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forecast

BRITISH COLUMBIA CENTRE for EXCELLENCE in HIV/AIDS

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BOOST team members from L-R: Valeria Gal, Dr. Cole Stanley, Dr. Rolando Barrios and Angie Semple (photo taken pre-COVID)

BOOST continues to improve lives for those living with opioid use disorder

The BC Centre for Excellence in HIV/AIDS' (BC-CfE) QI team, led by Senior Medical Director Dr. Rolando Barrios, launched the **B**est-Practices in **O**ral **O**pioid agoni**S**t **T**herapy Collaborative (BOOST) in 2017 as a partnership between the BC-CfE and Vancouver Coastal Health.

As BOOST grew, more than 40 healthcare teams across BC joined the Collaborative, which has since evolved into the BOOST QI Network. QI stands for quality improvement, and by operating under a quality improvement model the teams work together to help people living with opioid use disorder (OUD) overcome any barriers to treatment, and to provide the support needed to start, and consistently continue, using Opioid Agonist Therapy (OAT). This therapy provides treatments including prescribing buprenorphine, Slow Release Oral Morphine, and methadone to treat opioid dependency, reduce drug-related harms, support long-term recovery, and, most importantly, prevents death.

Currently, an average of more than six people die every day in BC due to overdoses. Last year was the deadliest year yet of this province's overdose crisis, with 2,224 deaths, an increase of 26 per cent from 2020.

In fact, according to the B.C. Centre for Disease Control, drug toxicity comes second only to cancers in terms of total potential years of life lost (a measure of premature death) in our province. As a point of comparison, COVID-19 ranks 12th.

The highly-potent opioid fentanyl, and its analogues, are now noted as a factor in about 84 per cent of overdose deaths in BC. Ten years ago, it was noted in only about five per cent of deaths.

As this is the current reality, the BOOST QI Network is needed now more than ever. Doctors, nurse practitioners, social workers and mental health workers, which comprise the teams supporting those on OAT, need the latest and most helpful information they can possibly get. BOOST helps provide this information through its QI Network.

The process of initiating and continuing on OAT can be overwhelming for many clients due to the need for frequent prescription pick-ups and follow-up healthcare appointments. Healthcare workers in the BOOST QI Network often provide much-needed daily check-ins with clients, and, thanks to the QI process, can learn the most effective ways for keeping their clients engaged in care and consistent with their individual requirements for OAT.

BOOST's many learning events, which transitioned to virtual due to the COVID-19 pandemic, featured personal stories told by families and persons affected by or living with OUD. By listening to these families and their stories, and learning from people with direct experience of OUD, members of BOOST could improve their daily workflows to better serve their clients.

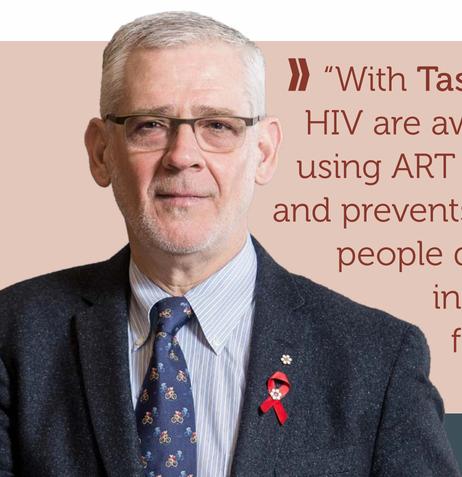
The **Treatment as Prevention**® (**TasP**®) strategy's emphasis on treatment has been embedded within the BOOST QI Network from the very start. And now, as the effects of the COVID-19 pandemic continue to significantly worsen BC's ongoing opioid crisis, the application of **TasP**® to OUD is saving lives. People who use drugs in all parts of BC are currently facing an increasingly toxic drug supply when buying street drugs. COVID-19 has also increased unemployment, social isolation, and has exacerbated mental health and addiction issues.

As evidence shows, a significant proportion of individuals with OUD will reduce illicit opioid use and remain in treatment longer with appropriate doses of OAT such as methadone, buprenorphine/naloxone or slow-release oral morphine. Other predictors of treatment success include a shorter time period from diagnosis of OUD to treatment, and a longer duration of treatment.

By learning through, and growing, the BOOST QI Network, more teams will be able to provide equitable access to integrated, evidence-based care to help clients with OUD. The Collaborative's goals are to see 95 per cent of clients with an active OAT prescription, 95 per cent of those clients with an active OAT prescription retained on therapy for greater than three months, and 100 per cent of BOOST teams equipped with a process to monitor and incorporate the patient voice in their quality improvement work.

Recently, the BOOST QI Network has had its funding extended for another year by Health Canada's Substance Use and Addictions Program. The new funding will go to Interior Health for a project called the Interior BOOST Collaborative. This project is slated to start in May of this year.

As illicit drug toxicity increases, and as death tolls continually break records, continuing any and all efforts to save lives from OUD is essential. BOOST's key focus, retention of clients on Opioid Agonist Therapy (OAT), plays a critical role in saving lives.



