

Hope to Health's holistic approach improving lives in the Downtown Eastside

Since opening in late 2019, the BC Centre for Excellence in HIV/AIDS' (BC-CfE) Hope to Health Research and Innovation Complex (H2H) has offered comprehensive health care to residents of Vancouver's Downtown Eastside. For H2H clients, holistic means a team of healthcare professionals, including doctors, nurses, social workers, and peer research associates, will help with not only medical care, but also in providing psychosocial supports. This can include helping clients find stable housing, income and social support, and providing behavioural interventions, like educating clients in safer substance use.

Located on the 600 block of Powell Street, H2H is comprised of three buildings. At 625 Powell is the primary care clinic. When H2H opened the goal was for up to 1,400 clients with complex needs to have what is referred to as a "medical home". This concept means offering care centred on individual clients' needs, within their community, and integrated with other health services. By having a medical home, and by building a trusting relationship with clients, better health outcomes can be achieved.

Clients who come in to H2H will be met by one of two Integrated Care Teams (ICT), which are both supported with shared clinical services, and one triage team, that determines the immediate needs of each client. The data shows the top diagnosis for H2H clients is Mental Health and Substance Use Disorders, whether that disorder is use of opioids, alcohol, or stimulants. The other diagnoses include chronic hepatitis C infection, hypertension, dyslipidemia (high cholesterol), and HIV.

The philosophy of comprehensive care at H2H is summed up by the slogan of "Enroll, Engage and Empower". Enrolling clients at H2H has succeeded quickly and fully, with a client roster now standing at 1250, close to the original goal of 1,400.

Engaging clients means they continue to see H2H as a place of consistency, where they trust their healthcare providers and are able to be honest about their medical needs without fear of judgment or stigma. Through the systematic method of Quality Improvement, the staff of H2H has decreased disengagement in care at H2H from 42 percent to 15 percent. Research has proven that increased engagement in care improves client outcomes and decreases the use of acute care, such as hospital emergency rooms.

Empowering clients means they are able to set health goals for themselves and craft a care plan with their doctor to meet these goals. The latest available data from H2H shows the percentage of clients with documented health goals and a care plan is above 80 per cent.

For clients with substance use issues, empowerment may mean that they want to stop using street drugs and be prescribed a safer supply. Doctors at H2H can help with this goal by offering opioid agonist therapy (OAT), proven to be an effective treatment for illicit opioid use. OAT involves a client switching from dangerously toxic drugs acquired illegally, to taking the opioid agonists methadone, buprenorphine (Suboxone®) or slow-release oral morphine. These prescribed medications help to prevent withdrawal and reduce cravings for

opioids. OAT helps H2H clients stabilize their lives and greatly reduces drug use related harms.

For clients who continue to use illicit drugs, the H2H building at 611 Powell features a Supervised Consumption Site where clients can bring in their own substances and use them under the supervision of trained staff. By using brand new needles, clean water, and being in a stigma-free indoor space, clients injecting their drugs are considerably safer than if they were using outdoors. Those using at the safer consumption site are also at far less risk of suffering a fatal overdose, as the nurses supervising them will act quickly to reverse overdoses should they occur. In a time of record high drug-related deaths, there has not been a single fatal overdose at H2H.

At 647 Powell the H2H on-site laboratory is led by Dr. Zabrina Brumme. The laboratory tests client's blood samples to monitor genetic changes in viruses within their bodies, which could lead to more effective tailored therapy. Other testing includes therapeutic drug level monitoring, an important tool for investigating drug absorption, treatment adherence, toxicities, and side-effects. Opportunities to support the work at 625 and 611 Powell are being explored by the laboratory to further personalize and enhance client care.

Dr. Rolando Barrios is the BC-CfE's Senior Medical Director and has worked in the Downtown Eastside for decades. As the lead physician of H2H, Dr. Barrios said, "Enrolling, engaging and empowering clients at H2H isn't just a slogan. The staff at H2H truly work hard to help our clients realize their own health goals."



» "We know through research that access to a primary care provider is a key determinant of positive health outcomes. At H2H we are providing a safe and barrier and judgment-free space for people to get healthier."

