0893

# *High Pandemic-Related Mortality Amongst People With HIV in Saskatchewan, Canada*

**Kirsten S. Hall** [1], Molly Trecker [2],Sarah Craddock [2], Raynell Lang [3], Danielle Myrah [2], Kumudhini Karunakaran [1,2], Lanre Medu [2], Alexander Wong [1,2]
[1]University of Saskatchewan, Regina, Canada, [2]Saskatchewan Health Authority, Regina, Canada, [3]University of Calgary, Calgary, Canada

## BACKGROUND

Saskatchewan, a Canadian Prairie province, faces a complicated HIV epidemic characterized by high rates of transmission due to injection drug use (IDU) and disproportionate representation of younger persons, women, and persons of Indigenous ethnicity (e.g. First Nations & Métis). HIV incidence in Saskatchewan in 2021 was 19.7 per 100,000, 4.5 times higher than the Canadian average. The ongoing epidemic is a result of overlapping syndemics of intergenerational trauma, substance use disorder, and societal disparities. Moreover, during the COVID-19 pandemic, the use of synthetic opioids such as fentanyl increased substantially among PWH, leading to very high rates of overdose events & deaths.

We characterized the differences in care cascade outcomes & mortality in persons living with HIV (PWH) in southern Saskatchewan.




**Figure 1:** Map of Canada. Saskatchewan is labeled, **Southern Saskatchewan** labeled within with a black box.

## METHODS

We conducted a retrospective cohort study for all PWH cared for in the Infectious Diseases Clinic (IDC) at Regina General Hospital between December 31/19 and June 10/22. Age, sex, ethnicity & primary mode of HIV acquisition were collected from the IDC database, along with cascade of care & mortality data. Deaths, including most likely cause of death, were characterized via individualized case review.

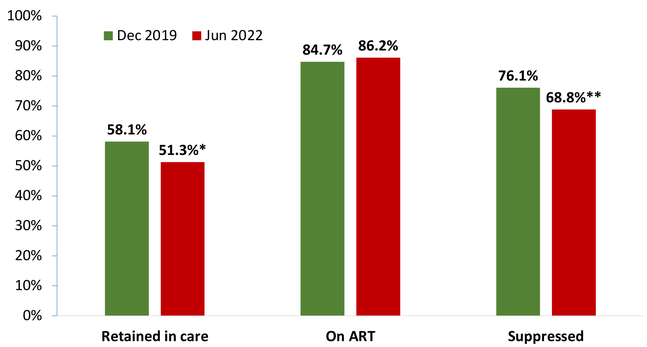


**Figure 2:** IDC Care Cascade Outcomes.
*p=0.02 (retained in care) **p=0.007 (viral suppression)

In southern Saskatchewan, between Dec. 31/19 June 10/22, **80 of 518 (15.4%) PWH died**. 59 of 80 deaths (74%) were due to *drug overdose (n=49)* or *complications of drug use (n=10)*. No PWH died directly from COVID-19.

## RESULTS

Key cascade of care measures worsened during the COVID-19 pandemic. 58.1% of the cohort were retained in care (2 visits [including virtual/remote] ≥ 90 days apart in previous 12 months) & 76.1% were virally suppressed (most recent HIV RNA ≤ 200 copies/mL within previous 12 months) in December 2019, decreasing to 51.3% retained (p=0.02) & 68.8% suppressed (p=0.007) in June 2022.
There were 80 deaths during the study period, representing 15.4% of the cohort from the end of 2019. Most deaths (49, 61.3%) were due to suspected or confirmed drug overdose. 10 (12.5%) additional deaths occurred due to complications from IDU (i.e., sepsis). No deaths were directly attributable to COVID-19.
Significantly higher proportions of persons who died acquired HIV from IDU (69/80, 86%), were Indigenous (67/80, 84%) and were middle-aged between 35-65 (67/80, 84%) versus December 2019.

| Patient Cohort | | Dec 2019 | June 2022 | Deaths |
|---|---|---|---|---|
| Total active patients | | 518 | 585 | 80 |
| Age | <35 | 142 (27%) | 163 (28 %) | 13 (16%) |
| | **35-65** | **359 (69%)** | **389 (67 %)** | **67 (84%)** |
| | >65 | 17 (3%) | 33 (6 %) | 0 (0%) |
| Sex | Female | 206 (40%) | 245 (42%) | 35 (44%) |
| | Male | 312 (60%) | 340 (58%) | 45 (56%) |
| Self declared ethnicity | **Indigenous** | **269 (52%)** | **306 (52%)** | **67 (84%)** |
| | White | 162 (31%) | 172 (30%) | 10 (12.5%) |
| | African/Black or Caribbean | 59 (11%) | 64 (11%) | 1 (1%) |
| | Other | 28 (6%) | 43 (7%) | 2 (2.5%) |
| Primary HIV acquisition risk factor | **Injection drug use** | **287 (55%)** | **318 (54%)** | **69 (86%)** |
| | MSM | 74 (14%) | 82 (14%) | 2 (2.5%) |
| | Endemic | 52 (10%) | 51 (9%) | 0 (0%) |
| | Heterosexual sex | 83 (16%) | 94 (16%) | 7 (9%) |
| | Other/unknown | 22 (5%) | 40 (7%) | 2 (2.5%) |

**Figure 3:** Characteristics patient cohorts from Dec 2019, June 2022 and the group of patients who passed away during the study period. **Bolded characteristics** were significantly higher (p<0.05) in the death cohort compared to the December 2019 cohort.

## CONCLUSIONS

Intersecting epidemics of HIV and substance use disorders in Saskatchewan and the dramatic rise of the use of fentanyl, led to very high rates of death in our cohort of PWH during the COVID-19 pandemic. Many pandemic measures implemented to reduce the spread of SARS-CoV-2 may have indirectly contributed.

Disrupted access to safe opioid supply and harm reduction services such as needle & syringe exchange along with opioid agonist therapy (OAT) was widespread during the pandemic. Marginalized & vulnerable persons do not generally have access to internet services or a phone to be able to conduct remote appointments. Many community support services closed, increasing the numbers of persons unstably housed and / or homeless.

**Comprehensive population-level harm reduction and addictions management strategies such as universal access to needle & syringe exchange along with opioid agonist therapy is critically needed to reduce morbidity & mortality from drug use amongst both PWH and persons living without HIV in Saskatchewan.**

Cascade of care outcomes including retention in care and viral suppression all decreased during the COVID-19 pandemic. Human resource challenges played a key role in this decrease, along with moves to remote & virtual care which made it difficult to continue to engage vulnerable persons without access to a phone or internet service. **Large numbers of additional specialized human resources along with coordinated provincial planning are urgently needed to halt the HIV epidemic ongoing in the province of Saskatchewan.**

## ADDITIONAL KEY INFORMATION

**Presenting Author: kirsten.hall@usask.ca**
**Corresponding Author: alexander.wong@usask.ca**

**Acknowledgements:** We acknowledge the support of the clinical & research staff at IDC, all persons who work to improve clinical outcomes for PWH & end the HIV epidemic across the province of Saskatchewan, and all PWH in IDC and their families including those we have tragically lost. IDC sits on Treaty 4 Territory and the Homeland of the Métis. We pay our respect to the First Nations & Métis ancestors and reaffirm our ongoing relationship with one another.