



# Hepatitis C: a public health perspective and related implications for physicians

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The hepatitis C virus (HCV) is an infection that is taking a heavy toll both in Canada and globally, generating considerable concern and raising significant public health challenges with long-term medical, economic and social consequences. It is estimated that 250,000 people in Canada are currently infected with HCV and 5,000 new cases develop in Canada each year, mostly through sharing equipment for injection drug use (IDU). Reported rates of HCV infec-

tion are very low in infants and children, climb to peak rates among those aged 30–39 and decline thereafter. Rates are highest among males and the continuing number of new cases demonstrates a significant disease burden, which must be addressed before it's too late.

## **A snapshot of HCV**

HCV infection does not happen in a vacuum; it is prevalent among the most hard-to-reach and

under-served populations, and it is compounded by comorbidities such as chronic alcoholism and mental health issues, socio-economic factors and high-risk behaviour. Street youth, inmates in correctional facilities and Aboriginal Peoples are particularly vulnerable populations.

- In a study of seven large urban centres across Canada between 1999 and 2003, the Public Health Agency of Canada found that an average of 20 per cent of street youth injected drugs at some point. Rates of HCV infection among the street youth populations in these centres averaged four per cent overall across the seven sites, which is well above the prevalence estimated within the general population.
- Inmates in Canadian correctional facilities often participate in high-risk activities such as IDU and tattooing. According to a 2004 report on HIV and HCV testing in federal penitentiaries, the seroprevalence rate of HCV in Correctional Service Canada facilities in 2002 was 25.2 per cent among men and 33.7 per cent among women. Following release from a correctional facility, inmates may transmit HCV within the broader Canadian community.
- Within Aboriginal communities, social and health disparities are associated with significant risk of HCV infection. In 1999 the estimated incidence of acute HCV infection among the Aboriginal population was, on average, seven to eight times higher than that observed among the non-Aboriginal, Canadian-born population.

In addition, particular attention must be paid to vulnerable populations with previous exposure to HCV. For example, approximately 20 per cent of the estimated 250,000 cases of HCV infection in Canada are among immigrants from developing countries where, according to the World Health Organization (WHO), infections continue to occur because of unscreened blood transfusions and failure to sterilize hospital and injection equipment. In addition, an estimated 10 per cent of infections in Canada resulted from the provision of HCV contaminated blood,

most of which occurred prior to the introduction of universal screening of blood donations for HCV in 1990. Canadian Blood Services now estimates that the residual risk of transfusion-transmitted HCV is as low as one in approximately 2.86 million units of donated blood.

### **Implications for healthcare and challenges to treatment**

Out of every 100 people infected with HCV, 75 to 85 may develop chronic infection, 10 to 20 may develop cirrhosis over a period of 20 to 30 years, and one to five may die from the consequences of long-term infection including liver cancer. HCV is the leading cause for liver transplants worldwide. In Canada it is estimated that one-third of people infected—approximately 90,000 people—are in the long asymptomatic stage of their illness and may be unaware of their infection. For this reason, they cannot seek treatment or adopt health promotion behaviours such as reduction or abstinence from alcohol consumption to slow disease progression. Furthermore, they may unknowingly transmit infection to others.

The general public remains confused about the distinctions between hepatitis A, B and C viruses. The result is that some Canadians may not know the modes of transmission for each virus, and they erroneously believe that HCV is vaccine-preventable like hepatitis A and B. There is no known vaccine to prevent HCV, although research is underway as part of the WHO's Initiative for Vaccine Research. Currently, drug therapies to prevent the spread of the disease are paramount.

The healthcare costs for the treatment of HCV are already high and they continue to rise. In Canada, there are a few approved drug therapies to treat HCV infection. Those drugs that are available are very expensive, costing many thousands of dollars per person per year, and can induce side effects that are severe enough to deter some people from using them. For example, treatment with Pegatron costs about \$26,000 per treatment for an infected individual—and these treatments are often

maintained over a 12-month period. In Ontario, individual liver transplants cost about \$120,000, but complicating factors can drive the cost as high as \$690,000. Of the 338 liver transplants performed in Canada in 1998, 217 were attributable to HCV. It is estimated that this figure will triple by 2008. Estimated HCV healthcare costs in Canada total about \$500 million annually, and this figure is expected to increase two-fold by 2010, demonstrating the significant disease and economic burden. However, there are compelling personal and public health reasons to promote awareness, detection and treatment since the newest treatments can result in sustained viral response (SVR). According to the Health Canada and Correctional Service Canada “Canadian Consensus Conference on the Management of Viral Hepatitis,” SVR is defined as the clearance of the HCV RNA from serum by a qualitative test sensitive to < 50 IU/ml, six months after completion of therapy for 50–80 per cent, depending on the genotype of the HCV virus.

### **The role of healthcare professionals**

Healthcare professionals play a very important role in improving quality of life and reducing the future healthcare burden. When screening individuals from vulnerable populations at risk for sexually transmitted blood-borne infections, there may be a single window of opportunity to provide comprehensive counselling and appropriate screening for a broad range of infectious diseases such as hepatitis B and C, and sexually transmitted infections (STIs) including HIV. Vulnerable populations—people who are street-involved, poor, and have various comorbidities—may also require referral to other health and social services such as addictions counselling, income support and treatment of STIs. For people infected with hepatitis C and who have no immunity against hepatitis A and B, immunization for hepatitis A and B viruses is important to avoid co-infections and further injury to the liver. Provision of disease management advice with respect to proper diet and referral for support

and treatment of ongoing alcohol and drug use can help to prevent disease progression.

In a national study of Canadian family physicians (n = 786), 70 per cent of respondents agreed that providing ongoing care to patients infected with hepatitis C is part of the scope of family practice. In addition, 85 per cent of physicians disagree with the assertion that injection drug users should be seen only by specialist services and not in a family practice. Since more than 60 per cent of prevalent hepatitis C cases are due to the risks associated with injection drug use, having a primary care network interested in responding to the hepatitis C care needs of this vulnerable population is essential. According to the College of Family Physicians of Canada, family physicians across the country appear ready to take on an increased and more comprehensive role in the care of hepatitis C-infected patients. Innovative medical education and health system interventions are badly needed to support family practitioners in the provision of hepatitis C care.

There are important reasons to proactively address all of these challenges, given that HCV can be detected through a simple blood test and is entirely preventable. Healthcare professionals have a significant role to play by examining current risk—and inquiring about all past risk factors—to identify people with HCV infection and ensure appropriate diagnosis, treatment, management and counselling take place.

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