"With **TasP**® as it relates to HIV/AIDS, we work to ensure people living with HIV are aware of their status, get immediately started with ART, and maintain using ART consistently. Keeping people on ART prevents the spread of AIDS and prevents death. With BOOST, applying the **TasP**® strategy means getting people diagnosed with OUD, and getting them on OAT and keeping them in this therapy. Doing this prevents drug-related harms and death from overdoses.

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

LABORATORY RESEARCH

BC-CfE responds to the discovery of a highly virulent variant of subtype-B HIV-1

The BC-CfE has responded to a new study published in the journal *Science* reporting on the discovery of a highly virulent variant of HIV-1 found to be circulating in the Netherlands and other parts of western Europe during the past two decades. Referring to this variant as "virulent subtype B" HIV (VB), the Dutch researchers found that 109 individuals with this variant had up to a 5.5-fold higher viral load compared with 6,604 individuals with other subtype-B strains. Those with VB were also found to have a two-fold more rapid CD4 cell decline. A low CD4 count means HIV has weakened the immune system.

Without treatment, those living with the VB variant reached advanced HIV, defined as CD4 cell counts below 350 cells per cubic millimeter, with long-term clinical consequences, much quicker on average than those with other HIV variants.

A genetic sequence analysis carried out by the Dutch researchers suggests the VB variant arose in the 1990s due to a unique mutation, which came with increased transmissibility and an unfamiliar molecular mechanism of virulence.

The BC-CfE's Assistant Laboratory Director, Chanson Brumme, Laboratory Director Zabrina Brumme, and Executive Director and Physician-in-Chief Dr. Julio Montaner responded to these findings in an eLetter titled, "Real-time surveillance for HIV-VB implemented in British Columbia, Canada", in which they describe how the BC-CfE quickly acted to investigate whether VB was present in BC and implement methods to monitor for its potential arrival.

Since 1998, the BC-CfE Laboratory has performed HIV drug resistance testing for all of BC and most of Canada. Because of this, the lab is well-positioned to monitor the potential introduction of VB in BC. BC-CfE researchers sought to detect VB through phylogenetic analysis of HIV sequences collected during routine HIV drug resistance testing from participants of the BC-CfE's Drug Treatment Program (DTP).

The DTP is funded by BC's provincial government, through its PharmaCare program, to distribute anti-HIV drugs and information from all participants is entered into a database. This provides data for clinical and virologic outcome evaluations of patients receiving antiretroviral therapy, and also acts as an "early warning system" to alert government about the trajectory of HIV/AIDS in the province.

Thankfully, the laboratory's findings suggest VB has not yet arrived in our region. However, as the BC-CfE's letter published in *Science* makes clear, timely identification of such cases is of critical importance due to the risk of rapid disease progression if VB is left untreated. The news of the variant also caused a quick policy change for the BC-CfE, as, within 24 hours, the BC-CfE had adapted existing quality-control procedures to screen all newly collected HIV sequences for VB in real time. The BC-CfE also enacted measures to immediately alert care providers to sequences that bear high similarity with VB to ensure prompt therapy initiation.

As Chanson Brumme said, "We encourage other HIV drug resistance testing laboratories worldwide to consider implementing similar measures. Such monitoring is essential to track the emergence of viral variants of concern and to quickly identify sources of increased individual, and population-level harms."

HEPATITIS PROGRAM

Hep C Connect pilot project enhances care and testing for clients

It is estimated that over 60,000 people have been exposed to hepatitis C virus (HCV) in BC, with approximately 2,000 new cases identified in the province each year. Many people living with a chronic hepatitis C infection are unaware of their status until symptoms appear.

Chronic HCV is often referred to as a "silent" disease because symptoms typically don't appear until the liver is already severely damaged. Cirrhosis (liver scarring), liver failure, liver cancer, or the need for a liver transplant, can occur up to 30 years after onset of infection. For this reason, HCV testing and treatment is often deprioritized especially when patients are dealing with multiple competing comorbidities.

HCV is spread mainly through blood-to-blood contact and injection drug use is now the most common way the virus spreads in Canada, making up about 60 per cent of all new infections.

In order to know your HCV status, you have to have your blood tested. An HCV antibody test comes first, which, if positive, is followed by a PCR (polymerase chain reaction) test.

HCV treatments have changed dramatically from previous injection therapies which came with severe side effects and limited success. Current treatments take about eight to 12 weeks and involve only oral pills or tablets and have much fewer and less severe side effects. HCV treatment is also highly effective, with a cure rate of more than 95 per cent. Treatment is fully funded under BC's PharmaCare as of 2018. However, the roll-out of this universal treatment program has not reached everyone in need, especially patients with more complex health and social issues.

Hep C Connect is a pilot project operating out of the BC-CfE's Hope to Health (H2H) supervised consumption site (SCS). It offers rapid, low-barrier HCV testing and education, and also offers connections to primary care for clients who use drugs.