— BC-CfE Senior Medical Director, Dr. Rolando Barrios

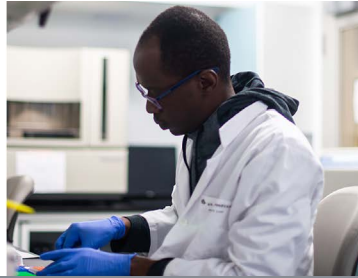
Cure research advanced with deeper knowledge of viremic controllers

» There is currently no cure for HIV because the virus is able to persist in the body even during long-term antiretroviral therapy. BC-CfE scientists have published new research that characterizes in detail the HIV sequences that persist in the bodies of viremic controllers. Viremic controllers are a rare group of people whose immune systems naturally control HIV replication to low levels, but who nevertheless still benefit from antiretroviral therapy. This new research adds to the body of knowledge that is needed to develop an HIV cure.

The paper, titled *"HIV proviral burden, genetic diversity, and dynamics in viremic controllers who subsequently initiated suppressive antiretroviral therapy"*, was published in *mBio*, the premier open access journal of the American Society of Microbiology. BC-CfE researchers F. Harrison Omondi, who is also a PhD candidate at Simon Fraser University (SFU), and Hanwei Sudderuddin, who is also a MSc student at the University of British Columbia, co-led the study in collaboration with scientists at SFU and the BC-CfE.



Study co-authors Hanwei Sudderuddin and F. Harrison Omondi



Omondi and Sudderuddin characterized the genetic diversity of HIV sequences that persisted in the study participants, and how long each sequence had persisted in each individual. They were also interested in documenting differences in these metrics between individuals. It is important to study the characteristics of persisting HIV sequences because, in order to cure HIV, effective strategies will need to be developed to target and eliminate them. Studying these characteristics in many different groups of people will also ensure that an HIV cure strategy, once developed, will be applicable to all.

The two researchers focused on viremic controllers because they are understudied in HIV cure research. Whereas many researchers are studying HIV elite controllers, rare individuals whose immune systems suppress HIV replication to undetectable levels without

antiretroviral therapy, much less attention has been paid to viremic controllers. Omondi and Sudderuddin hypothesized that since viremic controllers naturally control HIV replication prior to therapy, the amount and genetic diversity of HIV sequences that persisted during therapy would be limited. To their surprise, they observed substantial HIV diversity and, in some participants, quite large pools of persisting HIV sequences. With this information, the co-leads were

also able to estimate the rate at which persisting HIV populations "turn over" in the body prior to therapy. They estimated this to occur at an average half-life of less than one year in most individuals, though in some people this rate is much slower.

The authors concluded, "HIV cure strategies will need to overcome within-host proviral diversity, even in individuals who naturally controlled HIV replication before therapy."

Their results also underscore the importance of early treatment, as this will limit reservoir diversity, which remains critical for those few people who naturally control their viral loads to low levels.

"One participant illustrated the importance of early treatment particularly well," Dr. Zabrina Brumme, the BC-CfE's Laboratory Director said of the study findings. "Initially, this person was a viremic controller, but later they lost control and their viral load increased dramatically. When this happened, the genetic diversity of their HIV also increased dramatically, as did the overall number of HIV sequences persisting in the body. Had this person initiated therapy earlier, their pool of persisting HIV sequences would have been much smaller and less genetically complex, and possibly easier to eliminate. The results of our study reveal that HIV cure strategies will need to overcome HIV diversity, even in individuals who naturally control HIV before starting therapy."

HOPE TO HEALTH RESEARCH & INNOVATION CENTRE

BC-CfE's Supervised Consumption Site saves lives

» The latest available figures released by the B.C. Coroners Service show a record death toll from illicit drug overdoses through the first ten months of 2021. 1,782 people died, surpassing the 1,765 deaths recorded in 2020.

The data from November and December are not available yet but we know October in BC saw a single month record high of 201 illicit drug overdose fatalities. These deaths occurred in all age groups and in every local health area in the province.

Since the public health emergency over fatal opioid overdoses was declared six years ago, more than 8,300 British Columbians have died from drug toxicity, more than three times as many deaths as COVID-19. Toxic drugs are now the most common cause of unnatural death in BC, and the leading cause of death among British Columbians aged 19 to 39.

