

# Developing Canada's Research Base for Harm Reduction and Health Equity Approaches to HIV Prevention and Treatment

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## ABSTRACT

In the area of infectious disease control, Canadian research efforts to address the HIV epidemic in Vancouver's Downtown East Side neighbourhood have fueled the development of harm reduction and health equity perspectives worldwide. These research efforts have, in turn, reshaped the field of public health approaches to HIV prevention and control. As a result of the intensive and sustained research initiatives led by Canadian scientists Drs. Thomas Kerr and Evan Wood, the 'HIV problem' and public health responses to it have been radically reconceptualized – shifting from an exclusive focus on individual choice towards asking fundamental questions about our society and the structural features that put people at risk for contracting HIV. Their research on harm reduction and health equity related to HIV vulnerability and outcomes has informed and shaped: 1) the establishment of North America's first supervised injection facility, Insite, located in Vancouver's Downtown East Side neighbourhood; 2) dramatic changes to Vancouver's needle exchange policies; 3) HIV treatment approaches among injection drug using populations (IDU). By drawing attention to the ways in which Canadian health care policies and programs can be restructured to better support the health of vulnerable populations, the work of Drs. Kerr and Wood represents a uniquely Canadian public health milestone.

**Key words:** Infectious disease transmission; HIV; drug addiction; harm reduction; injection drug use; supervised injecting facilities

La traduction du résumé se trouve à la fin de l'article.

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In the area of infectious disease control, Canadian research efforts to address the HIV epidemic in Vancouver's Downtown East Side neighbourhood have fueled the development and advancement of harm reduction and health equity perspectives worldwide. These research efforts have, in turn, reshaped the field of public health approaches to HIV prevention and treatment.

As a result of the intensive and sustained research initiatives led by two young Canadian scientists working at the British Columbia Centre for Excellence in HIV/AIDS (BC-CfE), Drs. Thomas Kerr and Evan Wood, the 'HIV problem' and public health responses to it have been radically reconceptualized – shifting from an exclusive focus on individual choice towards asking fundamental questions about our society and the structural factors that put people at risk for contracting HIV. Methodological advances made at the BC-CfE have been instrumental in this area, including the launch of multiple studies involving highly vulnerable individuals (e.g., people who inject drugs, sex workers, people who are HIV-positive, street-engaged youth, etc.), as well as the use of innovative ethnopedemiological techniques to illuminate for policy-makers as well as front-line public health practitioners the links between context, structure and individual health outcomes. More specifically, their research on harm reduction and health equity related to HIV vulnerability and outcomes has informed and shaped: 1) the establishment of North America's first supervised injection facility, Insite, located in Vancouver's Downtown East Side neighbourhood; 2) dramatic changes to Vancouver's needle exchange policies;

3) treatment approaches for HIV-seropositive individuals who use injection drugs (IDU).

In September 2003, in the wake of an explosive outbreak of HIV and high rates of overdose death among local IDU, Vancouver opened a pilot supervised injection facility (SIF). Before this facility was established, however, Drs. Kerr and Wood and their team at the BC-CfE developed a rationale for establishing a SIF research pilot study and undertook extensive feasibility work, which was instrumental in gaining approval to open a facility of this kind.<sup>1-5</sup> Once the facility was established, Drs. Kerr and Wood developed and implemented an evaluation framework which involved prospective cohort studies, data linkages to government-held data as well as ethnographic research.<sup>6</sup> To date, over 30 studies evaluating the SIF have been published in top-ranking medical and public health journals (e.g., *The New England Journal of Medicine*, *The Lancet*, *The British*

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The authors developed the case for this nomination based on a large body of scientific evidence generated by Drs. Kerr and Wood and their collaborators at the BC Centre for Excellence in HIV/AIDS as well as research collaborations undertaken elsewhere in Canada and internationally.

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*Medical Journal*, and *The Canadian Medical Association Journal*).<sup>7-10</sup> These studies have documented benefits including reductions in HIV risk behaviours, decreases in overdose mortality and improved access to addiction treatment. The evaluation results also have shown that many concerns regarding potential negative outcomes of the SIF are unwarranted. References for all SIF evaluation studies can be found on the BC-CfE Urban Health Research Initiative Website at: <http://uhri.cfenet.ubc.ca/content/view/57/92/>.

In addition to conducting rigorous research on the Vancouver SIF, Drs. Kerr and Wood have also undertaken extensive knowledge translation (KT) activities. This included engaging extensively with the media to translate SIF-related research findings into improved knowledge among the public. For example, in 2006 alone, Dr. Kerr participated in more than 100 print, radio and television interviews with local, national and international media outlets. Drs. Kerr and Wood also raised awareness among multiple audiences by delivering dozens of SIF-based presentations and developed plain language summaries of SIF findings (see: <http://uhri.cfenet.ubc.ca/content/view/57/92/>). These activities were critical in maximizing informed public engagement about issues relating to HIV prevention and control.

Drs. Kerr and Wood's research and KT efforts specific to the SIF have had a substantial impact on promoting improvements in the health of Canadians and the health care system. It has been cited that the research by Drs. Kerr and Wood, along with resulting media coverage and public outcry, was the leading factor in the federal government delaying the expected closure of the facility and instead giving the facility an 18-month extension. Through their work, Drs. Kerr and Wood have supported the continuation of the SIF, which is helping to promote efficiency in the health care system. Indeed, several of the SIF evaluation studies indicated that the facility is acting as a critical point of care for the highest-risk individuals and that SIF staff are performing an important function by linking individuals with appropriate preventive health care services.

