



Left to right: BC-CfE Laboratory Director Dr Zabrina Brumme, BC Minister of Health Hon. Adrian Dix, BC-CfE Executive Director & Physician-in-Chief Dr. Julio Montaner

BC first province to declare the End of AIDS as an Epidemic

Provincial Ministry of Health & BC Centre for Excellence in HIV/AIDS celebrate a historic AIDS milestone and launch a new laboratory focused on HIV cure research

On Sunday December 1, 2019, World AIDS Day, the Minister of Health Adrian Dix and the BC Centre for Excellence in HIV/AIDS (BC-CfE) announced the end of AIDS as an epidemic in British Columbia (BC). The announcement was made along with the opening of the BC-CfE's new laboratory on Powell Street. The new BC-CfE Research Laboratory is expanding its clinical and research services, including HIV cure research, further drug resistance testing and phylogenetics monitoring.

Since 1992, the BC-CfE has closely monitored and evaluated HIV and AIDS rates in BC including recording new cases of HIV, testing rates, the number of people on treatment and new cases of AIDS. The BC-CfE revealed that AIDS cases have declined by over 90% since 1994, while new HIV cases have declined by over 75%. Both rates are at their lowest since the HIV crisis first arrived on the doorsteps of BC. The rate of new AIDS cases in BC now meet the UNAIDS working definition of ending AIDS as an epidemic as outlined by the organization's 90-90-90 Targets. In BC, AIDS has now transitioned from an epidemic to an endemic concern.

This announcement adds to the BC-CfE's legacy of leading the way in innovative research and care for HIV and AIDS. In 1996, the BC-CfE pioneered highly active antiretroviral therapy (HAART) which significantly reduced a patient's viral load, decreasing morbidity and mortality. This led to the BC-CfE's **Treatment as Prevention® (TasP®)** strategy - introducing earlier, sustained access to care and treatment to reduce patients' viral load to undetectable levels. This made-in-BC, strategy decreased HIV-related morbidity

and mortality as well as HIV transmission in BC. **TasP®** is the foundation of the global UNAIDS 90-90-90 Targets to end the AIDS epidemic worldwide by 2030.



"Since the first AIDS patients presented to St. Paul's Hospital in downtown Vancouver, struggling against stigma and marginalization, community, researchers and clinicians worked tirelessly to advance evidence-based research to inform BC's HIV treatment policies," said Dr. Julio Montaner, BC-CfE Executive Director and Physician-in-Chief. "This included pioneering effective treatment, supporting widespread availability of antiretroviral therapy and making PrEP (pre-exposure prophylaxis) available to those deemed most at risk of contracting HIV. We are now reaping the rewards of this province's continued commitment to provide the best possible care for HIV as we set a standard for the rest of the world."

In January 2018, the BC Minister of Health announced the availability of PrEP to all British Columbians deemed clinically at risk of contracting HIV, adding another prevention tool to BC's **TasP®** approach. To date, over 5,000 people have initiated treatment as part of this program. Preliminary data indicates that PrEP is working in tandem with early treatment of HIV to further reduce new infection rates in the province.

"British Columbia is known around the world as the catalyst for pioneering HIV treatment, research and innovative strategies," said Dr. Montaner. "We will advance our phylogenetics research and grow our Laboratory Program here at 647 Powell Street to better address HIV and continue our investigations into finding an HIV cure, with the support of the BC government."

While HIV and AIDS infection rates have significantly declined across the province, neither will be eradicated without the development of a safe, effective and scalable cure or vaccine. BC-CfE researchers use advanced phylogenetics to not only investigate potential HIV cures, but also to monitor HIV 'clusters'. This information provides insights into HIV transmission patterns, allowing healthcare resources to be targeted to regions most in need of additional follow-up and treatment.

The BC-CfE's new laboratory space will also allow its Research program to further contribute to World Health Organization-sponsored HIV drug resistance surveys. These international efforts serve to better understand the spread of drug-resistant HIV in developing nations and inform programmatic changes to treatment strategies in these countries.

