

# Attrition Across the HIV Cascade of Care Among a Diverse Cohort of Women Living with HIV in Canada

Geneviève Kerkerian<sup>1,2</sup>, Mary Kestler<sup>3,4</sup>, Allison Carter<sup>5,6</sup>, Lu Wang<sup>6</sup>, Paul Sereda<sup>6</sup>, Eric Roth<sup>7</sup>, M-J Milloy<sup>6,8</sup>, Neora Pick<sup>3,4</sup>, Deborah Money<sup>3,4</sup>, Nadine Kronfli<sup>9</sup>, Ashley Lacombe-Duncan<sup>10</sup>, Kath Webster<sup>5</sup>, Marisol Desbiens<sup>11</sup>, Danièle Dubuc<sup>12</sup>, Robert S Hogg<sup>5,6</sup>, Alexandra de Pokomandy<sup>12,13</sup>, Mona Loutfy<sup>11,14</sup>, Angela Kaida<sup>5</sup>, on behalf of the CHIWOS Research Team

<sup>1</sup>University of British Columbia, Faculty of Medicine, Vancouver, Canada, <sup>2</sup>Vancouver Coastal Health Authority, Vancouver, Canada, <sup>3</sup>Oak Tree Clinic, BC Women's Health Centre, Vancouver, Canada, <sup>4</sup>Division of Infectious Diseases, University of British Columbia, Department of Medicine, Vancouver, Canada, <sup>5</sup>Faculty of Health Sciences, Simon Fraser University, Burnaby, Canada, <sup>6</sup>British Columbia Centre for Excellence in HIV/AIDS, Vancouver, Canada, <sup>7</sup>University of Victoria, Victoria, Canada, <sup>8</sup>Division of AIDS, University of British Columbia, Vancouver, Canada, <sup>9</sup>McMaster University, Department of Infectious Diseases, Hamilton, Canada, <sup>10</sup>Factor-Inwentash Faculty of Social Work, University of Toronto, Toronto, Canada, <sup>11</sup>Women's College Research Institute, Women's College Hospital, Toronto, Canada, <sup>12</sup>McGill University, Department of Family Medicine, Montreal, Canada, <sup>13</sup>Chronic Viral Illness Service, McGill University Health Centre, Montreal, Canada, <sup>14</sup>Management and Evaluation, University of Toronto, Department of Medicine and Institute of Health Policy, Toronto, Canada

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## BACKGROUND

In North American settings, women are less likely than men to be engaged across the HIV care cascade. Among Canadian women living with HIV (WLWH), we explored cascade attrition by stage and key sub-populations, and assessed correlates of attrition from 'current antiretroviral therapy (ART) use' to 'viral suppression', towards the goal of understanding which women may be more likely to fall off the cascade and informing the design of better interventions to improve their health.

## METHODS

The **Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS)** is a longitudinal community-based research study of 1,425 WLWH (≥16 years; trans-inclusive) in British Columbia (BC), Ontario (ON), and Québec (QC), Canada. The overall study aims to assess the barriers and facilitators to women's HIV care.



In this analysis:

- We measured the proportion of women engaged in seven nested stages of the care cascade, via self-report (Table 1).
- We examined attrition across stages overall (Figure 1) and by age, ethnicity, housing stability, food security, illicit drug use, and violence (Figures 2-6).
- Among those currently on ART, multivariable logistic regression identified factors associated with not being suppressed.

Table 1. HIV Cascade of Care Definition

Cascade Stage	Definition
<b>Stage 1</b> HIV diagnosed	All CHIWOS participants
<b>Stage 2</b> Linked to HIV care	Among all CHIWOS participants, those who accessed HIV medical care at some point after receiving an HIV diagnosis.
<b>Stage 3</b> Retained in HIV care	Among participants who ever accessed HIV medical care, those who received HIV medical care in the past year.
<b>Stage 4a</b> ART Initiation	Among participants who ever accessed HIV medical care, those who report they have ever taken ART.
<b>Stage 4b</b> Current ART use	Among participants ever on ART, those who report currently taking ART.
<b>Stage 5</b> ART adherence	Among participants currently taking ART, those who report taking ≥ 90% of ART in the past month.
<b>Stage 6</b> Viral suppression	Among participants currently taking ART, those who report their most recent viral load was undetectable (< 50 copies/mL).

