Uptake of 3+ COVID-19 Vaccine Doses among People Living with HIV in Ontario, Canada

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BACKGROUND

In Canada, important socio-demographic differences exist between males and females living with HIV which may impact uptake of COVID-19 vaccines. While most people living with HIV were recommended to receive a 2-dose primary series, a 3-dose primary series was recommended for moderately/severely immunocompromised individuals including people living with HIV with AIDS-defining illness, recent TB diagnosis, CD4 count <200 cells/uL, or not virally suppressed. Using a population-based approach, we examined uptake of 3+ COVID-19 vaccine doses among people living with HIV in Ontario, Canada.

METHODS

Community-dwelling adults living with HIV aged ≥19 years were identified using a validated algorithm based on physician billing claims for HIV diagnoses in the past 3 years. Data on COVID-19 vaccine doses and administration dates were ascertained from the Ontario COVID-19 vaccine registry (COVaxON) from December 14, 2020, the date of COVID-19 vaccine rollout in Ontario, to August 31, 2022. We used a modified Poisson regression with robust standard errors accounting for geographic clustering to calculate factors associated with 3+ COVID-19 vaccine dose uptake, and report these as adjusted risk ratios and 95% confidence intervals overall and stratified by sex.

Nearly two thirds of people living with HIV received at least 3 doses of a COVID-19 vaccine, yet important disparities in uptake remain, especially by sex. Further exploration of these disparities is critical for informing prevention efforts and clinical immunization guidelines.

CONCLUSIONS

Among people living with HIV, 68% of men vs 51% of women received at least 3 doses of a COVID-19 vaccine. Further exploration of differences in social determinants of health between men and women living with HIV is needed. Continued monitoring of COVID-19 vaccine uptake for people living with HIV is critical to inform prevention efforts and clinical immunization guidelines.

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RESULTS

Table 1. Baseline Characteristics

HIV Cohort (n= 20,825)	
Male sex, %	79
Median age, years (interquartile range)	51 (40-59)
Born in Canada, %	73
Live in an urban region, %	59
≥1 COVID test in 3 months prior to vaccine rollout, %	17
≥1 influenza vaccine in the past 2 seasons, %	46
Any comorbidity[1], %	55

Figure 1. COVID-19 Vaccine Uptake by Dose and Sex among People Living with HIV as of August 31, 2022.

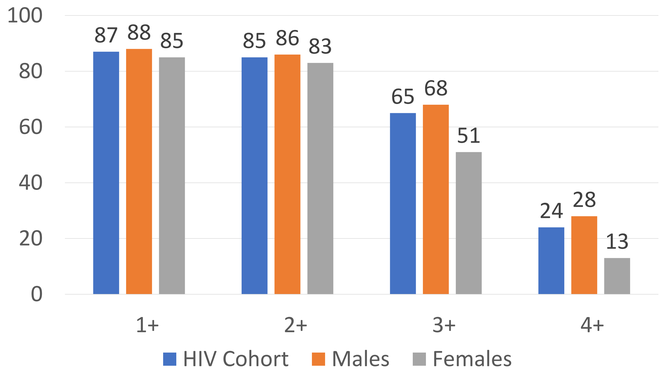


Figure 2. COVID-19 Vaccine Product Received for the Initial 3 Doses among People Living with HIV

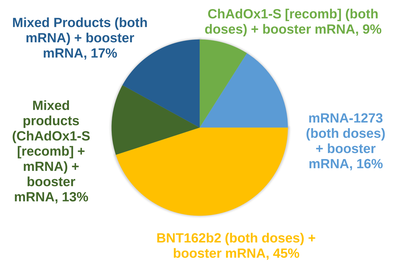


Figure 3. COVID-19 Vaccine Uptake among Men Living with HIV

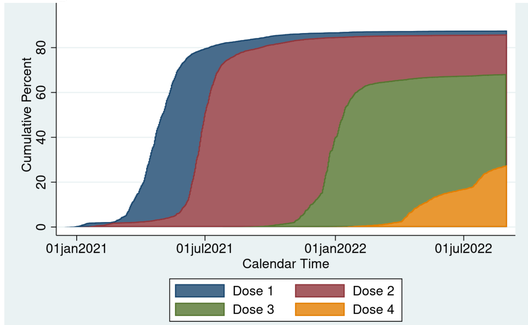


Figure 4. COVID-19 Vaccine Uptake among Women Living with HIV

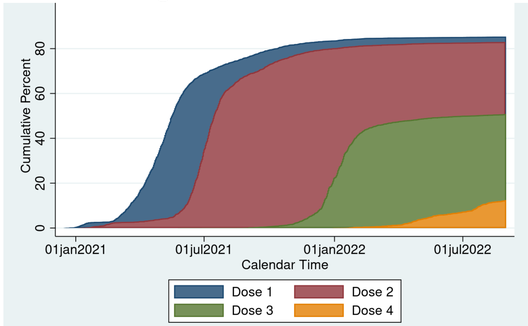


Table 2. Adjusted Risk Ratios of Receiving 3+ Doses of a COVID-19 vaccine (compared with only 2 doses) among People Living with HIV, Stratified by Sex

	Total Cohort* (n=20,825)	Males only* (n=16,360)	Females only* (n=4,465)
Sex (Male) Reference: Female	1.19 (1.16, 1.22)	n/a	n/a
Age (≥65 years) Reference: <65 years	1.10 1.08, 1.11)	1.08 (1.06, 1.09)	1.22 (1.15, 1.28)
Not born in Canada Reference: Born in Canada	0.91 (0.89, 0.93)	0.92 (0.90, 0.94)	0.90 (0.85, 0.95)
Geography (Urban) Reference: Rural	1.04 (1.02, 1.07)	1.04 (1.01, 1.07)	1.07 (1.00, 1.14)
≥1 COVID-19 test in 3 months prior to vaccine rollout Reference: None	1.03 (1.01, 1.06)	1.01 (0.98, 1.03)	1.16 (1.10, 1.23)
≥1 influenza vaccine in the past 2 seasons Reference: None	1.29 (1.27, 1.32)	1.26 (1.23, 1.28)	1.46 (1.39, 1.54)
Any comorbidity[1] Reference: None	1.03 (1.01, 1.04)	1.02 (1.01, 1.04)	1.04 (0.99, 1.10)

*Models additionally adjusted for neighbourhood-level variables including essential workers quintile, persons per dwelling quintile, self-identify as a visible minority quintile, neighbourhood income quintile. [1]Comorbidities include chronic respiratory disease, chronic heart disease, hypertension, diabetes, chronic kidney disease/dialysis, frailty/dementia, autoimmune disorders, advanced liver disease, history of stroke or transient ischemic attack.