



Left to Right: Dr. Silvia Guillemi, Dr. Marianne Harris, Tsubasa Kozai, Narges Ashrafinia

## The enigma of HIV's effects on aging

BC-CfE takes part in long-term studies on physical and mental impact of aging with HIV

**W**e are in a new era of HIV research and care. We have never known more about the virology of HIV. We also have an array of highly effective antiretroviral therapies which suppress HIV to undetectable levels, while extending the life expectancy of individuals with HIV to close to that of the general population.

These are all significant signs of progress; however, the legacy from the height of the HIV epidemic remains today through another complex and multifaceted healthcare challenge.

The average age of a person living with HIV in Canada is now over 50 years old and this is projected to rise above 65 in the next 10 years. While this is a positive indication of the impact of highly active antiretroviral therapy (HAART) and **Treatment as Prevention**® in significantly reducing new cases of HIV, this aging population presents with age-related diseases sooner and more frequently than the general population. This includes cardiovascular and metabolic conditions, as well as cognitive impairment and frailty, among others. Little is understood about why this is the case.

The BC Centre for Excellence in HIV/AIDS (BC-CfE) is playing an active role in research to better understand this population's distinct physiological and psychosocial challenges. Over the last 10 years, BC-CfE researchers have participated in a series of long-term investigations to look more closely at the lifestyle and health factors associated with aging with HIV.

Positive Brain Health Now is one such study. Since 2013, the BC-CfE has participated in this long-term investigation funded by the Canadian Institutes of Health Research (CIHR) with the support of the Canadian HIV Trials Network (CTN).

Led by investigators at McGill University, Positive Brain Health Now researchers are focused on better understanding HIV-related 'brain health' factors and how these impact patient outcomes. This includes general cognitive processes such as concentration and memory, mental health and quality of life. By carefully tracking 856 adults living with HIV over time, researchers hope to understand the risk factors associated with declining brain health.

While those living with HIV may experience higher rates of cognitive impairment, they are also more likely to show physical signs of aging sooner than the general population. In the fall of 2019, the BC-CfE joined the CIHR-CTN CHANGE HIV study which investigates frailty and other aging-related conditions in Canadians over the age of 65 living with HIV. The term frailty is commonplace in geriatric medicine and is used as a marker of physical wellbeing.

Speaking about this study, Dr. Silvia Guillemi, Director of Clinical Education at BC-CfE said, "Many studies look at aging, however typically they follow younger populations as they age. With the CHANGE study, we are looking at an older population from the start and charting their progress over five years looking at various aspects of their lives, including physical activity levels, trauma, among others."

The care and support received at home among older adults with HIV can also impact their overall health outcomes. THRIVE, a study based at the BC-CfE, is exploring experiences accessing home and community supports in BC for those aged 50 years and older. Through qualitative interviews, researchers aim to understand how this population navigates the home and community care system and using novel "service

access mapping" interviews, this study will also document the day-to-day experiences of this population - from where they fill prescriptions to where they access food. Participants' narratives will help researchers understand how shifts in funding priorities have impacted the accessibility and nature of this care.

Dr. Marianne Harris is a clinical research physician with the BC-CfE. Speaking about the importance of aging studies in HIV research, she said, "People living with HIV are now living into their 50s, 60s, 70s and beyond thanks to the success of modern antiretroviral therapy. Now they're facing a new set of issues that affect their quality of life including loss of memory, muscle weakness, breathing problems and so on. They're asking, 'Is this an HIV outcome or is it natural aging, and what can I do about it?'"

"The best way to answer these questions is to study a large and diverse group of people living with HIV over time and look at how the effects of aging can be impacted by different interventions and lifestyle changes. It's important that people living with HIV are actively involved in this research to share their lived experiences and to help us better understand what's most important to them," Dr. Harris explained.

According to the World Health Organization 37.9 million people were living with HIV/AIDS globally in 2018. As cure research continues to evolve, we need to ensure that people who are living with HIV, regardless of their age, are empowered and equipped with the knowledge of how to maintain good health and wellbeing.

» "In BC, people living with HIV have access to the latest advancements in HIV care but aging populations still have significant health challenges compared to the general population. To improve the quality of life and care of those living and aging with HIV, we must learn more about the physiological, mental and psychosocial factors that contribute to this disparity through longitudinal research."

— Dr. Silvia Guillemi, BC-CfE Director of Clinical Education



## Quasi-experiments: Research without an experiment

On February 13th the BC-CfE hosted Dr. Michael Law for a Forefront Lecture entitled “*What’s a quasi-experiment? And why should I care?*” as part of a new Research Methods Series. Dr. Law is the Canada Research Chair in Access to Medicines at The University of British Columbia where his research focuses on pharmaceutical policy.

Speaking to healthcare providers and researchers, Dr. Law defined quasi-experiments as experiments that happen in the real world and they are “a way of finding randomness in the real world that you, as a researcher, can leverage and use to try and determine the causal effects of policies or interventions.” Administrative records, clinical data or surveys can all be used as data sources for quasi-experiments.

Dr. Law spoke of the rapidly growing interest in quasi-experiments and the research method of interrupted time series analysis. This research methodology saw more than 600 *PubMed* citations last year alone and has drawn significant attention from the research community over the past 10 years.

An example Law gave of interrupted time series analysis was the coverage for hepatitis C drugs here in BC. As we know when PharmaCare coverage for these drugs was



Dr. Michael Law

first introduced in 2015, we can examine the infection levels and healthcare trends before and after this timepoint. This information can be used to better understand the impact of PharmaCare funding on drug uptake and infection rates over time.