» "The importance of this Centre is going to continue to grow. The things that I expect we will be announcing in early 2020, to take not just more action with respect to addressing HIV and AIDS as it is now, but using what we have learned in this extraordinary, ongoing battle, to apply it to other medical conditions, I think will be extraordinary. This is a moment of both success and a moment where we will take off to new heights in the work of the BC-CfE."

— Hon. Adrian Dix, BC Minister of Health



HIV decriminalization, phylogenetics and Indigenous health headline Fall ARV update



Top L-R: Dr. Julio Montaner, Dr. David Moore, Dr. Kate Salters, Dr. Alnoor Ramji, panel of Dr. David Moore, Dr. Junine Toy, Dr. Mark Hull & Dr. David Hall
Middle L-R: Elder Roberta Price, Dr. David Tu, Dr. Jeffrey Joy, Dr. Scott MacDonald, & Dr. Annabel Mead
Bottom L-R: Dr. Mark Hull, Dr. Junine Toy, Dr. William Connors, Dr. Peter Phillips, Dr. David Tu, Elder Roberta Price & Dr. Julio Montaner

Strategies to improve HIV care for Indigenous people living with HIV

Coast Salish matriarch and Elder Roberta Price, greeted the hundreds of researchers, clinicians and community members gathered at the Fall 2019 HIV/ARV Update with a warm welcome.

Dr. David Tu spoke about a pilot project in collaboration with Elder Roberta for HIV care of Indigenous clients. His presentation focused on examining the "Kilala Lelum" (Butterfly House) model of service - based on respect, humility, kindness and strategies of laughter to promote cultural safety. Dr. Tu emphasized the need to promote health equity and wellness through partners.

"Recognizing my own training as a non-Indigenous physician working in this community, I had no capacity to address in a meaningful way my clients' cultural identity," admitted Dr. Tu. He connected with a group of patient-dedicated elders to develop a model for shared understanding, communication, respect and goals.

Results showed a reduction in depressive symptoms and a 46% decline in total emergency room visits. There is an increase in 'hopefulness' in the future Dr. Tu said, sharing the story of one of his clients who benefited from the guidance and support of elders.

Elder Price and Dr. Tu recommended further meaningful interventions to address HIV rates among Indigenous people in Canada and evolving the "Kilala Lalem" model to address the needs of Indigenous clients.

HIV status disclosure

Dr. Kate Salters discussed the impact disclosure has on those living with HIV. Describing it as a deeply personal decision made within social contexts, Dr. Salters pointed to varying degrees of personal risk, including rejection, violence, judgement and betrayal of confidentiality. Often, disclosure is emphasized as a necessity with new sexual partners.

Findings in BC show despite the risks associated with disclosure, 73.4 per cent of 657 participants in the LISA (Longitudinal Investigation into Supportive & Ancillary Health Services) study disclosed their HIV status to their sexual partners. "Individuals who were less likely to disclose to their partners were women and gay or bi men, suggesting there may be a barrier that is gender and sexuality-specific, said Dr. Salters."

There is no law surrounding HIV disclosure, says Dr. Salters, essentially non-disclosure invalidates one's consent, leading to a charge of sexual assault.

Dr. Salters argued the criminalization of HIV non-disclosure leads to increased stigma against people living with HIV, does not help people overcome barriers to HIV disclosure, reduces HIV testing and does not reflect the science of U=U (undetectable=untransmittable).

Phylogenetics insights into HIV and HCV

Dr. Jeffrey Joy began his presentation with a look at the United States' plan to end HIV, which includes a national plan for "rapid and overwhelming response to emerging

HIV clusters and to monitor for new clusters." He highlighted this is something we have been doing in Canada, especially in BC, for the past seven years. HIV transmission is being monitored in BC and across provincial boundaries through collaboration with various agencies.

HIV phylogenetics can help contain HIV transmission and allow public health resources to be deployed proactively and efficiently. A surprising amount of information of public health value is in phylogenetic data and can pinpoint groups of people most in need of health services.

