



Canada's source for
HIV and hepatitis C
information

La source canadienne
de renseignements sur
le VIH et l'hépatite C

From *HIV in Canada: A primer for service providers*

Hepatitis C Virus

Key Points

- An estimated 220,697 to 245,987 Canadians were living with chronic hepatitis C in 2011.
- An estimated 332,414 people are antibody positive for hepatitis C, indicating a current or past hepatitis C infection
- The primary mode of hepatitis C transmission in Canada is injection drug use.
- An estimated 0.6% to 0.7% of Canadians were living with chronic hepatitis C in 2011 (this prevalence rate is at least three times higher than that for HIV in Canada).
- Hepatitis C is 10 times more transmissible than HIV through blood contact.
- Testing for hepatitis C among HIV-positive people and for HIV among people infected with hepatitis C is essential.
- Managing treatment in people co-infected with HIV and hepatitis C is more complex than treating people with only one of these infections.
- Hepatitis C is now a curable infection.
- It is possible to be re-infected with hepatitis C after successful treatment.

Hepatitis C is a liver disease caused by the hepatitis C virus. Some people are able to clear the virus from their body soon after becoming infected; 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.

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 as follows:

- 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 before blood was effectively and routinely screened for hepatitis C (i.e., before 1992)
- receiving a blood transfusion in a country where procedures for screening blood are not effective or routine

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

- sharing or borrowing personal items, such as razors, toothbrushes or nail clippers, that contain traces of blood from a previous user
- undergoing unsafe medical practices that involve reusing medical equipment that has not been properly sterilized (although this is rare in Canada, it can occur)
- using tattoo, body-piercing or acupuncture equipment that has been reused without being properly sterilized
- having unprotected sex

Uncommonly, an infected mother may also transmit the virus to a child during pregnancy or delivery (known as vertical transmission).

Hepatitis C is 10 times more transmissible than HIV through blood contact. However, HIV is more easily transmitted than hepatitis C through sexual contact.

At the end of 2011, an estimated six to seven in every 1,000 Canadians (0.6% to 0.7%) were living with chronic hepatitis C. This means that as of 2011, an estimated 220,697 to 245,987 people in Canada were living with chronic hepatitis C. In 2011, 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%).

On the basis of national 2011 hepatitis C estimates, approximately 97,107 to 108,234 or 44% of people living with chronic hepatitis C were unaware that they had this infection.

In 2011, 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 10 people out of every 1,000 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 (antibody positive) is more prevalent in certain populations. On the basis of national hepatitis C estimates and a number of Canadian surveillance systems, an **estimated** 66.0% of people who inject drugs, 28.5% of people who formerly injected drugs, and 2.3% of people who are homeless (who do not inject drugs) were antibody positive for hepatitis C (2011). Additionally, 24.0% of federal prisoners and 23.3% of provincial prisons were antibody positive for hepatitis C (2011). An estimated 3.0% of people living in nursing homes and long-term care hospitals were antibody positive for hepatitis C (2011). An estimated 1.9% of people born in a country outside of Canada were antibody positive for hepatitis C (2011). 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. Based on two national surveillance systems, 5% of gay men and other men who have sex with men were antibody positive for hepatitis C (2005–2007). And 5% of street-involved youth were antibody positive for hepatitis C (2005–2006).

The annual reported rates for hepatitis C infections are declining. 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.

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.

Because HIV and hepatitis C share routes of transmission and individuals infected with one of these infections have an increased susceptibility to the other, individuals infected with HIV are at greater risk of becoming co-infected with hepatitis C and vice versa than people who are not infected with either virus. People who are co-infected are more likely to be Aboriginal, current or former injection drug users, current or former prisoners and/or people who received contaminated blood or blood products in the course of their health care (before implementation of hepatitis C testing in the blood supply). However, since 2000, hepatitis C has been increasingly detected in HIV-positive men who have sex with men who do not report any injection drug use. There is increasing evidence that hepatitis C transmission through sexual contact is occurring, especially among HIV-positive gay men.

Many people infected with hepatitis C experience few or no symptoms. This makes it more difficult to ensure timely diagnosis. Because of the shared routes of transmission, it is essential that people who have been diagnosed with either HIV or hepatitis C be tested for the other virus and provided with appropriate prevention counselling. It is imperative that co-infected individuals be aware of their status for two reasons: (1) people who know their status usually make behaviour changes that result in a reduced transmission risk for others and (2) informed decisions cannot be made about treatment and care without this knowledge.

Co-infection with HIV and hepatitis C has implications for care and treatment. In individuals who are also HIV positive, hepatitis C progresses two to three times faster than in individuals with hepatitis C alone. Decisions about HIV treatment may also be more complex because of interactions between the drugs used to treat HIV and hepatitis C and the side effects of treatment, particularly liver toxicity.

Hepatitis C can now be successfully treated, with treatment eradicating the virus from the body. However, people can be re-infected with hepatitis C after they clear the virus so it is important that people receive harm reduction counselling.

