Impact of COVID-19 Healthcare Disruptions on ART Initiation and Viral Suppression – US, 2018-2021

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Although COVID-19 resulted in disruption in HIV clinical care (comparing 2020 vs. 2018 and 2019), levels of early ART initiation (within 30 days of entry in care) and viral suppression within 6 months of ART initiation were similar to pre-COVID levels by 2021, suggesting a successful recovery of HIV clinical care services.

BACKGROUND

Rapidly initiating antiretroviral therapy (ART) and achieving viral suppression (VS) among newly diagnosed people with HIV (PWH) are cornerstones of HIV care. **In 2020, COVID-19 caused far-reaching disruptions in health services**, including for HIV treatment and laboratory monitoring. We characterized trends in early ART (eART) and early VS (eVS) among PWH before and during the COVID-19 pandemic to assess the potential impact of these disruptions.

METHODS

Study population:

- *Adults:* patients ≥ 18 years old enrolled in one of 13 NA-ACCORD clinical cohorts in the US
- *New to HIV care:* no prior ART use, no prior viral suppression, no prior AIDS defining illness ≥6 months before enrollment, no prior CD4 or VL testing ≥1 month before enrollment
- *Complete data:* CD4 and VL result +/- 30 days from entry in to care
- *Sufficient follow-up time*: At least 30 days follow-up for ART initiation and at least one VL measured within 180 days after ART initiation

Outcomes:

- *Early ART (eART):* ART initiated ≤ 30 days after entry into care
- *Early VS (eVS):* Suppressed (≤200 copies/mL) ≤ 180 days after ART start

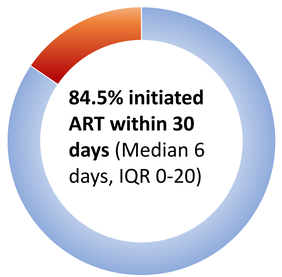
Statistical Analyses:

- We followed PWH until ART initiation, viral suppression (VS), cohort close date, study end, or death
- Kaplan-Meier survival function was used to estimate cumulative incidence of eART (from entry to HIV care) and eVS (from ART initiation), stratified by calendar year of entry into care
- We examined factors associated with timing of ART and VS using Cox models to calculate adjusted hazard ratios and 95% confidence intervals
- Models were adjusted for age, calendar year of entry into care, race/ethnicity, sex, HIV risk group, CD4 cell count, viral load, diagnosed alcohol or substance use disorders, and mental illness at entry

RESULTS

Among the **overall cohort of 3,184 PWH** newly entering HIV care during 2018-2021:

- 76.9% age < 50 years old
- 51% Black, 28% White, 14% Hispanic
- 38% men who have sex with men (MSM)
- 54% lived in the South, 7% in Northeast



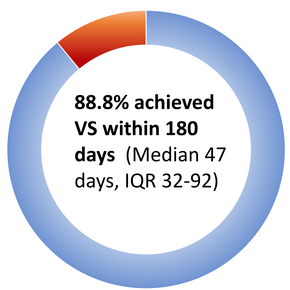


Figure: Cumulative incidence of (a) ART initiation ≤30 days of entry to care (N=3,184) and (b) viral suppression ≤180 days after ART initiation (N=2,758) among PWH newly entering HIV care, by calendar year (2018–2021)

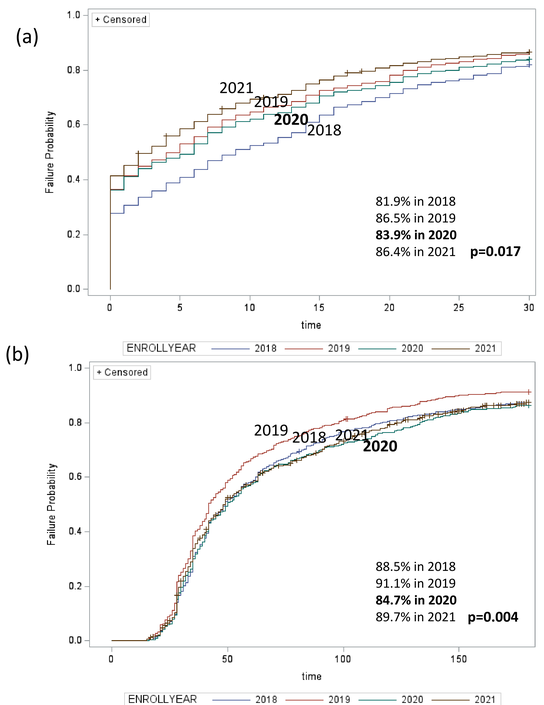


Table: Adjusted Hazard Ratio (95% CI) of ART initiation and viral suppression among PWH newly entering care, 2018–2021

ART initiation	aHR (95 CI)	Viral suppression	aHR (95 CI)
Year: 2018	*Reference*	Year: 2018	*Reference*
2019	**1.27 (1.15, 1.40)**	2019	1.21 (0.96, 1.52)
2020	**1.15 (1.02, 1.28)**	2020	0.95 (0.84, 1.07)
2021	**1.38 (1.24, 1.55)**	2021	0.99 (0.88, 1.12)
Region: Northeast	*Reference*	Region: Northeast	*Reference*
Midwest	0.82 (0.66, 1.02)	Midwest	1.21 (0.96, 1.52)
South	**0.73 (0.62, 0.85)**	South	1.13 (0.96, 1.34)
West	**0.84 (0.71, 0.99)**	West	**1.28 (1.07, 1.52)**
Age: 18-29	*Reference*	HIV risk: MSM	*Reference*
30-39	1.0 (0.90, 1.11)	Heterosexual	0.98 (0.86, 1.12)
40-49	0.96 (0.85, 1.09)	PWID	**0.70 (0.55, 0.89)**
50-59	0.89 (0.78, 1.02)	Other	**0.81 (0.73, 0.91)**
≥60	**0.85 (0.73, 0.99)**	CD4 count†: ≥500	*Reference*
Viral load*: 501-9,999	*Reference*	350-499	**0.88 (0.78, 0.99)**
10,0000-99,999	1.03 (0.92, 1.15)	200-349	0.89 (0.79, 1.01)
≥100,000	**1.19 (1.06, 1.34)**	0-199	**0.72 (0.64, 0.82)**
Substance use: yes	**1.21 (1.08, 1.35)**	Substance use: yes	0.91 (0.79, 1.05)

** Viral load measured in copies per mL. †CD4 count measured in cells/mm³. Model adjusted for age, sex, race and ethnicity, HIV acquisition risk, CD4 cell count, viral load, alcohol and substance use disorders, mental illness at entry, and calendar year*

CONCLUSIONS

- Progress observed between 2018 to 2019 in timely ART initiation and timely viral suppression *slowed* during the COVID-19 pandemic in 2020
- By 2021, timely ART initiation was *recovering* but this was not observed for viral suppression
- Gaps remain for PWH living in the Southern and Western US, older adults, people who inject drugs (PWID), those with high VL, and CD4 count <200

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