Striving toward hepatitis C elimination in the era of COVID-19

Charlotte Lanièce Delaunay MPH^{1,2}, Zoë R Greenwald MSc³, Nanor Minoyan MSc^{4,5}, Andreea Adelina Artenie PhD⁶, Dahn Jeong MSc^{7,8}, Gayatri Marathe MSc^{1,2}, Yasmin A Saeed BScPhm⁹, Gillian Kolla PhD¹⁰, Rasika D Kunden MSc¹¹, Chisom Ifeoma Adaeze Okwor BSc¹², Hannah L Wallace BSc¹³, Andrew Mendlowitz MBiotech^{14,15}, Ching-Hsuan Liu MSc^{16,17}, Sabrina Mazouz MSc¹⁸, Simmone D'souza BSc¹⁹, Catia Taniela Perciani PhD²⁰, Marylin Rheault BSc²¹, Michael A Palmer BSc¹¹, Adam Palayew MSc²², Mohamed N Abdelnabi MSc⁴, Evan B Cunningham PhD²³, on behalf of the 2020-2021 trainees of the Canadian Network on Hepatitis C

KEYWORDS: hepatitis C elimination; COVID-19; SARS-CoV-2; priority populations; people who use drugs

Author Affiliation

¹Department of Epidemiology, Biostatistics, and Occupational Health, School of Population and Global Health, McGill University, Montreal, Quebec, Canada; ²Department of Medicine, McGill University Health Centre, Montreal, Quebec, Canada; ³Division of Epidemiology, Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada ⁴Centre de Recherche du Centre Hospitalier de l'Université de Montréal, Montreal, Quebec, Canada; ⁵Département de Médecine Sociale et Préventive, École de Santé Publique, Université de Montréal, Montreal, Quebec, Canada; ⁶Population Health Sciences, University of Bristol, Bristol, United Kingdom; ⁷School of Population and Public Health, University of British Columbia, Vancouver, British Columbia, Canada; ⁸British Columbia Centre for Disease Control, Vancouver, British Columbia, Canada; ⁹Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada; ¹⁰Canadian Centre for Substance Use Research, University of Victoria, Victoria, British Columbia, Canada; ¹¹Department of Biochemistry, Microbiology, and Immunology, University of Saskatchewan, Saskatoon, Saskatchewan, Canada; ¹²Department of Biochemistry, Microbiology, and Immunology, University of Ottawa, Ottawa, Ontario, Canada; ¹³Division of Biomedical Sciences, Faculty of Medicine, Memorial University of Newfoundland, St. John's, Newfoundland and Labrador, Canada; ¹⁴Institute of Health Policy, Management and Evaluation, University of Toronto, Toronto, Ontario, Canada; ¹⁵Toronto Health Economics and Technology Assessment (THETA) Collaborative, University Health Network, Toronto, Ontario, Canada; ¹⁶Department of Microbiology and Immunology, Dalhousie University, Halifax, Nova Scotia, Canada; ¹⁷Graduate Institute of Medical Sciences, College of Medicine, Taipei Medical University, Taipei, Taiwan; ¹⁸Département de Microbiologie, Infectiologie et Immunologie, Université de Montréal, Montreal, Quebec, Canada; ¹⁹Department of Microbiology, Immunology, and Infectious Diseases, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada; ²⁰Soham and Shaila Ajmera Family Transplant Centre, Toronto General Hospital Research Institute, Toronto, Ontario, Canada; ²¹Department of Microbiology and Immunology, McGill University, Montreal, Quebec, Canada; ²²Department of Epidemiology, University of Washington, Seattle, Washington, USA; ²³Kirby Institute, University of New South Wales Sydney, Sydney, New South Wales, Australia



Correspondence: Charlotte Lanièce Delaunay, Purvis Hall, 1020 Pine Avenue West, Montreal, Quebec H3A 1A2, Canada. Telephone: 514-583-4291. E-mail: charlotte.laniece@mail.mcgill.ca

TO THE EDITOR:

Governments worldwide have committed to achieving the World Health Organization (WHO) targets to eliminate the hepatitis C virus (HCV) as a public health threat by 2030 (1). Although recent modelling studies suggest that some countries, including Canada, are on track to eliminate HCV, they could not account for the emergence of the coronavirus disease 2019 (COVID-19) pandemic, which may jeopardize progress toward elimination (2, 3).

