



# CanHepC

Canadian Network on Hepatitis C  
Réseau Canadien sur l'Hépatite C

## **How have outcomes of the COVID-19 pandemic impacted hepatitis C elimination in Canada, and where do we go from here?**

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The coronavirus disease 2019 (COVID-19) pandemic has had major impacts on healthcare systems across the globe. Importantly, COVID-19 has jeopardized the global World Health Organization (WHO) commitment to eliminate hepatitis C virus (HCV) by 2030 (1,2). For World Hepatitis day, here we reflect on the impacts of the COVID-19 pandemic on HCV testing, linkage to care, and treatment in Canada, and global research efforts towards HCV vaccine development with an emphasis on repurposing pandemic efforts towards the elimination of HCV as a public health threat.

In 2020, as the government focused on implementing public health measures to combat the pandemic, there was a prominent impact on accessible HCV testing services (3). Researchers demonstrated substantial declines in anti-HCV and HCV RNA testing, and treatment initiation during the three first waves of the pandemic that extended across sexes, age ranges and regions (4,5). Changes in healthcare service delivery required adaptation to public health measures and the “new normal” translated to notable lessons for engagement in HCV testing and follow-up. The extensive resources put into COVID-19 control have provided opportunities for the co-localization of HCV screening initiatives (6). Furthermore, with increased public awareness around viral screening, transmission, and vaccination, convenient and rapid diagnostic tests as well as safer practices around potential routes of viral exposure might be more readily adoptable.

As the pandemic progressed, access to care for patients with HCV was interrupted due to social distancing regulations and to meet the healthcare needs of COVID-19 infected individuals. In Canada, there was a rapid expansion of virtual and telemedicine consultations and development of virtual care infrastructure. This effectively engaged individuals in HCV treatment and drastically reduced loss to follow-up, while posing advantages in convenience, costs, time, and availability for both patients and providers (7). Leveraging virtual visits has allowed for the simplification and streamlining of treatment algorithms for HCV, which in

combination with their flexibility have simplified patient monitoring, follow-up appointments and treatment initiation. In British Columbia, similar treatment completion and sustained virologic response (SVR) rates pre and post-pandemic may be a result of the optimal use of scarce resources such as the employment of minimal pre-treatment investigations and use of telemedicine (8). The widespread use of telemedicine to meet with patients not requiring an in-person visit increased engagement of under-served populations in care (9). For example, telemedicine has been shown to be an effective means for treating HCV in prisons leading to high SVR among inmates (10) and in populations that are at increased risk such as people who inject drugs (11). Further, this has proven to be particularly beneficial for people living in remote communities or experiencing stigma and may increase their engagement in HCV testing and treatment (9,12). These studies suggest that telemedicine is an effective means to engage HCV patients and should continue to be implemented in efforts towards HCV elimination.

Previous HCV protease-inhibitor drugs may have applicability in the treatment of SARS-CoV-2 (13). Conversely, many biotechnological advances as a result of efforts to prevent the transmission of SARS-CoV-2 can be applied to HCV research. The remarkably rapid development of the SARS-CoV-2 vaccines have reinvigorated interest in HCV vaccine development. The technological advancements made recently in these fields as a result of mRNA-based vaccines against SARS-CoV-2 offer unexplored avenues for the development of an HCV vaccine (14). Furthermore, application of unbiased single-cell genomics methods—used extensively to characterize the effects of SARS-CoV-2 infection in patients—to HCV infected human tissue offers new ways to study the disease mechanisms and immune pathways present in HCV disease before and after treatment (15,16). Finally, the ability of direct-acting antivirals to achieve SVR rates close to 100%, the absence of adequate animal models for the study of HCV vaccine effectiveness and recent successes in SARS-CoV-2 human challenge studies are strong arguments in favor of developing HCV controlled human infection trials (17–19). The COVID-19 pandemic has demonstrated that where there is active interest and effort in viral screening, patient management and vaccine development, rapid progress in minimizing viral infectious diseases transmission is very much possible.

Before the pandemic, Canada needed a substantial scale up in treatment to reach WHO's 2030 elimination targets and there were concerns on the feasibility of achieving such targets equitably. Vulnerable populations who are most at risk of HCV have been disproportionately impacted by the pandemic, and a commitment to address the systemic intersectional issues they face is urgently needed (20,21). Furthermore, key challenges remain such as ensuring equity in the response to HCV elimination, reaching marginalized populations, increasing community-based HCV care, and increasing access to disaggregated data for public health units to monitor and evaluate ongoing elimination.

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