Notes: Stage 1, 2, and 3 represent one nested cascade. Stage 1, 2, 4a, 4b, 5, and 6 represent another nested cascade (with 5 and 6 both nested within 4b). An analysis was done to validate VL self-reports against lab data for BC participants (the only province where such linkage is possible). PPV was 94% (95% CI: 89-96) and NPV was 81% (95% CI: 67-92). LR+ was 0.1991 (SE: 0.0636) and LR- was 12.4264 (SE: 3.2312). We conclude that a self-reported measure assessing undetectable VL strongly predicted true viral suppression among a cohort of women with HIV with a high prevalence of laboratory-confirmed viral suppression.

## RESULTS

- We analyzed baseline survey data from 1,425 WLWH enrolled in CHIWOS.

Table 2: Participants Characteristics (n=1,425)

	n(%)
<b>Age, median (IQR)</b>	43 (IQR: 35-50)
<b>Years living with HIV, median (IQR)</b>	11 (IQR: 6-17)
<b>Gender identity</b>	
Woman	1361(96)
Trans woman/Two-spirited/Gender Queer/Other	64(4)
<b>Ethnicity</b>	
Indigenous	318(22)
Caucasian	585(41)
African/Caribbean/Black Canadian	418(29)
Other	104(7)
<b>Province Interview conducted</b>	
BC	356(25)
ON	713(50)
QC	356(25)
<b>Age at interview date (years)</b>	
16-29	137(10)
30-39	432(30)
40-49	457(32)
50+	399(28)
<b>Housing</b>	
Stable	1273(89)
Unstable	152(11)
<b>Personal gross yearly income</b>	
<=\$20,000	1001(72)
>=\$20000	389(28)
<b>Food security</b>	
Food secure	510(36)
Food insecure	908(64)
<b>History of violence as adult</b>	
In the past 3 months	287(22)
Ever but not in the past 3 months	769(58)
Never	258(20)
<b>Illicit drug use history</b>	
Current	257(18)
Not currently but previously	387(28)
Never	753(54)
<b>Injection drug use history (IDU)</b>	
Currently IDU	123(9)
Not currently but previously IDU	316(23)
Never IDU	959(69)

## RESULTS (CONTINUED)

Fig. 1. Estimated HIV Cascade of Care Overall Results (n= 1.425)