Drs. Kerr and Wood have also made significant contributions to our understanding of needle exchange program (NEP) delivery and efficacy, which has led to dramatic changes in Vancouver's NEP programs, as well as subsequent declines in HIV incidence. In the wake of Vancouver's HIV outbreak in the mid-1990s, some international experts questioned the benefits of needle exchange, as a high-volume needle exchange had operated in Vancouver since the late 1980s. Using their established research infrastructure, Drs. Kerr and Wood undertook a number of studies to investigate why HIV infections had increased so dramatically in the 1990s despite an established needle exchange system. Their work revealed that a number of programmatic deficiencies with Vancouver's NEP drove the outbreak. They demonstrated that the most important reason why individuals used contaminated syringes in Vancouver was difficulty in accessing sterile syringes.<sup>11</sup> The existing NEP system was not distributing enough syringes because of restrictive rules and the fact that the exchange was closed at night.<sup>12</sup> Subsequent research conducted by Drs. Kerr and Wood demonstrated that other NEP operated by other drug users that were open at night had more success in reaching IDU at highest risk of HIV infection.<sup>13,14</sup> After engaging in extensive knowledge translation activities to disseminate these findings,<sup>15,16</sup> the Vancouver Coastal Health Authority made fundamental reforms to their needle exchange program from 2000-2002, based on the findings and recommendations of Drs. Kerr and Wood. Changes included decentralizing and expanding

the NEP and moving away from a focus on exchange toward a focus on distribution. Limits on the number of syringes that could be obtained were removed and there was an expansion in the number of sites and methods used for distribution, including the involvement of peer groups. In a study recently published in the *American Journal of Public Health*, Drs. Kerr and Wood evaluated the impact of these reforms and found that the restructuring was associated with a dramatic reduction in rates of syringe borrowing (20% in 1998 to 9% in 2005) and HIV incidence.<sup>17</sup> These declines reveal the extent to which this public health intervention made an impact on the health of vulnerable populations. The large body of research generated by Drs. Kerr and Wood has been instrumental in clarifying our understanding of Vancouver's HIV epidemic and the factors that contributed to it. Without this research to inform more effective NEP distribution, public health efforts to stem the tide of this epidemic would have been severely hampered.

Drs. Kerr and Wood's research has also made a substantial impact on the delivery of treatment for HIV infection for IDU. By identifying inequalities in access to antiretroviral therapy (ART) among IDU – including a failure by physicians to initiate ART for IDU when clinically indicated<sup>18</sup> – and high rates of medically inappropriate ART prescriptions by physicians,<sup>19</sup> better practices were put in place to promote more equitable health service delivery. In addition, Drs. Kerr and Wood documented that IDU were more likely to die without having ever received HIV therapy.<sup>20,21</sup> Conversely, they also documented that despite physician reluctance to start IDU on HIV therapy for fear of treatment failure or the development of viral resistance, IDU adherent to appropriate ART experienced the same health benefits as comparably adherent non-IDU patients.<sup>22,23</sup> Other research activities led by Drs. Kerr and Wood identified important social and structural barriers to HIV treatment access among IDU.<sup>24,25</sup> For example, they documented the benefits of linking HIV therapy with addiction treatment<sup>26</sup> and the barriers that incarceration can have on treatment access and success.<sup>27-29</sup>

In part as a result of the body of work created by Drs. Kerr and Wood, current best practice for treating HIV-positive IDU in British Columbia are now based on comprehensive, evidence-based approaches to health care. Indeed, uptake of HIV therapy among IDU has increased dramatically, and it is now the policy of all health authorities in British Columbia, with the full support of the provincial government of BC, to target IDU for HIV treatment.<sup>30,31</sup>

Through their research excellence, Drs. Kerr and Wood have generated a substantial body of literature that has guided and supported the development and implementation of equitable HIV prevention and treatment policies and programs for people who use illicit drugs. From their work on the supervised injection facility, to needle exchange programs and HIV treatment, Drs. Kerr and Wood have demonstrated that individual behaviour is not the pre-eminent factor shaping health outcomes. By drawing attention to the ways in which our policies and programs can be restructured to better support the health of vulnerable populations, the work of Drs. Kerr and Wood represents a uniquely Canadian public health milestone that is worthy of recognition and celebration.

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## RÉSUMÉ

Dans le domaine de la lutte contre les maladies infectieuses, les efforts de recherche canadiens pour contrer l'épidémie de VIH dans le quartier Downtown Eastside de Vancouver ont favorisé le développement de perspectives de réduction des méfaits et d'équité en santé partout dans le monde. Ces efforts ont à leur tour transformé les approches de santé publique à l'égard de la prévention et de la lutte contre le VIH. En raison des initiatives de recherche intensives et soutenues dirigées par deux scientifiques canadiens, Thomas Kerr et Evan Wood, le « problème du VIH » et la réponse de la santé publique à ce problème ont été radicalement reconceptualisés. On est passé d'une optique exclusivement axée sur le choix personnel à la formulation de questions fondamentales sur notre société et les aspects structurels qui exposent les gens à contracter le VIH. Leurs recherches sur la réduction des méfaits et l'équité en santé par rapport à la vulnérabilité au VIH et aux résultats cliniques de l'exposition au virus ont été étayés et façonnés : 1) l'établissement du premier site d'injection supervisé en Amérique du Nord, Insite, dans le quartier Downtown Eastside; 2) les changements radicaux dans les politiques d'échange de seringues de la ville de Vancouver; et 3) les approches de traitement du VIH dans les populations consommatrices de drogues par injection. En attirant l'attention sur les façons possibles de restructurer les politiques et les programmes de soins de santé au Canada pour mieux protéger la santé des populations vulnérables, les travaux de Kerr et Wood représentent un jalon typiquement canadien de la santé publique.

**Mots clés :** transmission de maladies infectieuses; VIH; dépendance; réduction des méfaits; toxicomanie intraveineuse; sites d'injection supervisés