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COVID-19-related Shutdowns and Viral Suppression in the US and Canada

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BACKGROUND

COVID-19 disrupted in-person HIV care and increased telemedicine visits across North America in 2020. We examined the frequency of HIV care encounters and HIV RNA measurements and correlates of those with unsuppressed HIV RNA among people with HIV (PWH) during and after COVID-19 shutdowns in the NA-ACCORD, the largest cohort collaboration of PWH linked to care in the US and Canada.

METHODS

Calendar time periods:

- Before shutdowns: 1 Sept 2018 – Feb 29, 2020
- Pandemic shutdowns: 1 Mar 2020 – 31 May 2020
- After shutdowns: 1 June 2020 – 31 Dec 2021

Study populations: Patients (≥18yo) in clinical cohorts who were:

- *In HIV care prior to the pandemic:* ≥1 HIV care encounter before pandemic shutdowns
- *Re-engaged in HIV care during shutdowns:* no HIV care encounters since before 1 Sept 2018 and ≥1 HIV care encounter during pandemic shutdowns
- *New to HIV care during shutdowns:* no known prior encounters and ≥1 HIV care encounter during pandemic shutdowns

Outcomes:

- *HIV care encounters:* In-person or telemedicine (phone/video)
- *HIV RNA:* Suppressed (≤50 copies/mL) and unsuppressed (>50 copies/mL)

Statistical Analyses: We estimated the proportion of PWH in HIV care prior to the pandemic who did not return to HIV care as of 31 Dec 2021. Number of HIV care encounters (in-person or telemedicine) and number of HIV RNA tests were calculated per month from Jan 2019 through Dec 2021 to examine engagement in HIV care during and after pandemic shutdowns. We estimated the median (interquartile range [IQR]) of time between HIV care encounters before and after shutdowns. Logistic regression models with generalized estimating equations (for repeated HIV RNA measurements per individual) were used to estimate correlates of unsuppressed HIV RNA after shutdowns, stratified by those in HIV care prior to the pandemic shutdowns and those re-engaging or new to HIV care during pandemic shut-downs.

***Among adults in HIV care prior to the pandemic,* 1) half were connected to HIV care during pandemic-related shutdowns (March–May 2020), 2) >80% were virally suppressed after shutdowns, and 3) post-pandemic shut-down frequency of HIV care encounters / viral load measurements resumed to pre-pandemic frequency. *Among adults re-engaging and new to HIV care during the pandemic*, 86% of HIV RNA measurements were suppressed approximately 3 months after shutdowns ended.**

RESULTS

PWH *in HIV care prior the pandemic* (N=34,722):

- 11% did not return to care as of 31 Dec 2021
- 51% received care during shutdowns
- Median [IQR] days, before vs. after shutdowns:
  - between care encounters: 109 [41-182] vs. 116 [40-182]
  - Between HIV RNA tests: 163 [105-203] vs. 182 [122-223]

PWH *re-engaged* (n=245) or *new* (n=323) to HIV care during the pandemic shutdowns (N=568)

- HIV RNA suppression was 42% in April 2020 (n=131 HIV RNA tests) and 86% in August 2020 (n=80 HIV RNA tests)

PWH *re-engaged* (n=245) or *new* (n=323) to HIV care during the pandemic shutdowns **vs.** *in HIV care prior to the pandemic*:

- Median age: 40.7 [IQR30.9-51.8] vs. 49.7 [38.5-57.6] years
- Black: 41% vs. 38%
- Not initiated ART: 21% vs. 2%.

FIGURE: Number of HIV care encounters and HIV RNA measurements among people with HIV a) engaged in HIV care prior to the pandemic (N=34,722) and b) new to or re-engaging in HIV care (N=568) during pandemic shutdowns (*yellow shading*) Mar 2020 – Dec 2021

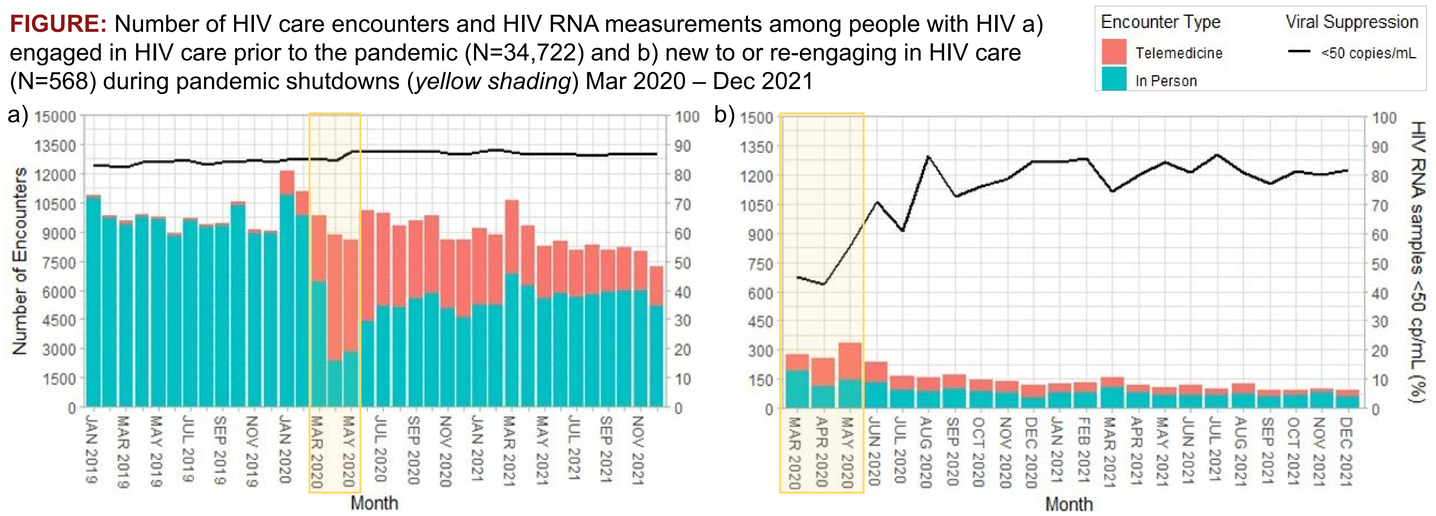

TABLE: PWH with CD4 <500 cells/mm^3 had a greater adjusted odds of unsuppressed (≥50 copies/mL) occurring after COVID-19 shutdowns (July 2020-Dec 2021), and the magnitude of this relationship was larger in those re-engaging or new to HIV care vs. among those in HIV care prior to the pandemic (N=78,363 viral loads from N=27,844 individuals).

Adjusted Odds Ratio (95% CI) of unsuppressed HIV RNA occurring after COVID-19 shutdowns (July 2020-Dec 2021) for the interaction of HIV care engagement and CD4 count

In HIV care prior to pandemic and		Re-engaging or new to care during shutdowns and	
CD4 <200	**6.67 (6.02, 7.39)**	CD4 <200	**7.95 (5.35, 11.82)**
CD4 200-499	**1.98 (1.85, 2.11)**	CD4 200-499	**2.89 (2.00, 4.18)**
CD4 ≥500	*Reference*	CD4 ≥500	0.80 (0.51, 1.26)
missing CD4	0.87 (0.69, 1.09)	missing CD4	**2.29 (1.58, 3.20)**

Adjusted for decade of age, gender, race and ethnicity, HIV acquisition risk category.

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