



BC-CfE Assistant Laboratory Director Dr. Chanson Brumme and BC-CfE Laboratory Director Dr. Zabrina Brumme

BC-CfE provides update on response to COVID-19, while teams lead new research into the virus

With BC currently in its longest-ever state of emergency, the BC Centre for Excellence in HIV/AIDS (BC-CfE) continues to perform its critical work of promoting testing, treating and learning from people living with HIV (PLHIV), while carrying out epidemiological and infectious disease research and the mandate of **Treatment as Prevention**®.

In a recent webinar, BC-CfE's senior leadership outlined how the Centre's work has changed and what has stayed the same during this global COVID-19 pandemic.

Moderated by Dr. Silvia Guillemi, Director of BC-CfE's Clinical Education and Training program, the webinar had several goals, including a review of the current epidemiology, containment, and clinical management of COVID-19 in BC.

Dr. Peter Phillips, Clinical Professor in the Division of Infectious Diseases at the University of British Columbia, provided an overview of the epidemiology for the five largest Canadian COVID-19 epidemics. Dr. Phillips' presentation discussed COVID-19 issues such as demographics, testing frequencies, and statistical information such as case fatality ratios.

Other presenters included the BC-CfE's Laboratory Director Dr. Zabrina Brumme, Research Scientist Dr. Jeffrey Joy, Senior Medical Director Dr. Rolando Barrios, and Executive Director and Physician-in-Chief Dr. Julio Montaner.

The webinar also provided updates on COVID-19 molecular virology and bioinformatics support BC-CfE

laboratories are providing to the local and international community, and provided background on the virus and understanding of its evolution and molecular epidemiology in BC, Canada and beyond.

While this may sound complicated and daunting for someone without an extensive background in epidemiology or infectious diseases, anyone interested can check out the webinar at bit.ly/BCCfE_COVIDupdate and see for themselves that the knowledge is presented in an easy-to-understand format.

Meanwhile, the BC-CfE's HIV Precision Medicine testing services, which had been temporarily suspended during this pandemic, have now resumed. The same BC-CfE laboratories that provide this invaluable testing, are also working to research and learn as much as possible about COVID-19.

Two teams led by BC-CfE scientists have qualified for the Rapid Response Funding for COVID-19 Research Projects overseen by Genome BC. The first team is led by Dr. Chanson Brumme, the BC-CfE's Assistant Laboratory Director. Working with Don Kirkby, the BC-CfE laboratory's lead software developer, C. Brumme's team's project is called "*Rapid release of an easily accessible SARS-CoV-2 genome analysis pipeline*".

This project will adapt an open-source software package, co-created by Kirkby and former BC-CfE scientist Dr. Art Poon, to analyze genetic data from SARS-CoV-2, the virus that has caused the COVID-19 pandemic. The original software package, also funded by Genome BC, was successful in identifying drug resistance in other viral diseases including HIV and Hepatitis C.

A beta version, already in use, has so far successfully assembled SARS-CoV-2 genomes from various publicly-available data sources. This vital work will increase local and global capacity to sequence circulating SARS-CoV-2 genomes, which will in turn advance understanding of the molecular epidemiology and virology of this infection.

The BC-CfE hopes to see this new tool rapidly adopted by the global scientific community. The BC-CfE estimates that the software will quickly be made publicly available, which will enable users to contribute COVID-19 genomic data to public repositories. This public sharing of data will further enable researchers to track the virus's origins, spread, and evolution in real time. Furthermore, the data will help develop much-needed medications and vaccines against COVID-19.

The second BC-CfE team fighting COVID-19 is co-led by Dr. Z. Brumme and Dr. Christopher Lowe, Medical Microbiologist and Virologist, who leads the Virology Laboratory at St. Paul's Hospital. Z. Brumme and Lowe's team has two aims: the first is to use sophisticated molecular technology to better understand the performance characteristics of the current COVID-19 testing process, and the second is to develop a quantitative SARS-CoV-2 viral load assay. The development of a quantitative viral load assay will be critical in helping to determine which therapeutic interventions are most effective.

Together, these efforts will help advance our understanding of COVID-19 and lead the way towards controlling this pandemic.

» "We don't have a COVID-19 mandate, but we are trying to address the needs of the populations that we serve in the context of a COVID-19 pandemic, and supporting policy-makers in BC and elsewhere by bringing tools to the table that may be useful to them."

— BC-CfE Executive Director & Physician-in-Chief Dr. Julio Montaner



BC-CfE introduces Mark Helberg as new Senior Director of Internal & External Relations



BC-CfE Senior Director, Internal and External Relations Mark Helberg

» The BC-CfE is pleased to announce Mark Helberg has joined its team in the role of Senior Director, Internal and External Relations and Strategic Development.

Mark comes to the BC-CfE bringing a wealth of experience from BC Cancer with the Provincial Health Services Authority (PHSA). He worked there as the Manager in Medical Affairs Administration and was responsible for supporting the Director of Medical Affairs Administration and Medical Leadership in Physician Administration. Before he worked with PHSA, Mark was with Vancouver Coastal Health in several

positions including Medical Affairs Coordinator and Project Manager.

