ORIGINAL RESEARCH

The 14th Canadian Symposium on Hepatitis C Virus: From research breakthroughs to equitable health care for priority populations

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ABSTRACT

BACKGROUND: The hepatitis C virus (HCV) affects approximately 214,000 Canadians. While the availability of safe, effective direct-acting antivirals (DAA) has led to decreased rates of chronic HCV infection and increased treatment uptake, major challenges to achieving HCV elimination remain. This report summarizes key findings from the 14th Canadian Symposium on Hepatitis C Virus, which focused on advancing equitable strategies for HCV elimination through multidisciplinary dialogue. **METHODS:** The symposium was titled "From Research Breakthroughs to Equitable Healthcare for Priority Populations," and brought together researchers, clinicians, policymakers, and community stakeholders to advance Canada's efforts toward HCV elimination by 2030. Hosted in Quebec City by the Canadian Network on Hepatitis C (CanHepC), the symposium highlighted key findings across biomedical, clinical, population health, and health services research. **RESULTS:** Biomedical presentations emphasized progress in HCV vaccine develop-

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ment, host-virus interactions, and T-cell exhaustion mechanisms. Notable findings included novel insights into immune escape pathways, host-targeted antivirals, and epigenetic barriers to T-cell reinvigoration. Clinical and population health sessions addressed inequities in HCV prevention and care for women and pregnant people, incarcerated individuals, and people who use drugs. Presenters showcased the impact of decentralized point-of-care HCV RNA testing on diagnosis and linkage to treatment in high-risk populations, including those with unstable housing. Implementation-focused discussions included updates to the national Blueprint to Inform HCV Elimination and strategies to scale nurse-led and community-based interventions. **CONCLUSIONS:** The symposium emphasized the importance of integrating scientific advances with community-driven and equity-focused actions, particularly for priority populations experiencing systemic barriers to care. Through inclusive dialogue and multidisciplinary knowledge exchange, the symposium reaffirmed CanHepC's commitment to bridging research and practice to accelerate the path toward HCV elimination in Canada.

KEYWORDS: biomedical; CanHepC; clinical; epidemiological; hepatitis C virus; implementation science; people who inject drugs; point of care testing; public health; social sciences

LAY SUMMARY

Hepatitis C is a virus that affects about 214,000 people in Canada. Thanks to new medications called direct-acting antivirals, more people are being cured, and the number of infections is going down. However, there are still serious challenges in ensuring that everyone, especially those most affected, can be tested, treated, and cured. The 14th Canadian Symposium on Hepatitis C Virus, hosted by the Canadian Network on Hepatitis C, brought together researchers, health care providers, community leaders, and people with lived experience to share the latest research findings. The event focused on how to close gaps in care and improve health equity. The presenters shared research on developing a vaccine for hepatitis C, understanding how the virus hides from the immune system, and how to design better treatments. Others focused on the real-world challenges people face when trying to be tested and treated, especially pregnant women, people in prison, and people who use drugs. A major theme was the importance of bringing health care services to where people are, such as offering rapid, on-the-spot hepatitis C testing in community settings. Discussions also highlighted how nurse- and peer-led programs can build trust and improve care. Overall, the symposium showed that while medical advances are important, eliminating hepatitis C in Canada also requires community engagement, reducing stigma, and making care more accessible for everyone.

INTRODUCTION

An estimated 56.8 million people are living with chronic hepatitis C virus (HCV) infection worldwide, leading to 290,000 deaths in 2019 (1,2). In Canada, 59% of the ~214,000 people living with HCV have been diagnosed, and if untreated, up to 50% of those with chronic infection will develop cirrhosis, end-stage liver disease, and hepatocellular carcinoma (3–8). HCV-related costs in Canada are estimated at $160 million/year, and projected to increase to $260 million/year by 2032 (4). Well-tolerated, direct-acting antiviral (DAA) therapies with cure rates exceeding 95% are one of the greatest medical advances in decades and have led the World Health Organization (WHO) and the Government of Canada to set targets to eliminate HCV by 2030 (9,10). As of 2025, all but five of Canada's 13 provinces and territories are on track to eliminate HCV as a public health threat by 2030 (11). The exceptions are Manitoba, the Northwest Territories, Nunavut, Ontario, and Quebec (11). Achieving elimination in these provinces and territories will require significant advances in prevention, diagnosis, linkage to care, and treatment. This commentary summarizes the 14th Canadian Symposium on Hepatitis C Virus (CSHCV), a conference organized by the Canadian Network on Hepatitis C (CanHepC), which took place in Quebec City, Quebec, Canada, on February 28, 2025.