The pandemic has had an impact on all stages of the HCV care cascade and has reduced access to essential medical services among priority populations (ie, people disproportionately affected by HCV), including people who use drugs (4). Although governments are rightfully focused on controlling transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), marginalized populations struggle to maintain access to harm reduction and drug treatment services (5–8). Beyond interfering with HCV elimination efforts, the pandemic may, through increased inequity and changes to social service and community support structures, exacerbate existing challenges faced by these groups, including stigma and discrimination, overdose risk, comorbidities, poverty, precarious housing, and domestic violence (9-12). Recent increases in overdose-related deaths in North America reflect this reality (13–15).

The massive mobilization for COVID-19 prevention and testing has enabled the control of SARS-CoV-2 transmission in many settings and has demonstrated the feasibility of rapid and widespread public health action. Factoring in the risk of COVID-19 re-emergence (16), we must build on these lessons to counteract growing health care inequities among marginalized populations and promote a holistic approach to care. We need innovative, person-centred, and culturally sensitive approaches to ensure access to harm reduction services and to prevent HCV (re-)infection and other drug-related harms. By mirroring models implemented to test for SARS-CoV-2 and by colocating services for HCV and COVID-19 surveillance and care, we can simultaneously reduce the consequences of both viruses in our communities (17). For example, HCV testing and treatment can be further scaled up by offering self-collected dried blood spot testing and telemedicine. Remote testing, embedded with a supportive care pathway, respects autonomy and privacy (18). Telemedicine can produce favourable HCV outcomes and has seen widespread adoption during the pandemic (19). Rapid implementation of these models can ensure that the SARS-CoV-2 pandemic does not lead to setbacks in achieving HCV elimination goals.

The WHO's HCV elimination targets are ambitious and require continuing efforts by committed governments to address the intersectional issues faced by priority populations. The COVID-19 pandemic has further marginalized the most underserved in our communities, yet it has demonstrated that concentrated action can minimize infectious disease transmission. These lessons should be applied in the context of hepatitis C as we continue to strive toward elimination.

ACKNOWLEDGEMENTS: The authors thank Dr Naglaa Shoukry, Dr Chris Richardson, and Dr Jason Grebely for their guidance in writing this letter.

FUNDING: All authors received trainee fellowships from the Canadian Network on Hepatitis C: CIAO, SD, MR, and AP received master's fellowships; CLD, ZRG, NM, DJ, GM, YAS, RDK, HLW, AM, C-HL, SM, MAP, and MNA received doctoral fellowships; and AAA, GK, CTP, and EBC received a post-doctoral fellowship. The Canadian Network on Hepatitis C is funded by a joint initiative of the Canadian Institutes of Health Research (CIHR) (NHC-142832) and the Public Health Agency of Canada. CLD received a doctoral training award from the Fonds de Recherche du Québec - Santé (FRQ-S). ZRG received an Ontario graduate scholarship. NM received an FRQ-S doctoral research award. AAA is supported though postdoctoral fellowships from the CIHR and the FRQ-S. DJ received a Frederick Banting and Charles Best Doctoral Award from the CIHR. HLW received a Memorial University Faculty of Medicine Dean's Fellowship (MSc and PhD), the Memorial University School of Graduate

Studies Aldrich Award, and a CIHR Banting and Best Canada Graduate Scholarship–Masters. MAP received a doctoral scholarship from the Natural Sciences and Engineering Research Council of Canada and a College of Medicine Graduate Student Award from the University of Saskatchewan. AP received a master's scholarship from the FRQ-S. **DISCLOSURES:** The authors have no conflict of interest to disclose.