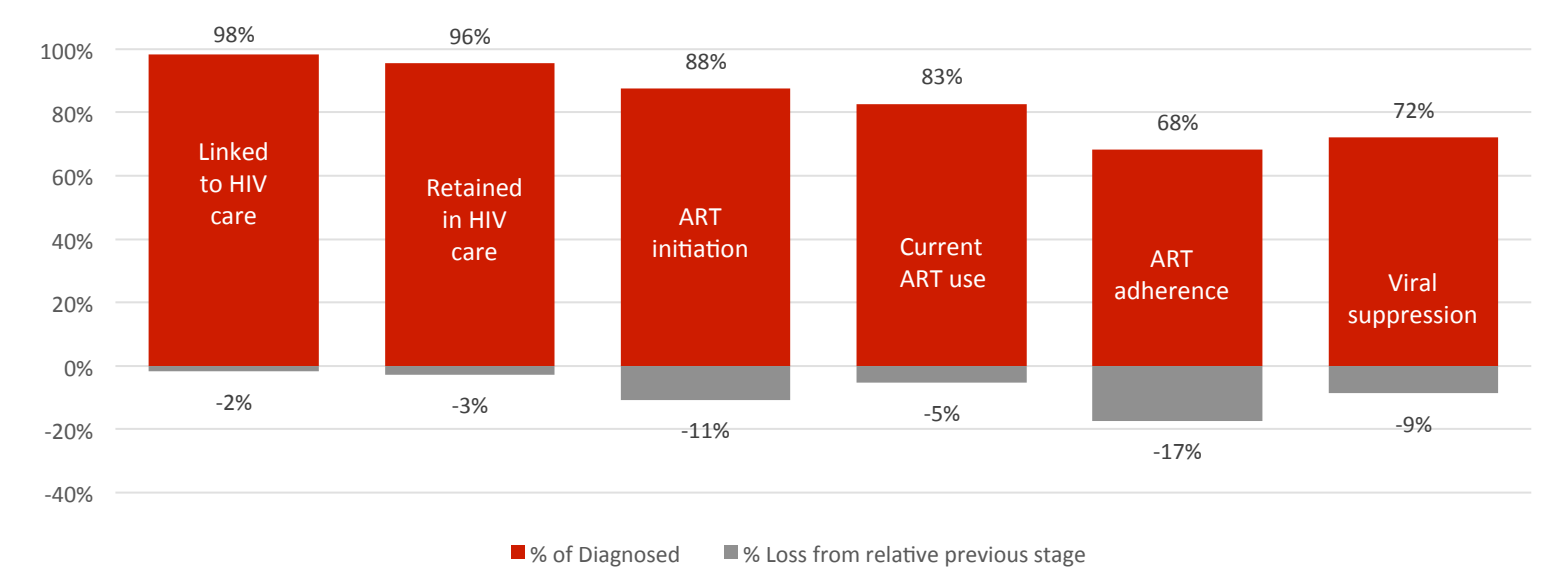


Fig. 2. Cascade of Care Results for Different Age groups

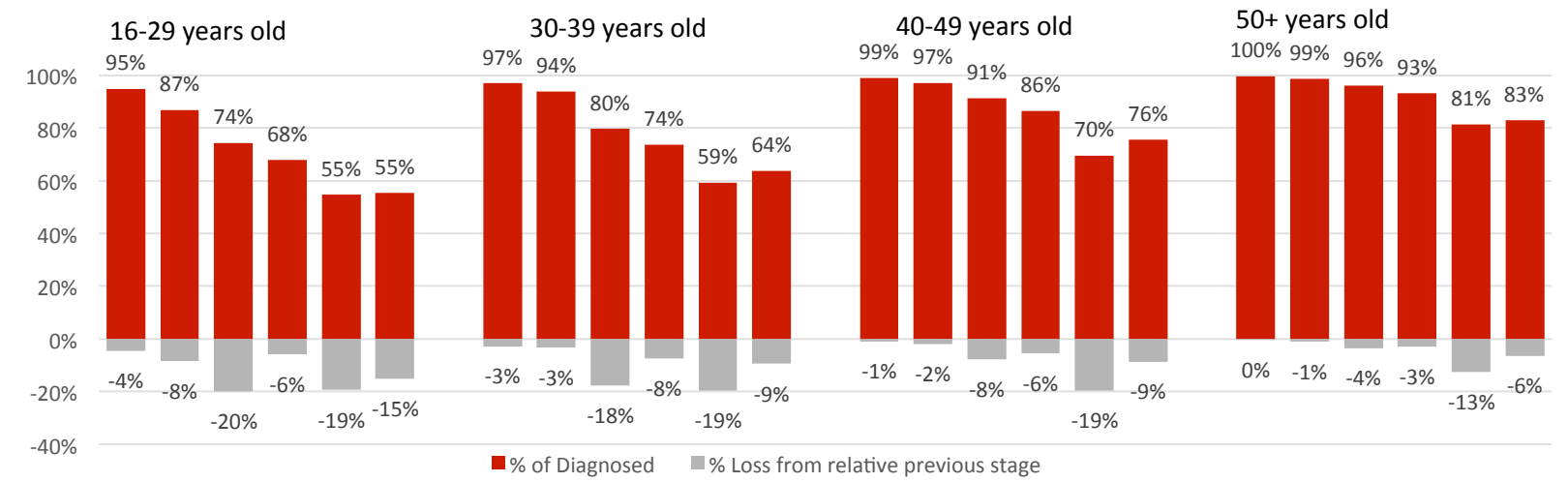


