

Measuring HIV and hepatitis C incidence during the COVID-19 pandemic in a cohort of people who inject drugs

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Background

- HEPCO is an open cohort study of people who inject drugs in Montreal, Canada
- HIV and hepatitis C virus (HCV) incidence is measured at three-monthly follow-up visits
- Study visits were halted March-November 2020 due to the COVID-19 pandemic and have been slow to recover through 2021-22
- Longer follow-up times between study visits may bias annual HIV and HCV incidence estimates

Objective

- To estimate trends in HIV and HCV incidence, 2011-2022, while seeking to minimize bias due to extended follow-up times from 2020 onwards

Methods

- Participants have injected drugs in the past 6 months, reside in Montreal, complete a detailed biobehavioural questionnaire, and provide whole blood samples for HIV and HCV testing
- In previous incidence analyses, new infections have been assigned to the year of study visit. To avoid upwardly-biasing estimates by attributing all cases detected in 2022 to that year, we instead calculated a single incidence estimate for the period April 2020-September 2022 ("pandemic period")
- New infections and person-years (PY) of observation for the first three months of 2020 were added to the 2019 estimate
- We examined the characteristics of participants before and during the pandemic period to assess if there have been changes in the cohort profile that may influence incidence estimates

Key findings

HIV INCIDENCE

- HIV incidence was persistently low (0.24 per 100 PY, 95% CI 0.11, 0.45) (Figure 1)
- Two participants tested HIV positive during the pandemic period, compared to one participant in the five years prior

HCV INCIDENCE

- HCV incidence was declining, but results for 2019 and the pandemic period suggest that this may have plateaued (Figure 2)

COHORT PROFILE

- The cohort profile during the pandemic was slightly older, with less cocaine injecting and more opioid injecting, but similar number of days of injecting, compared to before the pandemic (Table 1)

Figure 1: HIV incidence per 100 person-years in people who inject drugs, Montreal, 2011-2023

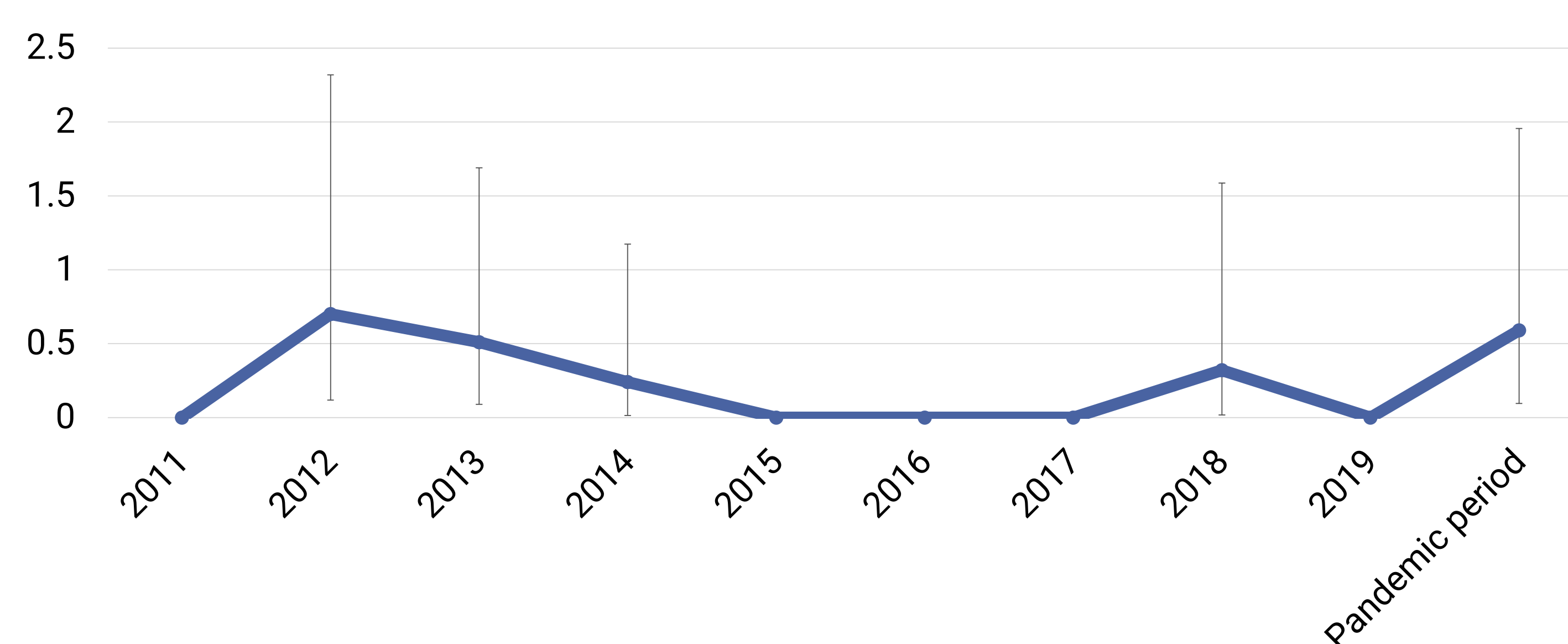


Figure 2: HCV incidence per 100 person-years in people who inject drugs, Montreal, 2011-2023