The Canadian Network on Hepatitis C (CanHepC)

CanHepC is a national research and training network focused on the hepatitis C virus, funded by the Canadian Institutes of Health Research (CIHR) in partnership with the Public Health Agency of Canada (12). Its overarching goal is to conduct impactful research that improves health outcomes for

people living with HCV by closing the gap between knowledge and practice. CanHepC includes 67 investigators, 27 student trainees, 12 knowledge users, and four collaborators from across Canada. Since its inception in 2003 as the National CIHR Research Training Program in Hepatitis C, 144 graduate students and 97 summer students have participated in its training, education, and mentorship programs. In addition to the research and training programs, CanHepC offers cross-cutting platforms on knowledge translation, equity, diversity, inclusivity, accessibility, and justice, and Indigenous peoples.

CanHepC's research program spans two major areas of focus: prevention and treatment, and long-term consequences. The first area aims to optimize hepatitis C prevention and treatment programs to support Canada's goals of eliminating the disease. Despite the availability of DAAs, new infections and reinfections continue to occur, underscoring the need for improved prevention and care strategies. This research explores the behavioural, social, and structural drivers of transmission; the immune correlates needed to inform vaccine development; improved monitoring of the cascade of care; and the application of implementation science to design effective, equity-focused interventions for underserved populations. The second area focuses on the long-term health consequences of HCV infection and treatment, investigating liver-related and non-liver-related outcomes after cure, the frequency of reinfection in high-risk populations, and the care continuum for pregnant individuals. Together, these efforts generate practical, community-engaged evidence to drive Canada's progress toward HCV elimination by 2030.

The 14th Canadian Symposium on Hepatitis C Virus (CSHCV)

For more than a decade, CanHepC has hosted the CSHCV to advance interdisciplinary research, foster collaboration, and promote knowledge translation in the HCV landscape across Canada. The 14th edition of the symposium, held in conjunction with the 2025 Canadian Liver Meeting in Quebec City, was co-chaired by Dr Guillaume Fontaine (McGill University, Canada) and Dr Marie-Louise Vachon (Université Laval, Canada), and guided by the theme "From Research Breakthroughs to Equitable Healthcare for Priority Populations." As Canada continues its efforts toward HCV elimination, significant challenges remain, particularly among equity-deserving groups who face systemic barriers to care. This year's symposium brought together a diverse range of interest-holders and rights-holders, including scientists, clinicians, nurses, community-based providers, people with lived and living experience, Indigenous leaders, and public health decision-makers. The 1-day program was structured to cover the four pillars of CIHR, including sessions on biomedical research, clinical research, population health research, and health services research. It also included a panel discussion involving the Canadian AIDS Treatment Information Exchange (CATIE) and people with lived and living experience of HCV.

Biomedical research: advancing vaccine development, host-pathogen understanding, and immune profiling for hepatitis C elimination

A prophylactic vaccine to prevent HCV infections is one of the key tools to reach the HCV global elimination targets by 2030. Developing such a vaccine requires a deep understanding of how the virus infects humans and how the immune system responds. This session focused on the main challenges in HCV vaccine development and host immune responses.