HCV evolves as rapidly as HIV, and this similarity allows phylogenetic testing to be applied to HCV. Some key differences include: the HCV resistance test is not currently the standard of care and approximately 20% of people naturally clear HCV. However, HCV clusters can still represent localized outbreaks and as the HCV database grows, there will be an opportunity to monitor HCV hotspots for their public health risk and to deploy resources accordingly.

PrEP

Dr. Junine Toy provided a comprehensive PrEP (pre-exposure prophylaxis) program overview showing steady uptake since its launch by the provincial government in 2018, particularly among high-risk men who have sex with men.

Program data shows that most PrEP users are located in Vancouver (3,055), followed by the Fraser Health region (813), while 442 participants reside on Vancouver Island. The majority of clients are accessing PrEP through sexual health clinics in Vancouver and greater Vancouver, while outside of these areas, program participants are turning to general medical clinics.

There are high retention rates at the 18-month mark among people enrolled in the program. There have been eight new cases of HIV among the cohort, but Dr. Toy clarified these individuals were not using PrEP at the time of their infection.

Opioid use disorder

Dr. Annabel Mead discussed the significant overall reduction in overdose deaths in BC for the first time since 2016. Urban centres are still the hardest hit, and nearly 80% of overdose deaths are among men. However, in contrast to the positive news regarding an overall reduction in deaths, there was an increase in the number of Indigenous people who succumbed to overdose. Indigenous people are dying at four times the rate of the general population and almost half of overdose deaths in Indigenous people are women.

Canadian guidelines for opioid use disorder state withdrawal management alone should be avoided and opioid agonist therapy options may include buprenorphine/naloxone as first line, followed by methadone, slow release oral morphine and injectable iOAT (opioid agonist therapy).

Dr. Mead emphasized the need for a range of pharmacotherapies for OUD particularly to maximize engagement of patients in treatment.

BC-CfE research most cited clinical paper in *AIDS* journal in 2018



BC-CfE researchers have received an award from the internationally recognized journal *AIDS* for their authorship of the most cited clinical paper in 2018. The study entitled "Emergent drug resistance with integrase strand transfer inhibitor-based regimens" investigated drug resistance among persons with HIV receiving antiretroviral therapies (ART) including raltegravir, elvitegravir and dolutegravir.

According to the paper, while drug resistance rates were low among patients taking these medications, (belonging to the drug class integrase strand transfer inhibitors (INSTI)), incomplete adherence to treatment was associated with higher risk of developing drug resistance. Before the publication of this study, little was known about drug resistance associated with the newer INSTI antiretrovirals.

Congratulations to Katherine Lepik, Research Coordinator for the BC-CfE's Pharmacovigilance Initiative and to the researchers and healthcare providers who contributed to this research study.

Dr. Viviane Lima commended by UBC's Faculty of Medicine



Dr. Viviane Lima, Research Scientist and Senior Statistician for the BC-CfE and an Associate Professor at UBC, has been commended by UBC's Faculty of Medicine for her Outstanding Academic Performance (OAP) during 2018. To receive this recognition, Dr. Lima was required to submit her academic contributions in 2018, including publications, teaching, service and grants she received for her research. OAP is awarded to UBC faculty members following a peer review process. This is the third time Dr. Lima has been recognized.

Congratulations to Dr. Lima and team for their continued contribution to the BC-CfE and to advancing our knowledge of HIV and other conditions.

BC Centre for Excellence in HIV/AIDS

- > Improve the health of British Columbians with HIV through comprehensive research and treatment programs;
- > Develop cost-effective research and therapeutic protocols;
- > Provide educational support programs to health-care professionals;
- > Monitor the impact of HIV/AIDS on BC and conduct analyses of the effectiveness of HIV-related programs.

Physician Drug Hotline
1.800.665.7677

St. Paul's Hospital Pharmacy Hotline
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Funding for the BC Centre for Excellence in HIV/AIDS is provided by the BC Ministry of Health.