While showcasing how quasi-experiments are a useful evaluation tool, he also pointed out some potential flaws in using these methods for particular healthcare conditions. For issues like the opioid crisis, he noted there is great difficulty, if not impossibility, in identifying the impact of single policy interventions. There are many interventions or variables, including local illicit fentanyl supply, the prevalence of supervised injection sites, or provincial policies such as declaring a public health emergency, which makes the analysis of this health data through quasi-experiments more challenging.

While randomized controlled trials remain the gold standard to advance clinical research and knowledge, Dr. Law argued that researchers should also be looking to quasi-experiments as a powerful evaluation method. It is one that can demonstrate causal effects, uses readily available data and is both time- and cost-effective.

## EVENT

### BC-CfE shines spotlight on HIV cure research at Nanaimo community event



Left to Right: Bradley Jones, Darren Lauscher, Chad Dickie, Dr. Zabrina Brumme and Terry Howard

Researchers, health care practitioners, and community members gathered in downtown Nanaimo on February 7th for an open dialogue event on the latest advances in HIV cure research.

“*Why we need an HIV cure and how we are trying to get there? Challenges, opportunities and ways forward for Persons Living with HIV*” was organized by Chad Dickie, the chair of the board of directors of AVI Health and Community Services (formerly AIDS Vancouver Island). Dickie planned the event as an opportunity for those living with HIV on Vancouver Island to find out more about cure research taking place on their doorsteps in BC.

Speaking about the event Dickie said, “This dialogue brought together cure research scientists,

community-based researchers, and is a wonderful chance for greater, more meaningful involvement of people living with HIV in research which is taking place right here in our province. It’s also an opportunity to develop future community engagements that include HIV lived experience, primary care, and research (cure and community-based).”

Dr. Zabrina Brumme, Laboratory Director at the BC-CfE, spoke at the event and gave an overview of the strategies currently being pursued towards the ultimate goal of curing HIV. She explained the importance of the made-in-BC **Treatment as Prevention**® strategy, a proven and effective clinical approach pioneered by Dr. Julio Montaner, the BC-CfE’s Executive Director and Physician-in-Chief. This strategy advocates for early access to HIV testing and immediate, sustained access to treatment. This approach has been shown to improve both quality of life and longevity, while curbing transmission. New HIV rates are at a historic low across the province of BC as a result of the widespread application of this treatment approach.

Dr. Brumme said, “Events such as these are really important to move HIV cure research forward.

Researchers need to work hand-in-hand with health care practitioners and community members to ensure that when an HIV cure is eventually found, it will be accessible and available to all who want it.”

Brad Jones, a doctoral student at the University of British Columbia and Research Assistant at the BC-CfE also spoke to participants about his research. Jones models the evolution of HIV within an individual using computational tools. He investigates when, where and how long it takes HIV to integrate into a person’s genome and also how the virus migrates throughout an individual’s body.

During the question period following the presentations by Jones and Dr. Brumme, the audience learned about HIV’s evolutionary history. Researchers spoke about HIV’s origins in central Africa and when and how the first laboratory samples of HIV were obtained.

Community-based researchers also spoke at the event explaining how individuals living with HIV can get involved in research and advocacy.

Darren Lauscher is a member of the community advisory board of the Canadian HIV Trials Network. He was first diagnosed with HIV in 1985 at a time when antiretroviral therapy development and cure research were both in their infancy, with people dying of AIDS every day in BC. He spoke about the monumental changes he has witnessed in HIV clinical care since then and pointed attendees to resources they can use to find out more about upcoming clinical trials and studies in HIV research.

The BC-CfE is committed to engaging with communities in BC and nationally through its collaborative research and partnership with community organizations.

For more information about the work of AVI on Vancouver Island, visit <http://avi.org>.

CAHR 2020: Call for late breaker abstracts

## CONFERENCE CAHR 2020

The Canadian Association for HIV Research (CAHR) is calling for final abstract submissions for its 29th annual conference taking place from April 30 to May 3, 2020 in Quebec City. Submissions will be accepted up to March 16, 2020 to ensure ground-breaking research which will move the needle on national and international HIV research is shared with conference delegates. For further information on this year’s conference, visit the CAHR website <https://www.cahr-acrv.ca/>.

## LECTURES & EVENTS

### HIV Care Rounds

**Title: Anal Cancer Screening in Men Living with HIV: An Update on the HPV-SAVE Study**

Speaker: Dr. Troy Grennan

Wednesday, March 11, 2020, 12–1PM

Conference Room 6, Providence Level 1, St. Paul’s Hospital

### Forefront Lecture

**Title: The BC HIV PrEP Program: Uptake, retention, and new HIV diagnoses**

Speaker: Dr. Junine Toy

Wednesday, March 18, 2020, 12–1PM

Cullen Auditorium, Providence Level 1, St. Paul’s Hospital

### BC-CfE Update - Spring Edition

Formerly the HIV/Antiretroviral Update

Friday, May 8, 2020, 8:30AM - 4:30PM

Grand Ballroom-North Tower Sheraton Wall Centre Hotel (located across from St. Paul’s Hospital in Downtown Vancouver)

For more information, contact us at [Education@cfenet.ubc.ca](mailto:Education@cfenet.ubc.ca) or visit our website at <http://education.cfenet.ubc.ca>

## 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 B.C. and conduct analyses of the effectiveness of HIV-related programs.

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E-mail  
[info@cfenet.ubc.ca](mailto:info@cfenet.ubc.ca)

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