Resources

Sources

1. CATIE. *Hepatitis C: fact sheet* . 2015. Available from: <http://www.catie.ca/en/fact-sheets/hepatitis/hepatitis-c>
2. Myers RP, Liu M, Shaheen AA. The burden of hepatitis C virus infection is growing: a Canadian population-based study of hospitalizations from 1994 to 2004. *Canadian Journal of Gastroenterology* . 2008 April;22(4): 381–7.
3. Public Health Agency of Canada. *Hepatitis C: get the facts brochure* . 2012. Available from: <http://library.catie.ca/PDF/ATI-30000s/30039.pdf>
4. Trubnikov M, Yan P, Archibald C. Estimated Prevalence of Hepatitis C Virus infection in Canada, 2011. *Canada Communicable Disease Report*. December 18, 2014;40(19). Available from: <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/14vol40/dr-rm40-19/surveillance-b-eng.php>.
5. Public Health Agency of Canada. *Hepatitis C in Canada: 2005–2010 surveillance report* . Ottawa: Centre for Communicable Diseases and Infection Control, Infectious Disease Prevention and Control Branch, Public Health Agency of Canada; 2011. Available from: <http://www.catie.ca/sites/default/files/1109-0139-Hep%20C%20Report-EN%20FINAL.pdf>
6. Public Health Agency of Canada. *Notifiable diseases online*. Available from: <http://diseases.canada.ca/notifiable/> [accessed March 7, 2017].
7. Public Health Agency of Canada. *M-Track: enhanced surveillance of HIV, sexually transmitted and blood-borne infections, and associated risk behaviours among men who have sex with men in Canada. Phase 1 report*. Ottawa: Centre for Communicable Diseases and Infection Control, Infectious Disease and Prevention and Control Branch, PHAC; 2011.
8. Community Acquired Infections Division, Public Health Agency of Canada. *Enhanced surveillance of Canadian street youth. Epi-Update: hepatitis C virus infection in Canadian street youth (1999–2005)*. Ottawa: Public Health Agency of Canada; 2008.
9. Myers T, Allman D, Xu K, et al. The prevalence and correlates of hepatitis C virus (HCV) infection and HCV–HIV co-infection in a community sample of gay and bisexual men. *International Journal of Infectious Diseases* . 2009;13:730–9.
10. Anand CM, Fonseca K, Walle RP, et al. Antibody to hepatitis C virus in selected groups of a Canadian urban population. *International Journal of Epidemiology* . 1992;21(1):142–5.
11. Van de Laar TJ, Van der Bij AK, Prins M, et al. Increase in HCV incidence among men who have sex with men in Amsterdam most likely caused by sexual transmission. *Journal of Infectious Diseases* . 2007;196:230–8.
12. Richardson D, Fisher M, Sabin CA. Sexual transmission of hepatitis C in MSM may not be confined to those with HIV infection. *Journal of Infectious Diseases* . 2008;197:1213–4.
13. Matthews GV, Hellard M, Kaldor J, et al. Further evidence of HCV sexual transmission among HIV-positive men who have sex with men: response to Danta et al. *AIDS*. 2007;21:2112–3.
14. Ghosn J, Deveau C, Goujard C, et al. Increase in hepatitis C virus incidence in HIV-1 infected patients followed up since primary infection. *Sexually Transmitted Infections* . 2006;82:458–60.
15. Urbanus A, Van de Laar TJ, Stolte IG, et al. Hepatitis C virus infections among HIV-infected men who have sex with men: an expanding epidemic. *AIDS*. 2009;23:F1–F7.10–16. Bradshaw D, Matthews G, Danta M. Sexually transmitted hepatitis C infection: the new epidemic in MSM? *Current Opinion in Infectious Diseases* . 2012 Dec;1.
16. Burchell AN, Gardner SL, Mazzulli T, et al. Hepatitis C virus seroconversion among HIV-positive men who have sex with men with no history of injection drug use: Results from a clinical HIV cohort. *Canadian Journal of Infectious Diseases and Medical Microbiology*. 2015;26(1):17–22.
17. Jordan AE, Perlman DC, Neurer J, et al. Prevalence of hepatitis C virus infection among HIV+ men who have sex with men: a systematic review and meta-analysis. *International Journal of STD & AIDS* . 2016 Jan 28 [cited 2016 Apr 7]; Available from: <http://std.sagepub.com/lookup/doi/10.1177/0956462416630910>
18. Kim JH, Pseudos G Jr, Suh J, et al. Co-infection of hepatitis B and hepatitis C virus in human immunodeficiency virus-infected patients in New York City, United States. *World Journal of Gastroenterology* . 2008;14:6689–93.
19. Ruf M, Cohuet S, Maguire H, et al. Setting up an enhanced surveillance of newly acquired hepatitis C infection in men who have sex with men: a pilot in London and south east region of England. *Euro Surveillance* . 2008;13:pii :19042. Available from: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19042>
20. Jin F, Prestage GP, Matthews GV, et al. Prevalence, incidence and risk factors for hepatitis C in homosexual men: data from two cohorts of HIV negative and HIV positive men in Sydney, Australia. *Sexually Transmitted*

Infections. 2010;86:25-8.

21. Danta M, Brown D, Bhagani S, et al. Recent epidemic of acute hepatitis C virus in HIV-positive men who have sex with men linked to high-risk sexual behaviour. *AIDS*. 2007;21:983-91.
22. Leruez-Ville M, Kunstmann JM, De Almeida M, et al. Detection of hepatitis C virus in the semen of infected men. *Lancet*. 2000;356:42-3.
23. Nyamathi A. Presence and predictors of hepatitis C virus RNA in the semen of homeless men. *Biological Research for Nursing*. 2002;4:22-30.
24. Cavalheiro NP, Santos AC, Melo CE, et al. Hepatitis C virus detection in the semen of infected patients. *British Journal of Infectious Diseases*. 2008:358-61.
25. Debono E, Halfon P, Bourliere M, et al. Absence of hepatitis C genome in semen of infected men by polymerase chain reaction, branched DNA and in situ hybridization. *Liver*. 2000;20:257-61.
26. Tohme RA, Holmberg SD. Is sexual contact a mode of hepatitis C virus transmission? *Hepatology*. 2010;52(4):1497-505. Available from: <http://www.natap.org/2010/HCV/review.pdf>

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