Dr Thomas Pietschmann (Twincore, Germany) outlined major obstacles to HCV vaccine design. Around 30% of infected individuals can clear the virus spontaneously, suggesting that natural immunity is possible and a vaccine is feasible (13). However, the virus' high genetic diversity and incorporation of host lipoproteins into its outer layer (lipoviro-particles) help it evade immune responses (14). One such lipoprotein, ApoE, makes HCV more resistant to neutralizing antibodies (15). Pietschmann proposed three key steps in developing an HCV vaccine: 1) developing an in vitro and in vivo system to quantify protective immunity; 2) defining the determinants of protection, and 3) using these determinants to develop an effective vaccine candidate. He described previous research focused on identifying diversity of neutralizing antibody responses of various HCV strains. His team studied 101 polyclonal antibodies from humans and tested their ability to neutralize 30 HCV strains. They identified six representative strains that capture the diversity of neutralizing responses. This narrows the number of HCV strains needed to evaluate differences in antibody neutralization profiles for potential vaccine candidates. Moreover, the antibodies with the greatest neutralization use the VH1-69 heavy chain that occupies

the viral CD81 binding site (16). Finally, of all the vaccine candidates tested, the VSV-vectored E1 and E2 platform appear to induce the most potent cross-neutralizing antibodies across all six HCV reference strains, suggesting its promising potential as an HCV vaccine candidate. These findings highlight important steps, viral targets, and various vaccine platforms that can be leveraged to produce an effective vaccine.

Dr Mohamed Abdel Hakeem (Emory University, United States) presented new insights into T-cell exhaustion in chronic viral infections. While about 30% of adults spontaneously clear HCV, 75% develop chronic infection, making HCV an excellent model for studying exhausted T cells (T_{ex}) (17). Although HCV has a human-specific tropism, Hakeem and others' work has shown that the chronic lymphocytic choriomeningitis virus (LCMV) and chronic HCV infection impair virus-specific CD8 T cells and increase the frequency of T_{ex} (18,19). Research using mouse models of chronic infection has shown that T_{ex} gradually loses function over time, driven by cellular, genetic, and epigenetic factors (18–22). Once this "scarring" occurs, these cells cannot become memory T cells and remain dysfunctional even after the infection is cleared (22). Although checkpoint inhibitors, like αPD-L1, can reinvigorate some T_{ex} effector functions, the epigenome remains scarred and inflexible, potentially limiting future immunotherapies. To overcome these challenges, Hakeem's groundbreaking proteomic profiling is being utilized to improve our understanding of CD8 T-cell exhaustion in chronic infection. His findings show acute-resolving (Armstrong strain) and chronic (Clone 13) LCMV infections lead to dynamic and distinct proteomic and phospho-proteomic profiles in LCMV-specific CD8 T cells during infection and likely contribute to viral T_{ex} loss of function. He hopes the identification of unique T-cell protein signatures will help design novel therapies to enhance immune responses in a variety of chronic viral diseases and improve patient clinical outcomes in the long term.

PhD candidate Samaa Gobran (Université de Montréal, Canada) presented research on the interaction between HCV and HIV. In people living with HIV (PWH), co-infection with HCV is linked to a larger HIV-DNA reservoir in CD4+ T cells (23). Gobran investigated whether HCV-specific CD4+ T cells might serve as hidden reservoirs for HIV. Using samples from individuals with and without chronic HCV, her team found that CD4+ T cells more easily infected HCV-specific CD4+ T cells in vitro. These cells displayed a T follicular helper (T_{fh}) phenotype and supported active HIV infection. After spontaneous HCV clearance, T_{fh} cellular phenotypes shifted toward a Th_{17} profile with increased levels of integrated HIV-DNA relative to controls. Her findings suggest HCV-specific CD4+ T cells may represent long-lived HIV reservoirs, and HCV clearance can reshape these reservoirs and could have implications for future HIV cure strategies.

Understanding how viruses interact with host cells is crucial for the development of antiviral therapies. PhD candidate Carla Gallardo-Flores (Queen's University, Canada) studied the role of an immune sensor called protein kinase R (PKR) in the antiviral activity of cyclosporine A (CsA) (24). CsA, commonly used in transplant medicine, also inhibits cyclophilins and has broad antiviral effects against viruses, including coronaviruses and HCV (25–28). PKR is part of the innate immune system and detects double-stranded RNA, a common feature in viral replication. Gallardo-Flores found that when PKR is genetically removed, CsA becomes less effective at blocking both HCV and a common cold coronavirus. Moreover, PKR activation was disrupted by CsA or cyclophilin depletion. These findings suggest that PKR is part of the antiviral mechanism of CsA and highlight the potential of HCV as a model for designing broad-spectrum, host-targeted antivirals.

