

# The epidemiology of hepatitis C in Canada

This fact sheet provides a snapshot of the hepatitis C epidemic in Canada. It is one of a series of fact sheets providing epidemiological information.

All epidemiological information is approximate, based on the best available data. Most of the data in this fact sheet comes from national hepatitis C surveillance data, population-specific surveillance studies or national hepatitis C estimates generated through mathematical modelling. More information about these data sources can be found in the section “Where do these numbers come from?” at the end of the fact sheet.

## What is hepatitis C?

Hepatitis C is a liver disease caused by the hepatitis C virus. Some people are able to clear the virus from their body early on in infection; however, in about three-quarters of people, the infection becomes chronic. Chronic infection can lead to severe liver damage (cirrhosis), liver cancer and liver failure (which requires a liver transplant). There are treatments for hepatitis C, but no vaccine exists to prevent infection.

## How is hepatitis C spread?

Hepatitis C is transmitted when the blood of someone carrying the virus gets into the bloodstream of an uninfected person. The most common ways a person can get infected with the hepatitis C virus are through:

- Using needles and equipment that have already been used by someone else for

preparing, injecting, inhaling or snorting a drug.

- Receiving a blood transfusion in Canada prior to 1992, before blood was effectively and routinely screened for hepatitis C.
- Receiving a blood transfusion in a country where procedures for screening blood are not effective or routine.

Though less common, a person can also become infected with the hepatitis C virus in the following ways:

- Sharing or borrowing personal items, such as razors, toothbrushes or nail clippers that contain traces of blood from a previous user.
- Unsafe medical practices that involve reusing medical equipment that has not been properly sterilized. While this is rare in Canada, it can occur.

- Using tattoo, body-piercing or acupuncture equipment that has been reused without being properly sterilized.
- Condomless sex (especially among gay men and other men who have sex with men).
- Transmission from an infected mother to a child during pregnancy or delivery (also known as vertical transmission).

**At the end of 2011, an estimated six to seven in every 1,000 Canadians were living with chronic hepatitis C (prevalence).<sup>1</sup>**

Based on national 2011 hepatitis C estimates:

- An estimated 220,697 to 245,987 Canadians were living with chronic hepatitis C. That is the equivalent of six to seven people out of every 1,000 Canadians (or 0.6% to 0.7% of the total Canadian population).
- An estimated 44% of people living with chronic hepatitis C infection were unaware of their status (97,107 to 108,234 Canadians).
- Chronic hepatitis C was most prevalent among people born in 1955 to 1959 (1.5%), followed by those born in 1950 to 1954 (1.25%); 1960 to 1964 (1.2%); 1965 to 1969 (1.1%); and 1970 to 1974 (0.8%).

**At the end of 2011, an estimated one out of every 100 Canadians were antibody positive for hepatitis C, indicating either a current or past infection.<sup>1</sup>**

Based on national 2011 hepatitis C estimates:

- An estimated 332,414 people were antibody positive for hepatitis C. This indicates either a current or past infection with hepatitis C. This is the equivalent of one person out of every 100 Canadians (or 1.0% of the total Canadian population).
- People who inject drugs (both current and former) comprised 42.6% of all antibody-positive cases.

- People born in a country outside of Canada comprised an additional 35.0% of all antibody positive-cases.

**Hepatitis C is more prevalent among people who inject drugs than in any other group.<sup>1,2,3</sup>**

Based on national hepatitis C estimates and a few Canadian surveillance systems:

- 66.0% of people who inject drugs and 28.5% of people who formerly injected drugs were antibody positive for hepatitis C (2011).<sup>1</sup>
- 24.0% of federal prisoners and 23.3% of provincial prisons were antibody positive for hepatitis C (2011).<sup>1</sup>
- 3.0% of people living in nursing homes and long-term care hospitals were antibody positive for hepatitis C (2011).<sup>1</sup>
- 1.9% of people born in a country outside of Canada were antibody positive for hepatitis C (2011).<sup>1</sup> Data on prevalence rates among specific immigrant populations is not available; however, immigrants from countries where hepatitis C is more prevalent may have higher hepatitis C rates upon entry to Canada. Since hepatitis C testing is not done upon entry to Canada, there may be immigrants living with hepatitis C who are not aware of their infection.
- 5% of gay men and other men who have sex with men were antibody positive for hepatitis C (2005–2007).<sup>2</sup>
- 5% of street-involved youth were antibody positive for hepatitis C (2005–2006)<sup>3</sup> and 2.3% of people who are homeless were antibody positive for hepatitis C (2011).<sup>1</sup>

**The annual reported rates for hepatitis C infections are declining.<sup>4</sup>**

Based on 2014 national surveillance data, 10,458 hepatitis C diagnoses were reported to the Public Health Agency of Canada. This is equal to 29.4 cases of hepatitis C per 100,000

Canadians. The rate of reported hepatitis C diagnoses has declined steadily since 2005 when the rate was 40.3 per 100,000.