In these roles Mark was responsible for managing and coordinating a wide range of medical leadership assignments and special projects pertaining to policy, planning and operational issues. Mark holds a Juris Doctorate degree from the University of South Dakota School of Law, a Bachelor of Arts in Chemistry and a Bachelor of Arts in Government and International Affairs from Augustana University.

The BC-CfE warmly welcomes Mark and wishes him every success in his new role.

CONFERENCE RECAP

BC-CfE (virtually) at CAHR 2020



Canadian Association for HIV Research

» With travel and large gatherings shut down by COVID-19, the 29th Annual Canadian Conference on HIV/AIDS Research (CAHR 2020), originally scheduled to take place in Quebec City this May, proceeded virtually this year. Ensuring researchers from across Canada were able to present the latest in HIV/AIDS research, oral and poster presentations were made publicly available online. Oral presenters were welcomed to submit audio or video recordings of the presentations they would have given in person, and those with posters were afforded the opportunity to present short slide decks discussing their research.

The BC-CfE has a long tradition of presenting the work of our researchers at CAHR, and this virtual conference was no exception with 25 presentations covering a broad range of topics. BC-CfE researchers from across our departments showcased their research in diverse areas such as clinical science, population health, virology and HIV comorbidities.

While the topics of each presentation varied greatly, most shared the theme of **Treatment as Prevention**[®], with researchers stressing the importance of the BC-CfE's central strategy and how it has impacted the course of HIV in BC. Four presentations in particular were highlighted as oral presentations.

Dr. Chanson Brumme, the BC-CfE's Assistant Director of Research Laboratories, presented a study entitled "Utility of HIV Drug Resistance Testing in Low Viral Load Samples." As the BC-CfE laboratories perform the majority of HIV drug resistance testing in Canada, Dr. Brumme's research came to several important conclusions on the necessity and optimal timing of drug resistance testing.

Kathy Lepik works as a Research Coordinator for the Centre's Pharmacovigilance Initiative and is responsible for tracking, analyzing, and following up on adverse reactions to antiretroviral drugs. Ongoing drug interaction monitoring remains an important part of patient care as reflected in her presentation "Declining Prevalence of Drug Interactions Between Antiretroviral and Other Drugs in Antiretroviral Therapy (ART)-Treated Persons in British Columbia (BC), 2010-2016."

Rachel Miller's presentation "A Novel Phylogenetic Approach to Prioritizing HIV-1 Transmission Clusters" noted how a public health response to HIV transmission clusters is most effective when focused on groups of individuals with elevated transmission rates. Finding ways to quickly and accurately identify groups of individuals at high risk for HIV transmission is a critical element of prevention strategies.

Miller's proposal to use a machine learning model to even more accurately predict cluster priority, while still maintaining confidentiality, is an innovative and forward-thinking approach to the **Treatment as Prevention**[®] strategy.

Finally, Birgit Watson, the BC-CfE's Team Lead for the Therapeutic Drug Monitoring group and Specimen Processing presented on methods to evaluate drug effectiveness between brand name and generic formulations.

Watson's findings added further support for the Centre's decision to use generic formulation where available in order to achieve cost savings to the healthcare system.

A full collection of all the BC-CfE presentations at CAHR can be viewed at: bit.ly/BC-CfEatCAHR2020.

The BC-CfE celebrates National Nursing Week 2020



Clinical Operations Manager Belinda LeBlanc

The BC-CfE was proud to celebrate National Nursing Week 2020. The theme for this year was *Nurses: A Voice to Lead – Nursing the World to Health*.

Nurses, whether they're registered nurses, licensed practical nurses, or nurse practitioners (NPs), have been a huge part of the success in implementing the BC-CfE's groundbreaking **Treatment as Prevention**[®] strategy, which forms the foundation of the UNAIDS 90-90-90 Target to end AIDS globally by 2030.

BC-CfE's nurses help to improve quality of life and longevity for people living with HIV in BC, while also increasing the provincial capacity to prevent new HIV infections.

Additionally outreach nursing is one of the most challenging roles taken on by staff at the BC-CfE. These dedicated nurses connect with clients in vulnerable communities, working alongside social workers, peer navigators, physicians, pharmacists, mental health teams, and housing support workers to form support networks for our clients.

With the opening of new BC-CfE locations at 611 and 625 Powell Street, in the heart of Vancouver's Downtown Eastside, BC-CfE nurses now have more resources to support clients. Our nurses' holistic approach to improving health includes helping clients find housing, helping with income stability and nutrition, and connecting them to other social and health care resources in the DTES.

This includes nurse Belinda LeBlanc who is the Centre's Clinical Operations Manager working at the Powell Street locations. LeBlanc says, "Nurses at the Hope to Health Clinic work collaboratively on the multidisciplinary clinical team providing acute care, proactive care, chronic disease management and mental health services."

For this, and for all of the work they do to care for those who need it, the BC-CfE honours its nurses and nurses all around the world.

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

1.888.511.6222

Website

www.cfenet.ubc.ca

E-mail

info@cfenet.ubc.ca

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