The continued efforts to elucidate immunological and virological mechanisms underlying host-HCV interactions are essential for developing protective lifelong HCV prophylaxis and reducing the negative clinical outcomes associated with chronic HCV infection.

Clinical research: scaling point-of-care testing and improving linkage to care for priority populations

The clinical research session of the symposium highlighted real-world challenges and innovations in HCV testing, treatment access, and care continuity across priority populations. Speakers shared evidence on novel testing strategies, population-specific interventions, and the role of nurse-led and mobile outreach models to close these gaps. A consistent theme was the need for approaches that are community-informed, accessible, and tailored to populations facing structural and systemic barriers to care.

Improved testing and diagnosis are essential to achieving HCV elimination. Fontaine presented an

implementation science perspective on decentralized point-of-care testing initiatives in Canada and Australia. Point-of-care testing for HCV antibodies and HCV RNA offers significant advantages over the standard of care, laboratory-based tests, by reaching disproportionately affected populations such as people who inject drugs, Indigenous peoples, and those in the carceral system, reducing losses to follow-up and increasing treatment initiation and uptake (29–33). He highlighted findings from the national Australian HCV Point-of-Care Testing Program, which involves 104 clinical sites and more than 400 unique testing locations, including prisons, drug treatment services, and needle and syringe programs (NSPs) (34). Using qualitative and mixed-method approaches, the team identified 693 multilevel barriers and facilitators that influence the uptake and sustainability of point-of-care testing. Key facilitators included strong political and policy support, effective training and quality assurance, provider engagement, and alignment with service user priorities. Barriers included inconsistent site readiness, concerns over linkage to care, IT/connectivity challenges for data collection and transmission, and regulatory or logistical constraints. The Australian findings are being translated into Canadian contexts through CIHR-funded initiatives, including formative implementation research to co-design and test decentralized HCV point-of-care testing models in British Columbia, Ontario, and Quebec (35–38). The presentation emphasized the importance of early implementation science integration to identify barriers/facilitators to point-of-care testing, aligning testing strategies to local needs, and designing tailored implementation strategies to facilitate scalable models of care (39–43).

Pregnant individuals represent an underserved population in the Canadian HCV landscape. In Ontario, a recent cascade analysis revealed that 43% of pregnant individuals who tested HCV RNA–positive had not received treatment (44). Dr Mia Biondi (York University, Canada) highlighted critical gaps in perinatal and postpartum HCV care. While infection rates during pregnancy are rising, rates of pre-conception and postpartum treatment remain low (45). Clinical evidence supports the safety and efficacy of treating HCV during pregnancy to eliminate vertical transmission, yet delays in treatment are common, with some individuals experiencing up to five pregnancies before receiving care (44,46,47). Despite updated recommendations from the U.S. Centers for Disease Control and Prevention (CDC) and the Society of Obstetricians and Gynaecologists of Canada for universal HCV screening during pregnancy, implementation remains inconsistent (48,49). However, more work will be required to apply these recommendations and increase linkage to care, both before and after childbirth. Even in the era of effective DAAs, children are still developing advanced liver disease (50). According to Biondi, there are many remaining challenges in the perinatal-infant cascade, including the need to implement recommendations for universal screening during pregnancy. U.S. studies have shown that far from all pregnant individuals were tested after guidelines were published (51). Treatment in pregnancy and during breastfeeding will require case-by-case decision-making until recommendations are made. Implementation efforts will also be important for infant screening and treatment.

Lindsey Myles (HepCure, Canada) presented data from a nurse-led outreach program using mobile point-of-care RNA testing for unhoused individuals who use substances. Over 16 months, the team performed 562 tests; 63% were RNA-positive for HCV. Remarkably, all but seven clients returned within an hour for their results. Among those who tested positive (n = 352), 61% (216) had started antiviral therapy; half of these (108) had already completed treatment, 12% (26) remained on therapy, and 38% (82) were lost to follow-up. These findings highlight the feasibility and clinical impact of rapid HCV RNA testing in mobile, peer-supported settings that prioritize immediate engagement.

