we compared the distribution of diagnoses in 2019 to 2021 by gender identity, HIV transmission category, race/ethnicity, age group, geography, and CD4 count. Differences were tested using the two-proportion z-test (alpha=0.05).

Results

Estimated vs. Observed HIV Diagnosis Counts, 2015–2021, GA

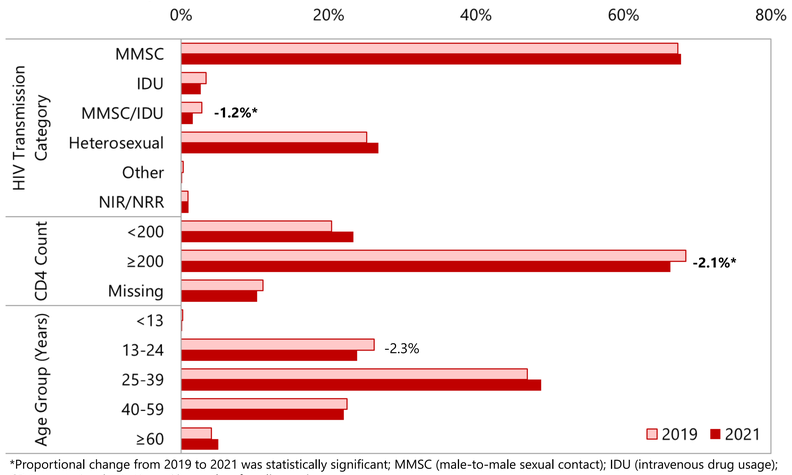
- Using the fitted regression model, estimated HIV diagnoses in Georgia decreased by 1.9% on a yearly basis from 2015–2019 (Fig. 1).
- In 2020, HIV diagnoses were 18.8% lower than estimated given pre-pandemic trends (estimated: 2,456 cases; observed: 1,994 cases; difference: -462 cases) (Fig. 1).
- In 2021, HIV diagnoses returned to estimated levels (estimated: 2,409 cases; observed: 2,412 cases; difference: +3 cases), but did not fully rebound to make up for excess missed diagnoses in 2020) (Fig. 1).

Figure 1. HIV diagnoses (estimated and observed counts) with prediction intervals, 2015–2021, GA



Proportional Differences in Rebound by Subgroup, 2019 & 2021, GA

Figure 2. Select demographic characteristics of people newly diagnosed with HIV (observed proportions), 2019 & 2021, GA



*Proportional change from 2019 to 2021 was statistically significant; MMSC (male-to-male sexual contact); IDU (intravenous drug usage); CD4 counts (copies/mL) are 12 months after diagnosis

Discussion

Primary Analysis

- In comparison to model-estimated trends, HIV diagnoses decreased below estimated counts in 2020, but returned to estimated counts in 2021.
- However, given that 2021 diagnoses did not rebound to make up for 2020 excess missed diagnoses (n=462), this suggests that many individuals may still be undiagnosed due COVID-19-related healthcare disruptions.

Subgroup Analysis

- When assessing which subgroups experienced lower rebound, we found that those with an HIV transmission category of MMSC/IDU and those with a higher CD4 count (which indicates less severe symptoms) made up a lower proportion of HIV diagnoses in 2021 compared to 2019.
  - This suggests that these groups may have received fewer HIV tests in 2021 and may need additional public health resources.
- While the proportional decrease for 13–24-year-olds was not statistically significant, it was one of the largest decreases in our analysis. Diagnoses noticeably decreased in this group from 2019–2020 (7), indicating that they may need further public health services.

Conclusion

- Because the South had the most excess missed HIV diagnoses in the U.S. in 2020 (4), it is critical for Georgia DPH to continue monitoring the lingering impact of COVID-19-related disruptions on HIV diagnoses.
- Meeting the goals of the national Ending the HIV Epidemic Initiative may require adjusting HIV testing efforts to fill these gaps.

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