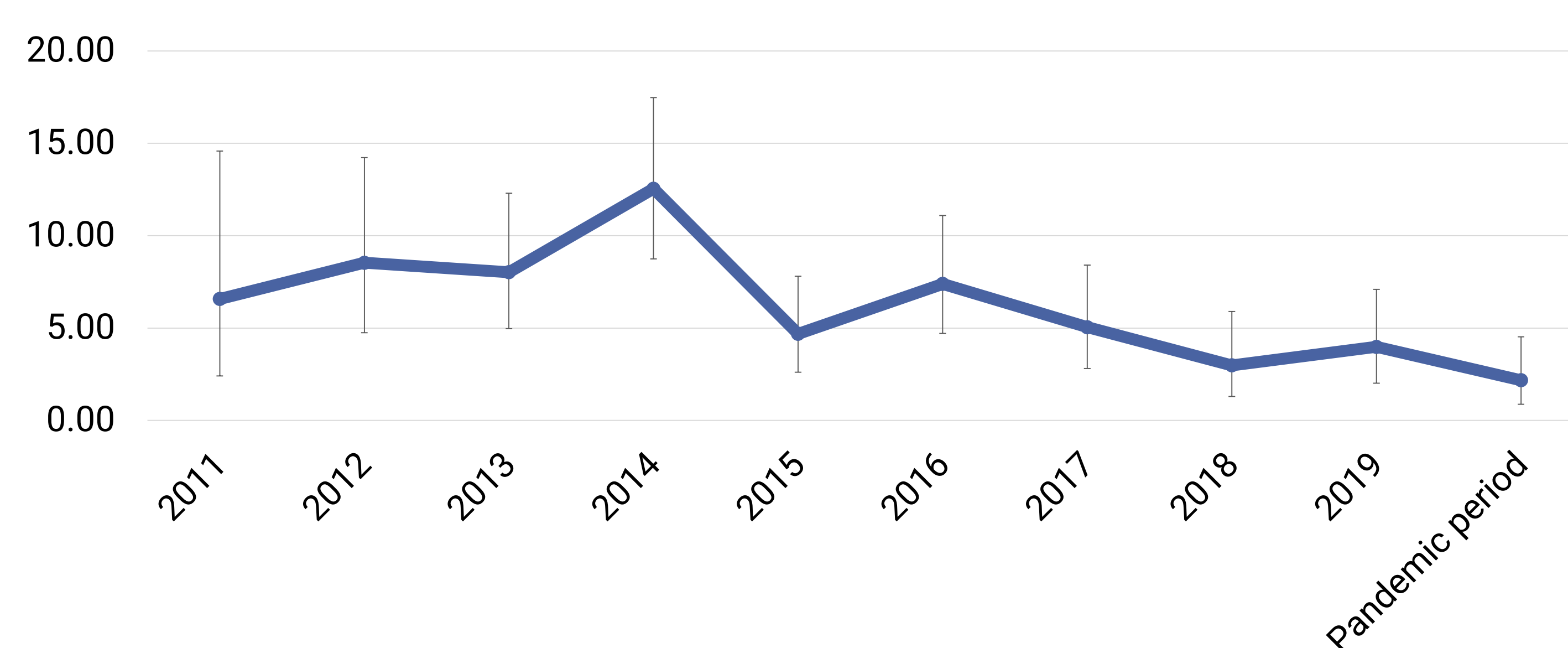


Table 1: Participant profile before and during the pandemic period

| Variable | Participants with at least one study visit: | |
|---------------------------------|---|-------------------------------|
| | Jan 2019-March 2020 N (%) | April 2020-Sept 2022 N (%) |
| Median age (IQR) | 49 (40-56) | 51 (42-57) |
| Past month cocaine injection | 26 | 23 |
| Past month opioid injection | 19 | 30 |
| Recent incarceration | 8 | 11 |
| Recent opioid agonist treatment | 39 | 36 |
| Daily injecting | 30 | 30 |
| Unstably housed | 31 | 33 |

Conclusion

- The COVID-19 pandemic has created challenges for measuring HIV incidence in cohort studies
- We identified signals suggesting changes in HIV and HCV incidence in people who inject drugs in Montreal that require ongoing monitoring
- The cohort profile may have shifted due to loss to follow-up that occurred during the pandemic period
- Targeted efforts are underway to increase recruitment of under-represented populations e.g. younger people, women, anglophones, and visible minorities. This will improve representativeness of the sample and provide reliable HIV and HCV estimates in people who are regularly injecting drugs.

Acknowledgments

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