Fentanyl remains the leading driver of overdose deaths, but increasing levels of stimulants and benzodiazepine are being detected in the illicit drug supply. The data collected at the BC-CfE's Supervised Consumption Site (SCS) reflects this dangerous new reality. Overdoses involving benzodiazepine, a depressant, cannot be reversed by naloxone, which is used to treat fentanyl overdoses.



The BC-CfE was an early advocate and participant of BC's safer supply program, the first in Canada. In fact, the BC-CfE's work in harm reduction dates back decades, as back in 2002 the Centre initiated the scientific evaluation of North America's first supervised injection facility, the Insite Supervised Injection Facility in Vancouver's Downtown Eastside.

With this background and experience the BC-CfE opened the doors to its Hope to Health Research and Innovation Centre (H2H) in late 2019 and its Supervised Consumption Site (SCS) within H2H shortly afterwards.

The SCS at H2H currently contains six stations, due to COVID-19 safety measures, where drug users bring in

their own supply of drugs, or prescribed safer drugs, to use under the supervision of highly-trained medical staff who intervene if necessary, and who also help in safely preparing drugs, providing clean supplies, and finding veins so injection drug users don't further harm themselves.

There are approximately 800 visits to the SCS each month, and over 100 unique clients utilizing the SCS monthly. Most clients return to the SCS, with new clients continuing to access it. Clients primarily identify as male and most are between the ages of 30 and 49.

Visits to the SCS also serve as opportunities for clients to engage with social workers, mental health workers, nurses, and doctors, all of whom can play a part in helping clients get prescribed Pharmacare-covered alternatives to the toxic illicit drug supply, including a range of opioids and stimulants.

Christina Fulton, a BC-CfE Peer Research Associate who was once an active user of illicit drugs, recalled the positive health impacts of using supervised consumption sites. Fulton said, "Insite was my special place designed for me, and people like me, to go there and be surrounded by folks who would accept me for me and the life I had chosen at that time." Fulton says the supervised consumption site was a judgment-free space where she felt wanted and welcomed, and where she could more safely inject, get wound care, or learn about treatment options.

Clients visiting the H2H SCS with opioid use disorder (OUD) can learn more about Opioid Agonist Therapy (OAT), which provides treatments including Suboxone and methadone to treat opioid dependency.

No deaths have occurred at a supervised consumption site in BC to date, nor has anyone died due to prescribed safe supply. As BC's death toll from overdoses has reached an average of 6.5 deaths per day, it's clearer now, more than ever, that sites like the BC-CfE's SCS are necessary for saving lives.

The BC-CfE remembers Carl Vanderspek



Carl Vanderspek and Dr. Julio Montaner

One year has gone by since the untimely passing of Carl P. Vanderspek, the BC-CfE's dear friend and ardent supporter. Over many years Carl and Dr. Julio Montaner, the BC-CfE's executive director and physician-in-chief, formed a close bond and partnership, through which Carl became intimately familiar with the projects and policy proposals of the BC-CfE.

Carl was deeply and enthusiastically inspired by the BC-CfE's Treatment as Prevention® strategy for HIV/AIDS, HCV, addiction, and beyond. To further these efforts within the DTES, Carl agreed to secure dedicated space on Powell Street, which eventually became the Hope to Health Research and Innovation Complex (H2H).

Working closely with Julio, Carl took the lead to renovate the sites to create the Research and Innovation Complex offering low threshold comprehensive primary care and related services at 625 Powell, a Supervised Consumption Site at 611 Powell and a world-class Research Laboratory at 647 Powell.

Carl exemplified that charity to be worth its name, was performed in silence and without recognition. "Many times, I tried to persuade Carl to let us nominate him for various community awards, government awards, or even a plaque denoting his contribution at the Powell facility. However, he would have none of it. He was a great man and we miss him mightily," reflected Julio.

Without Carl's generosity, H2H would not exist. Today, his legacy continues by his wife's, Marg Hope, philanthropic endeavours through the 625 Powell Street Foundation (for more information, see link: <https://625powell.org>).

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

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www.bccfe.ca

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