Fig. 3. Ethnicity

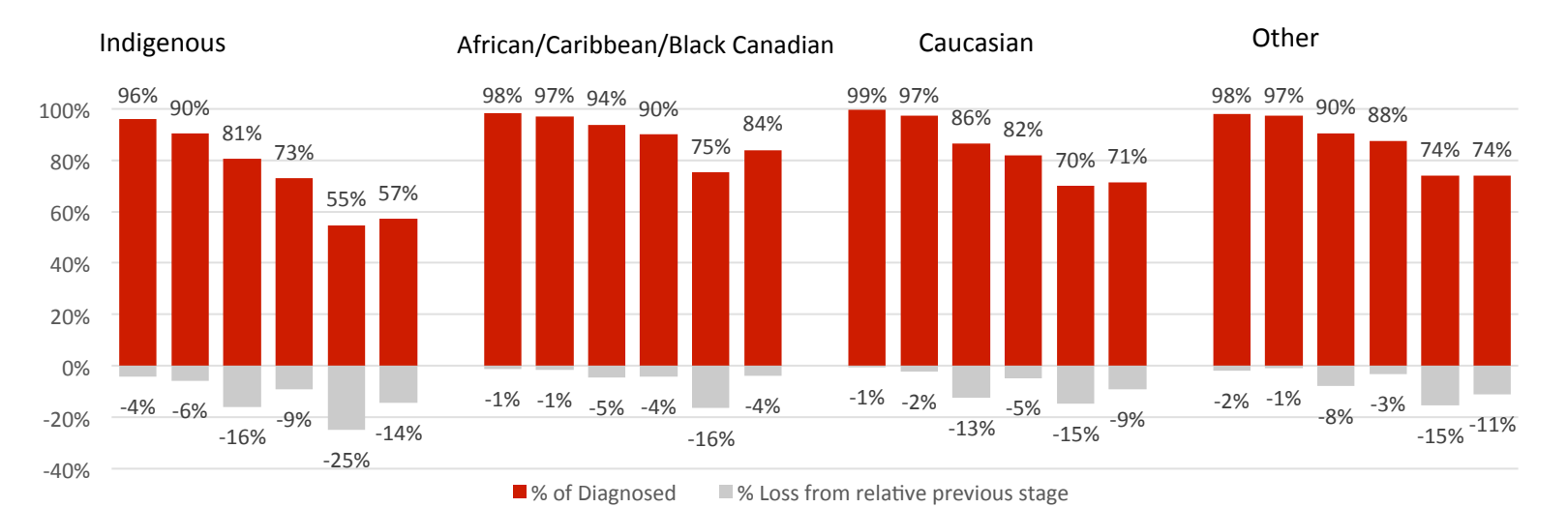


Fig. 4. Food security

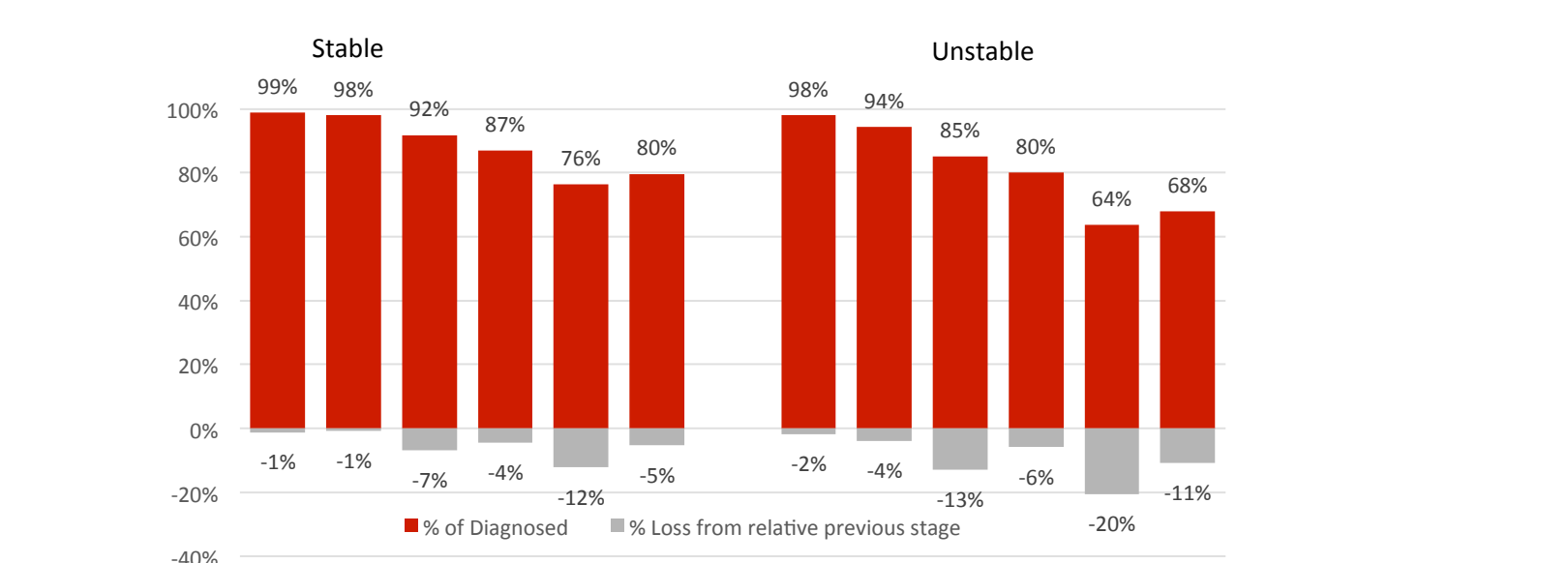