Hep C Connect

Study objective: To evaluate the outcomes of a nurse- led, HCV education, testing, and linkage-to-care program located at the BCCfE'S Hope to Health (H2H) supervised consumption site in the Downtown Eastside of Vancouver.

Activities:

- Offer rapid HCV testing in a low-barrier supervised consumption site to all clients
- Conduct interviewer administered questionnaire at baseline and 6-month follow up to assess self reported substance use patterns, engagement with health care, and harm reduction access
- Characterize health care experiences and outcomes for clients of nurse-led intervention embedded within a community setting frequented by people who use drugs

Launched in November 2021, with funding from Gilead Sciences, the goal of Hep C Connect is to enhance testing of HCV among unattached and under-served clients of a supervised consumption site in a low-barrier setting. The project also hopes to enhance linkage to care and retention for clients diagnosed with HCV through patient-centered, and nurse-led interventions. Clients can also participate in optional evaluation surveys which will help in measuring health outcomes and assessing care experiences across the HCV cascade of care.

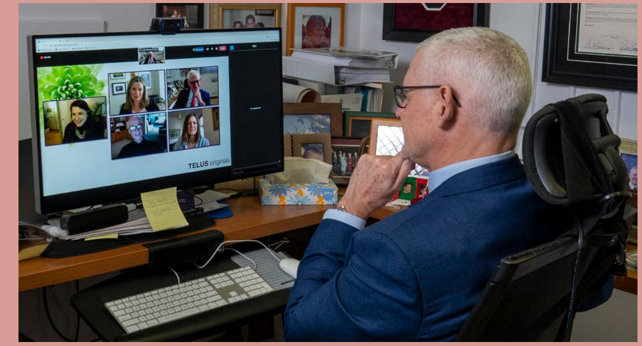
From early November, 2021, up to late February, 2022, 125 participants were enrolled in Hep C Connect. Over 60% of participants tested positive for HCV antibodies and were offered confirmatory HCV RNA blood testing. The nurses at H2H continue to follow-up with clients who've tested positive for HCV and lack access to primary care. PIs are currently working to expand the program to serve a higher volume of clients, extend the length of follow up from six to 12 months and understand the system-level barriers that health care providers face in treating HCV in community settings.

Shaughna Cooper, Hep C Connect Research Coordinator, said, "The program has thus far been quite successful at reaching our target population of under-served or unattached clients. Over the past few months, we've talked to many participants that are very disengaged from healthcare or other psychosocial supports, and who report a complex set of health conditions including hepatitis C, addiction, and mental health issues."

Kirti Singh, a Licensed Practical Nurse at H2H, said, "Hep C Connect has allowed us to provide a low-barrier, judgement and stigma-free environment within which to engage clients about HCV. Clients are coming to the SCS to use the safe consumption services or access harm reduction supplies and Hep C Connect provides a pathway to HCV testing and treatment that they might otherwise miss in more traditional settings. We're able to have conversations with people about their Hep C status and treatment options that are available to them."

UNDETECTABLE

Screening and panel discussion for HIV/AIDS doc *Undetectable*



Released on World AIDS Day last year, the Telus Originals documentary ***Undetectable*** asks the question: "If Canadians have the solutions to end new HIV infections—and stop the world-wide HIV/AIDS epidemic—why are people still dying of AIDS?"

Directed by Laura O'Grady, the documentary traces the early history of HIV/AIDS in North America, highlighting the hysteria, misinformation, and stigma that has surrounded the disease since the early 1980s. It also looks to the future, as antiretroviral therapy along with pre-exposure prophylaxis, or PrEP, serve as a means to eradicate HIV/AIDS within our lifetime.

In examining the early days of HIV/AIDS O'Grady speaks to Canadians who were affected by the disease, and those who treated them. Dr. Julio Montaner, the BC-CfE's executive director and physician-in-chief, plays a significant role in the film, as a discoverer of highly active antiretroviral therapy, or HAART and the **Treatment as Prevention®** strategy. HAART revolutionized HIV/AIDS treatment, enabling those living with the disease to live healthy and long lives, and unable to transmit the virus.

Telus and StoryHive presented a screening of ***Undetectable*** in early March. Following the screening, Dr. Montaner joined Vancouver Artist and Person Living with HIV Tiko Kerr and former Vancouver Coastal Health Outreach Worker Keri Guelke for a panel discussion, moderated by O'Grady.

The discussion was wide-ranging and offered insights into living with HIV/AIDS back in the 1980s compared to today, and what policies must to be enacted to ensure HIV/AIDS never becomes a pandemic again.

As O'Grady said, "***Undetectable*** is a good news story. Thanks to the work of countless scientists and frontline workers, we now have the tools to end HIV/AIDS in our lifetime. **Treatment as Prevention®** and U=U are proven strategies that can end this global pandemic. To achieve this vital final step, stigma and prejudice, which was rooted into the earliest reports of GRID (HIV), must be eradicated."

Undetectable is available in its entirety for free on YouTube.

BC Centre for Excellence in HIV/AIDS

- Improve the health of British Columbians with HIV through comprehensive research and treatment programs;
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- 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.

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