Correctional facilities remain another key context for expanding HCV testing. Tamara Barnett (York University, Canada) shared findings from research on HCV self-testing in incarcerated populations, where stigma, fear of repercussions, and distrust in institutional care remain significant barriers. The participants emphasized the importance of authentic, non-stigmatizing educational materials, access to self-testing kits on release, and options for private result delivery. These preferences should inform the design of more acceptable and accessible self-testing programs.

While effective HCV therapies are available, key populations continue to face critical gaps in access to testing and care. Clinical innovations such as point-of-care testing and self-testing, when combined with tailored implementation approaches, offer powerful tools to expand diagnosis and linkage to care. Achieving HCV elimination will

require not only scientific advances but a deep commitment to meeting the clinical needs of priority populations with flexibility, equity, and urgency.

Panel discussion: centring women in the hepatitis C response—addressing gendered barriers and opportunities for care

A panel session titled "Centring women in the hepatitis C response" brought together clinicians, researchers, and women with lived experience to highlight the urgent need for gender-responsive approaches to hepatitis C prevention, testing, and treatment. While HCV has historically been more common among men, new infections among women are rising, particularly among those who use drugs, are incarcerated, or are exposed to gender-based violence. Panellists discussed how structural inequities, such as stigma, discrimination, and lack of gender-informed care, continue to limit women's engagement across the HCV care cascade.

The speakers emphasized that many women face unique vulnerabilities that increase their risk of infection and limit their ability to access services. Traditional models of care are often not designed with women in mind, overlooking the intersecting challenges they face, including housing instability, childcare needs, and trauma. Strategies such as embedding testing and treatment within perinatal care, integrating peer support, and offering women-only harm reduction services were highlighted as promising approaches. Importantly, panellists underscored that Indigenous women and trans and gender-diverse individuals face particularly high barriers to care and must be meaningfully included through culturally grounded, inclusive services.

The session concluded with a clear call to action: eliminating hepatitis C in Canada requires recognizing women as a priority population and designing services that reflect their realities. Addressing gender-specific barriers and centring women's voices will be crucial for Canada to move closer to an equitable and effective HCV response.

Population health research: understanding equity and gaps across the hepatitis C care cascade

This session focused on understanding how structural, social, and biological determinants shape outcomes across the HCV care cascade. Speakers highlighted persistent inequities in screening, diagnosis, and treatment access among women, children, people who inject drugs, and racialized populations. Using gender analyses, population-based data, and calls for surveillance reform, the presentations underscored the need for tailored interventions that reflect the lived realities of diverse communities and address gaps that impede progress toward HCV elimination.

Dr Sarah Larney (Université de Montréal, Canada) discussed how sex (biological factors) and gender (social roles) shape health outcomes differently and interactively. She highlighted gender disparities in health care-seeking behaviour, clinical assessment, and treatment. Larney emphasized that women often face more adverse outcomes because medical research has historically centred on cisgender men, limiting the applicability of findings. She emphasized key findings on sex and gender differences across the HCV care cascade. Notably, spontaneous clearance of HCV is more common in females due to biological immune differences, but most other disparities arise from gendered social factors (52). Women face higher HCV incidence but encounter significant barriers to harm reduction and treatment, including stigma, violence, and limited-service access (53,54). Although opioid agonist therapy (OAT) is widely recognized as effective in reducing HCV transmission (55,56), recent studies, including the INC3 collaboration, show it is significantly less protective for women than for men who inject drugs (57). Results from a 2024 meta-analysis led by Levinsson and colleagues revealed a complex interplay of sex and gender differences across multiple stages of the hepatitis C care cascade (58). These differences contribute to disparities that disadvantage different groups, particularly women at varying points in their care journey, highlighting the need for gender-responsive interventions (58). Women face unique challenges navigating the treatment system for HCV, especially when intersecting with social marginalization and systemic biases within health care (59). Larney called for gender-responsive HCV interventions and models of care, and improvements in how sex and gender data are collected and applied in research, noting the need to address gaps for gender-diverse populations and to theorize systemic inequities with support from social science collaborations.