Fig. 5. Incarceration

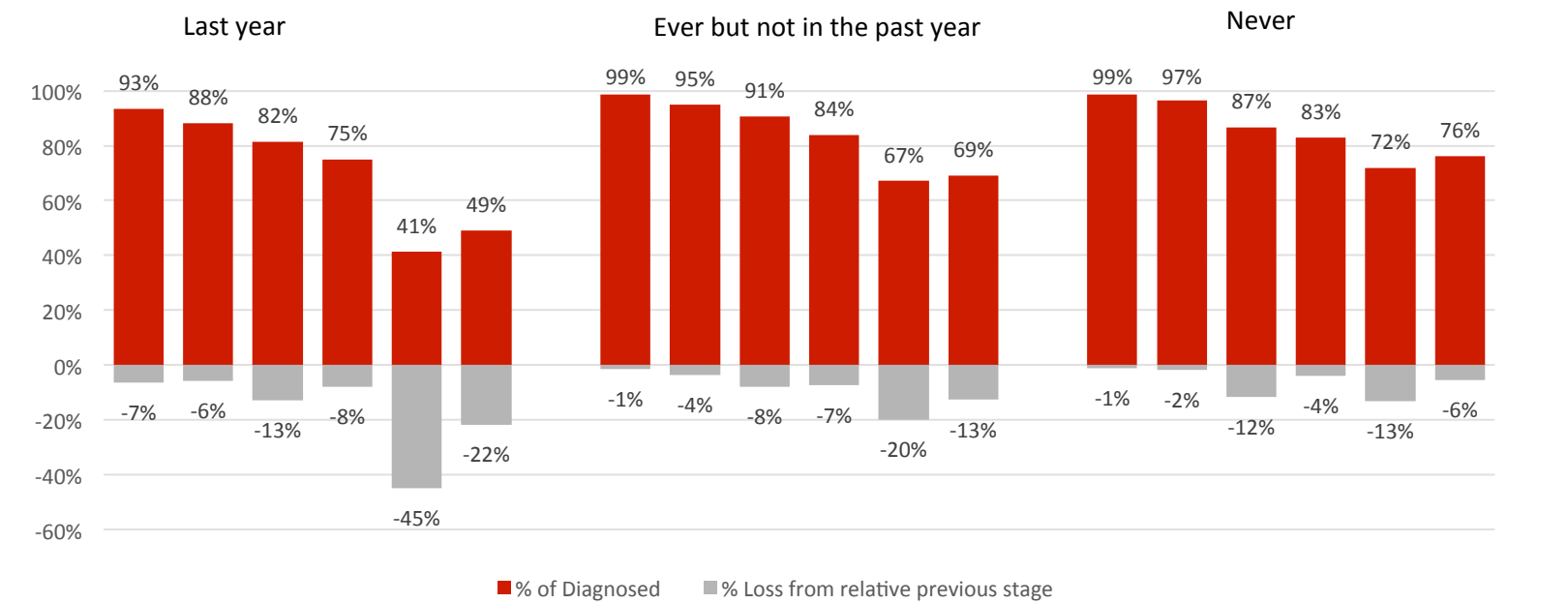
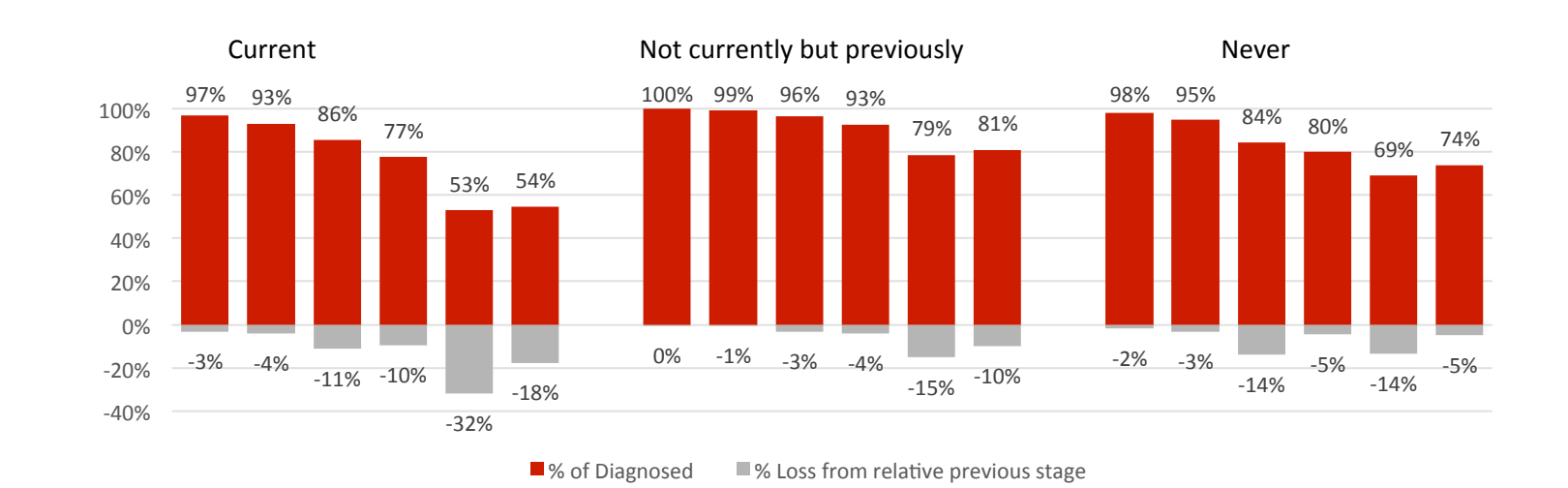