### The highest rates of hepatitis C diagnoses were in older men in 2014.<sup>4</sup>

Based on 2014 national surveillance data:

- Men have higher rates of hepatitis C diagnoses than women (37.3 per 100,000 compared to 21.7 per 100,000).
- Among men, those aged 40 to 59 had the highest rate of hepatitis C diagnoses at 55.3 cases per 100,000.
- Among women, those aged 25 to 29 had the highest rate of hepatitis C diagnoses at 38.3 per 100,000.

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#### Key definitions

**Prevalence**—the total number of people who are living with a condition at a point in time. In the case of hepatitis C, the prevalence rate tells us how many people have hepatitis C in a defined population.

**Incidence**—the number of new infections in a defined period of time (usually one year). In the case of hepatitis C, the incidence rate tells us how many people are getting hepatitis C in a particular year.

#### Where do these numbers come from?

All epidemiological information is approximate, based on the best available data. Most of the data in this fact sheet come from national hepatitis C surveillance data, population-specific surveillance studies or national hepatitis C estimates produced in a modelling exercise.

#### Routine hepatitis C case reporting (surveillance)

Healthcare providers are required to report hepatitis C diagnoses to their local public health authorities. Each province/territory then compiles this information and provides it to the Public Health Agency of Canada (PHAC). Sometimes additional information is collected and sent to PHAC, such as information about age, gender and the way the person may have acquired hepatitis C. At the time this fact sheet was published, the most recent data available are for 2013.

**Limitations**—These data represent the number of cases reported to PHAC by each province/territory. Reported cases do not truly represent the prevalence or incidence

of hepatitis C because these statistics represent only those cases that have been diagnosed (excluding those who have yet to be diagnosed). Furthermore, these numbers do not distinguish between acute (new) infections, chronic (more long-term) infections, and infections that have been resolved (when a person has cleared the virus from their body). Therefore, it is impossible to know who is recently infected, who has a chronic infection and who no longer has the disease. Other limitations to these data include reporting delays (the time between the diagnosis of hepatitis C and when it is reported to PHAC) and underreporting (largely due to the asymptomatic nature of hepatitis C virus infection).

#### Use of mathematical modelling in producing estimates of hepatitis C prevalence and incidence

Mathematical modelling techniques were used to provide an overall picture of the hepatitis C epidemic in Canada in 2011 using a combination of back-calculation and workbook methods.

**Limitation**—Mathematical models use a combination of available data and assumptions. They help us to understand the state of the epidemic; however, the findings are only as good as the data and assumptions the mathematical models are based on.

#### Population-specific surveillance

The Public Health Agency of Canada (PHAC) monitors trends in the spread of a number of infectious diseases, including measures of hepatitis C and associated risk behaviour indicators among key vulnerable populations identified in Canada through population-specific surveillance systems. These surveillance systems, also known as “Track” systems, are comprised of periodic cross-sectional surveys, which, in addition to collecting information on biological specimens to be tested for HIV and hepatitis C virus also collect information on behavioural risks at selected sites in Canada. The blood test used does not distinguish between past or present hepatitis C infection.

M-track is the national surveillance system for gay men and other men who have sex with men. The statistics provided in this fact sheet are for the years 2005 to 2007 from participating phase-1 M-Track sites. Because the system only recruits voluntary participants from selected urban sites, the results do not represent all men who have sex with men in Canada.

Enhanced Street Youth Surveillance (E-SYS) is the national surveillance system for street-involved youth. The statistics provided in this fact sheet are for the years 1999 to 2005 from participating E-SYS sites. Because the system only recruits voluntary participants from selected urban sites, the results do not represent all street-involved youth in Canada.

## Acknowledgements

We would like to thank the Surveillance and Risk Assessment Division of the Centre for Communicable Diseases and Infection Control, Public Health Agency of Canada, for their helpful comments and expert review of CATIE epidemiology fact sheets.

## References

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**Author:** Challacombe L  
**Published:** 2017



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## Contact us

**by telephone**  
1.800.263.1638  
416.203.7122

**by fax**  
416.203.8284

**by e-mail**  
[info@catie.ca](mailto:info@catie.ca)

**by mail**  
505-555 Richmond Street West  
Box 1104  
Toronto ON M5V 3B1

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Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about HIV- and hepatitis C-related illness and the treatments in question.

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Funding has been provided by the Public Health Agency of Canada.

CATIE Ordering Centre No: ATI-50233  
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