Dr Jean Damascene Makuza (University of British Columbia, Canada) presented an analysis of disparities in hepatocellular carcinoma (HCC) screening and detection among individuals with

hepatitis B virus (HBV) infection or HCV infection and cirrhosis in British Columbia (60). Among more than 14,000 individuals included, just over half had been screened for HCC, and fewer than 12% had been diagnosed with HCC (60). Screening rates were lowest among men and people who inject drugs, while detection was more common among East and South Asian communities, possibly reflecting more targeted outreach efforts. Notably, frequent health care visits and diabetes were inconsistently linked to higher screening, highlighting that access alone does not ensure uptake (60). Makuza called for improved surveillance infrastructure and interventions that focus on high-risk populations, which are typically missed by conventional screening approaches. He emphasized that integrating HCC surveillance into national hepatitis elimination plans will be crucial to reducing liver-related morbidity and mortality.

Dr Andrew Mendlowitz (University of Toronto, Canada) presented findings from a population-based study in Ontario evaluating HCV testing rates among infants born to mothers with HCV. The results were striking: only 24.8% of these infants were ever tested, and just 6.6% received the recommended RNA test. Even when mothers were diagnosed before or during pregnancy, fewer than 40% of their infants were tested, often too early to yield reliable results. The study also found that maternal characteristics had a limited influence on testing rates, while infant sex (female) and more frequent physician visits were associated with higher testing. Mendlowitz concluded that current practices in pediatric HCV testing are inadequate, with significant delays and missed diagnoses, particularly for infants of mothers diagnosed after delivery (46). He advocated for new screening recommendations, particularly for children whose mothers test positive postpartum, and urged improvements in follow-up and surveillance to avoid undiagnosed pediatric infections (46).

Together, these presentations demonstrated how inequities in HCV prevention, diagnosis, and treatment are shaped by intersecting factors such as gender, race, age, and health care access. Addressing these disparities requires targeted efforts to redesign policies, strengthen surveillance, and integrate equity-focused strategies across the care cascade. Population health research must continue to centre the voices and needs of marginalized communities to ensure that Canada's HCV elimination efforts are inclusive, effective, and just.

Health services research: implementation science and policy-driven solutions to bridge gaps in hepatitis C care

This session highlighted how structural reforms, evidence-informed policy, and community-engaged models can advance health equity and improve HCV outcomes. Presenters shared real-world implementation strategies aimed at reaching underserved populations, strengthening decision-making systems, and reforming institutional barriers to care.

Dr Seun Falade-Nwulia (Johns Hopkins University, United States) presented a series of initiatives addressing disparities in HCV care access in the United States. She reported that despite the availability of highly effective DAAs, many people in the United States, including Black populations, the unhoused, and those who inject drugs, remain underserved (61). Rising HCV incidence, particularly in rural areas, has been driven by injection drug use, compounded by limited access, stigma, and fragmented care systems (62). Falade-Nwulia shared findings from several implementation projects. A telemedicine-based program in Maryland achieved high cure rates among people with substance use disorders by leveraging local nurses and remote pharmacy support. Another initiative, Access Telehealth, integrated HCV and opioid use disorder treatment in syringe service programs, receiving strong endorsement from stakeholders for its flexibility and peer involvement (63). The RAPID Hepatitis C trial further demonstrated that on-site care at opioid treatment programs (OTPs) dramatically increased treatment initiation (89% versus 21%) compared to external referral, despite similar cure rates (64). Barriers to linkage to care, including housing instability, remained significant. Finally, she highlighted a micro-elimination effort in an HIV clinic that reduced HCV viremia from 36% in 2009 to 2% in 2021 through coordinated care, consistent protocols, and dedicated case management (65). Falade-Nwulia concluded that eliminating HCV requires equity-driven strategies embedded in community-based services, supported by system-level commitment and peer leadership.

Dr Mike Wilson (McMaster University, Canada) shifted focus to the role of evidence support systems in driving policy and service innovation for supporting HCV elimination in Canada. Drawing on the work of the Global Commission on Evidence and national consultations with the CIHR, Wilson advocated for the establishment of

structured systems that bridge the divide between research producers and decision-makers. He described the living evidence synthesis model, in which continuously updated systematic reviews serve as global reference points to reduce redundancy and enhance responsiveness. He stressed that different types of evidence, such as quantitative, qualitative, modelling, and cost-effectiveness, are needed throughout policy development and implementation. Canada, like many countries, has underinvested in this infrastructure. To address this, he proposed a national model of demand-driven evidence units, supported by learning platforms and embedded equity principles (66). Key enablers include provincial linkages, skilled intermediaries, and engagement with Indigenous communities. Wilson emphasized the importance of balancing long-term evidence generation with rapid synthesis to seize policy windows, calling for a "coalition of the willing" across sectors to institutionalize a culture of evidence-informed decision-making.