Fig. 6. Illicit drug use history



- Multivariable logistic regression results among those currently on ART:** Adjusted odds of not being virally suppressed were significantly higher among women who were **young** [aOR: 1.4 (95% CI: 1.1-1.79) per 10 years younger], **food insecure** [1.77 (1.03-3.05)], **incarcerated in the past year** [3.84 (1.56-9.45)], and **currently using illicit drugs** [3.25 (1.46-- 7.25)].

## CONCLUSIONS

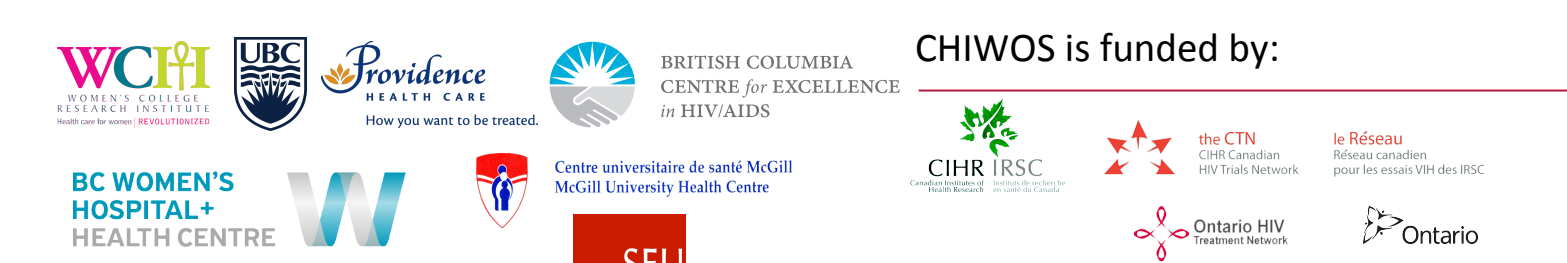
This Canadian cohort is highly engaged in care and close to meeting the UNAIDS 2020 target of 90% on ART. Older women and African/Caribbean/Black Women in particular have high rates of viral suppression.

Yet gaps in care existed. About one-in-three WLWH were lost across the HIV care cascade, with significant differences by stage, sub-population, and social inequities.

Targeted interventions are needed to improve engagement across the care cascade for a diverse community of WLWH.

## ACKNOWLEDGMENTS

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Geneviève Kerkerian (British Columbia)  
genevieve.kerkerian@alumni.ubc.ca



Étude sur la santé sexuelle et reproductive des femmes vivant avec le VIH au Canada  
Canadian HIV Women's Sexual and Reproductive Health Cohort Study

