Appendix 2. Detailed description of each characteristic

Region of Residence

Residence was classified according to Local Health Integration Network (LHIN) and Ontario community size by assigning postal codes to their relevant census metropolitan or census agglomeration areas.1 Postal codes associated with residence codes and census subdivisions unique to First Nations communities were also used to classify whether an individual resided within a First Nations community (“on-reserve”), outside of a First Nations Community, out of province, or unknown in each year.2

HIV and HBV

Cases of human immunodeficiency virus (HIV) and hepatitis B virus (HBV) were identified by searching diagnostic codes, service/procedure codes, the Ontario HIV database at ICES, and/or PHO testing records (Supplemental Table S1). For each, the earliest record date was used as a surrogate measure for date of diagnosis. Cases were reported if ever present in the entire timeframe searched in each administrative dataset for all cohorts. For the diagnosed cohort, complications were also reported if the earliest record date was prior to HCV infection diagnosis date.

Supplemental Table S1. Codes used to identify records of HIV or HBV

| Flag | Database Searched                                      | Codes Searched                                      |
|------|--------------------------------------------------------|------------------------------------------------------|
| HIV  | Ontario HIV Database                                   | Any record                                           |
|      | DAD, SDS, and NACRS                                    | ICD-9 diagnostic codes starting with: 042, 043, 044  |
|      |                                                        | ICD-10 diagnostic codes starting with: B20, B21, B22, B23, B24 |
| HBV  | DAD, SDS, and NACRS                                    | ICD-9 diagnostic codes: 0702, 0703                   |
|      |                                                        | ICD-10 diagnostic codes: B160, B161, B162, B169, B170, B180, B181, Z2250 |
|      | PHO Laboratory Testing Records                          | Any positive HBV antibody or confirmatory test        |
Mental Health Conditions

Records of mental health diagnoses, including substance abuse-related disorders, were reported by using stratified diagnostic groupings that categorize mental health and addictions-related diagnostic codes in the administrative datasets (Supplemental Table S2). Diagnostic groups were developed by ICES and used as part of the Ontario Mental Health and Addiction Scorecard. Diabetic groups were supplemented with OHIP outpatient mental health diagnostic codes where there was sufficient detail to categorize the physician services claim. Conditions were flagged if present from Jan 1, 2002 (the earliest date of the diagnostic grouping variable) to Dec 31, 2017.

Supplemental Table S2. Codes used to identify records of mental health and addiction disorders.

| Diagnostic Group                      | ICD-9 codes (Used to search OMHRS)                      | ICD-10 Codes (Used to search DAD and NACRS) | OHIP Diagnostic Code |
|---------------------------------------|--------------------------------------------------------|---------------------------------------------|----------------------|
| Substance-Related and Addiction Disorders | 291.x, 292.x, 303.x, 304.x, 305.x, 312.31, Provisional=16 | F10, F11, F12, F13, F14, F15, F16, F17, F18, F19, F55, F63.0 | 303, 304             |
| Schizophrenia Spectrum and Other Psychotic Disorders | 293.81, 293.82, 295.x, 297.x, all 298.x, Provisional=2 | F06.0-2, F20, F22-F29, F53.1 | 295, 297, 298         |
| Depression mood disorder              | 296.2x, 296.3x, 296.9x, 300.4x, 311.x, 625.4x, Provisional=4 | F32.x, F33.x, F34.1 | 311                  |
| Bipolar mood disorder                 | 296.0x, 296.4x, 296.5x, 296.6x, 296.7x, 296.8x, 301.13, Provisional=3 | F30.x, F31.x, F34.0 | -                     |
| Other mood disorders                  | 293.83                                                  | F06.3, F38.x, F39.x, F53.0, F34.8, F34.9 | -                    |
| Anxiety disorders                     | 293.84, 300, 300.0x, 300.2x, 309.21, 313.23, Provisional=5 | F06.4, F40, F41, F93.0, F93.1, F93.2, F94.0 | 300                  |
| Trauma/stressor-related disorders     | 308.3x, 309, 309.0x, 309.24, 309.28, 309.3x, 309.4x, 309.81, 309.89, 309.9x, 313.89, Provisional=7 | F43.x, F94.1, F94.2 | 309                  |
| Personality disorders                 | 301, 301.0x, 301.2x, 301.4x, 301.5x, 301.6x, 301.7x, 301.81-3, 301.89, 301.9x 310.1, Provisional=18 | F07.0, F21, F60,F61, F62, F68, F69 | 301                  |
| Deliberate self-harm                  | -                                                       | X60-X84, Y10-Y19, Y28* | -                    |
Note: x represents all subcategories within the respective diagnosis code. Provisional represents broader provisional diagnoses categories found in OMHRS based on DSM-IV and DSM-V codes. Diagnostic group codes were adapted from the Ontario Mental Health and Addiction Scorecard.

*when primary diagnostic code was not F06-F99

Abbreviations: DAD, Discharge Abstract Database; ICD, International Classification of Diseases; NACRS, National Ambulatory Care Reporting System; OHIP, Ontario Health Insurance Plan; OMHRS, Ontario Mental Health Reporting System.

**Outpatient Prescription Drugs**

Outpatient prescription drugs likely related to HCV infection, were captured from the Ontario Drug Benefit (ODB) database, which contains information about claims covered by the Ontario Drug Benefit plan for eligible individuals. Eligible individuals include Ontario residents who are aged 65 and older, or living in long-term care facilities, or who have a high drug cost relative to their income. Claims specific to direct-acting antivirals (DAA), interferon, ribavirin, and interferon-based combination therapies were captured and categorized using their respective drug identification numbers (DIN) (Supplemental Table S3).

**Supplemental Table S3.** HCV-related treatment regimens and their associated identification numbers searched in the Ontario Drug Benefit database.

| Treatment          | Drug Identification Numbers                                                                 |
|--------------------|---------------------------------------------------------------------------------------------|
| Ribavirin          | 02246030, 02246026, 02246027, 02246028, 02246029, 02254581, 02254603, 02254638, 02254646, 02239730, 02241159, 09852417, 09853260, 02439212 |
| Direct Acting Antivirals | 02371464, 02371472, 02436207, 02432226, 0245890, 02425904, 02416441, 02418355, 02371553, 02444747, 02452294, 09857396, 02370816, 02451131, 02456370, 02467542, 02444755, 02447711, 02371448, 02371456 |
| Interferon         | 02239832, 02223384, 02223392, 02223406, 02231651, 00889067, 02223414, 02238674, 02238675, 09853995, 09854045, 09854053, 00705896, 00705918, 00705926, 02240693, 02240695, 01911988, 01911996, 01912003, 00812471, 00812498, 00812501, 02217015, 02217031, 02217058, 02217066, 02019914, |
| Peginterferon      | 02240694, 02242966, 02242967, 02242968, 02242969, 02248077, 02248078 |

Appendix 2, as supplied by the authors. Appendix to: Mendelowitz A, Bremner KE, Walker JD, et al. Hepatitis C virus infection in First Nations populations in Ontario from 2006 to 2014: a population-based retrospective cohort analysis. *CMJ Open* 2021. DOI:10.9778/cmajo.20200164. Copyright © 2021 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup.cmajca.
Multimorbidity

Multimorbidity was captured and scored using the Johns Hopkins ACG System, Aggregated Diagnosis Groups (ADG), based on the two years prior to reference date. The number of individuals within each ADG category was reported. Also, individuals were categorized as having 0 to 3, 4 to 7, 8 to 10, and 11+ categories, corresponding to an increasing degree of multimorbidity.

References

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