Dr Nadine Kronfli (McGill University, Canada) presented results from the Needle Exchange Uptake Study (NEXUS), examining barriers to the uptake of the prison needle exchange programs (PNEP), evidence-based interventions for the prevention of bloodborne infections, including HCV, among people who inject drugs in Canadian federal prisons (67–69). Canada is only one of nine countries globally offering PNEPs; however, <10% of people who inject drugs in Canadian federal prisons have access to the program, and two of nine federal prisons offering PNEP had yet to enrol a participant by the end of 2024 (70). Canada's unnecessarily complex threat and risk assessment for PNEP participation emerged as a central barrier—the only country without an automatic approval process for PNEP participation worldwide. Through 34 focus groups with 215 individuals across nine federal prisons with PNEP (including correctional officers, health care workers, and people in prison), Kronfli's team identified key barriers to PNEP uptake: lack of confidentiality/privacy, fear of repercussions due to drug use and being targeted, and stigma for participation (71,72). Participants proposed structural changes, including whole-of-sector education, supervised injection sites, and external program delivery, including with peers, to increase trust and access. While correctional officers favoured supervised injection sites as they were perceived to improve safety, people in prison preferred peer-based PNEP delivery models. Kronfli emphasized that these reforms must be accompanied by education, accountability, and transparency. A recent cost-benefit analysis of the Canadian PNEP showed that PNEPs save $2 in health care costs for every $1 spent, reinforcing the call for action (73). Similar analyses in Australia have reinforced the cost-effectiveness of these programs (74). Kronfli concluded by urging stakeholders to lead with science and ensure that PNEPs are implemented with fidelity and purpose—especially in the face of growing resistance to harm reduction.

Together, these presentations illustrated the power of integrating implementation science, equity frameworks, and systems thinking into health care service delivery. Achieving HCV elimination will require more than effective treatments; it demands inclusive, community-led approaches, institutional reform, and a national commitment to evidence-informed, equity-focused care.

Key outcomes and future directions

The 14th CSHCV brought together over 125 participants, including researchers, policymakers, industry representatives, trainees, and individuals with lived and living experience from across Canada. The program featured original research spanning all four CIHR pillars and highlighted the importance of interdisciplinary collaboration to advance Canada's HCV elimination goals.

A recurring theme throughout the symposium was the need for meaningful community engagement at every stage of research, ensuring that new evidence is translated into practice in ways that reflect the needs and realities of the affected populations. Participants underscored that achieving Canada's HCV targets will require clear, coordinated leadership from governments, community stakeholders, and the scientific and clinical communities working together. Across clinical, implementation, and policy-focused sessions, equity was reaffirmed as a core principle guiding the HCV response. Speakers emphasized the importance of adapting services for women, Indigenous peoples, people who use drugs, and those involved in the criminal justice system through co-designed, community-embedded approaches.

Several presentations illustrated how implementation science is accelerating the translation of evidence into real-world impact, from point-of-care testing pilots and integrated care models to peer-led harm reduction initiatives. The sympo-

sium also revealed emerging research priorities, including the role of sex and gender in shaping HCV outcomes, persistently low rates of infant and perinatal HCV testing, and gaps in HCC screening. Participants further stressed the need for a concrete suite of evidence-based actions and strategies, embedded within a broader STBBI and public-health framework, to improve the well-being of Canadians and priority populations.

As Canada advances toward its 2030 elimination targets, the symposium reinforced that success will require more than scientific breakthroughs: it will depend on equity-driven implementation and sustained collaboration among researchers, service providers, communities, and decision-makers. Recordings from the sessions have been made available on the CanHepC website for public and academic use. Feedback from participants will help shape next year's symposium, which promises to offer another rich and impactful exchange of knowledge and practice.

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