REFERENCES

- 1. World Health Organization. Global health sector strategy on viral hepatitis 2016-2021. Geneva: World Health Organization; 2016.
- Binka M, Janjua NZ, Grebely J, et al. Assessment of treatment strategies to achieve hepatitis C elimination in Canada using a validated model. JAMA Netw Open. 2020;3(5):e204192. https:// doi.org/10.1001/jamanetworkopen.2020.4192. Medline:32374397
- Razavi H, Sanchez Gonzalez Y, Yuen C, Cornberg M. Global timing of hepatitis C virus elimination in high-income countries. Liver Int. 2020;40(3):522–9. https://doi. org/10.1111/liv.14324. Medline:31815353
- 4. Blach S, Kondili LA, Aghemo A, et al. Impact of COVID-19 on global hepatitis C elimination efforts. J Hepatol. Forthcoming 2020. https://doi.org/10.1016/j.jhep.2020.07.042. Medline:32777322
- 5. Bartholomew TS, Nakamura N, Metsch LR, Tookes HE. Syringe services program (SSP) operational changes during the COVID-19 global outbreak. Int J Drug Policy. 2020;83:102821 https://doi.org/10.1016/j. drugpo.2020.102821.
- Jacka BP, Phipps E, Marshall BDL. Drug use during a pandemic: convergent risk of novel coronavirus and invasive bacterial and viral infections among people who use drugs. Int J Drug Policy. 2020;83:102895. https:// doi.org/10.1016/j.drugpo.2020.102895. Medline:32591222
- 7. Glick SN, Prohaska SM, LaKosky PA, Juarez AM, Corcorran MA, Des Jarlais DC. The impact of COVID-19 on syringe services programs in the United States. AIDS Behav.

2020;24(9):2466–8. https://doi.org/10.1016/j. drugpo.2020.102895. Medline:32741718

- Whitfield M, Reed H, Webster J, Hope V. The impact of COVID-19 restrictions on needle and syringe programme provision and coverage in England. Int J Drug Policy. 2020;83:102851. https://doi.org/10.1016/j. drugpo.2020.102851. Medline:32736959
- 9. Tyndall M. Safer opioid distribution in response to the COVID-19 pandemic. Int J Drug Policy. 2020;83:102880. https://doi.org/10.1016/j.drugpo.2020.102880.
- 10. Hochstatter KR, Akhtar WZ, Dietz S, Pe-Romashko K, Gustafson DH, Shah DV, et al. Potential influences of the COVID-19 pandemic on drug use and HIV care among people living with HIV and substance use disorders: experience from a pilot mhealth intervention. AIDS Behav. Forthcoming 2020. https://doi.org/10.1007/s10461-020-02976-1. Medline:32705370
- 11. Vasylyeva TI, Smyrnov P, Strathdee S, Friedman SR. Challenges posed by COVID-19 to people who inject drugs and lessons from other outbreaks. J Int AIDS Soc. 2020;23(7):e25583. https://doi.org/10.1002/ jia2.25583. Medline:32697423
- 12. Chang J, Agliata J, Guarinieri M. COVID-19—Enacting a "new normal" for people who use drugs. Int J Drug Policy. 2020;83:102832. https://doi.org/10.1016/j. drugpo.2020.102832. Medline:32654930
- 13. Public Health Agency of Canada. Statement from the chief public health officer of Canada on COVID-19. Ottawa: Public Health Agency of Canada; 2020.
- 14. Slavova S, Rock P, Bush HM, Quesinberry D, Walsh SL. Signal of increased opioid overdose during COVID-19 from emergency medical services data. Drug Alcohol Depend. 2020;214:108176. https://doi.org/ 10.1016/j.drugalcdep.2020.108176. Medline: 32717504
- 15. American Medical Association. Issue brief: reports of increases in opioid-related overdose and other concerns during COVID pandemic. Chicago: American Medical Association; 2020.

- 16. Wise J. Covid-19: risk of second wave is very real, say researchers. BMJ. 2020;369:m2294. https:// doi.org/10.1136/bmj.m2294. Medline:32518177
- 17. Canadian Network on Hepatitis C Blueprint Writing Committee Working Groups. Hepatitis C elimination: sustaining the Canadian response during and after COVID-19. Montreal: Canadian Network on Hepatitis C; 2020.
- 18. Guise A, Witzel TC, Mandal S, et al. A qualitative assessment of the acceptability of hepatitis C

remote self-testing and self-sampling amongst people who use drugs in London, UK. BMC Infect Dis. 2018;18(1):281. https://doi. org/10.1186/s12879-018-3185-7. Medline: 29914381

19. Serper M, Cubell AW, Deleener ME, et al. Telemedicine in liver disease and beyond: can the COVID-19 crisis lead to action? Hepatology. 2020;72(2):723–8. https://doi. org/10.1002/hep.31276. Medline:32275784