



HERE
Study



Improving patient engagement and retention in healthcare at Hope to Health

A BC Centre for Excellence in HIV/AIDS (BC-CfE) research team is working to evaluate how a new primary care clinic can keep clients engaged in health care among residents of Vancouver's Downtown East Side (DTES).

The "Hope to Health Engagement and Retention Evaluation (HERE) Study" is being conducted from the Hope to Health (H2H) Research and Innovation Centre located on Powell Street. Opened in late 2019, the Research and Innovation Centre was developed with an integrated, team-based approach to primary health care, based on the best evidence for service design in engaging under-served and marginalized urban core populations.

The DTES is one of the lowest income neighbourhoods in Canada with median household incomes of approximately \$23,000 and is characterized by high levels of homelessness and unstable housing. The population of the DTES is heavily overrepresented by people living with mental illnesses and substance use disorders, as well as pervasive trauma and structural violence. Other chronic medical conditions, including HIV and HCV infection, are hyper-endemic with prevalence estimates of 30% and 70% respectively. DTES residents have also been greatly impacted by the

opioid crisis, with the highest rate of death due to illicit drug overdoses in BC, at over 100 deaths/100,000 population. There is a striking 15-year disparity in life expectancy between residents of the DTES and residents of neighbouring areas of Vancouver.

DTES residents often rely on DTES community health centres (CHCs), or clinics outside of the neighbourhood in order to access primary healthcare services, as there are very few family-practice or walk-in clinics in the area. However, CHCs face tremendous challenges in engaging and retaining clients with complex medical and psychiatric needs, a challenge made even more difficult by limited capacity to enroll new clients. As such, many DTES residents predominantly access health care through emergency services at one of the three hospitals in central Vancouver.

Following hospital care, many patients discharged do not have an identified primary healthcare provider, which leads to limited outpatient follow-up and frequent re-admission. Recent estimates from Vancouver Coastal Health (VCH), suggest that about 7,500 residents of the DTES are unattached or poorly attached to clinical services.

The relatively recent establishment of the BC-CfE's H2H Primary Care Clinic and the HERE

Study represents an extraordinary opportunity to address these pervasive health systems gaps affecting DTES residents.

Dr. David Moore, the Principal Investigator of the study and a clinician at H2H noted, "This H2H Primary Care Clinic provides an ideal environment for clinicians, researchers and members of the community to study ways to better engage DTES residents in effective primary health care."

The HERE Study will be using the WelTel mobile health intervention platform. WelTel is designed to be patient-centered, empowering people to manage their own health needs and take part in their healthcare decisions via a two-way automated check-in text messaging system.

BC-CfE clinicians and researchers with the HERE Study will adapt the WelTel platform and experience, capitalizing on substantial in-kind donations of 1,400 refurbished mobile phones and data plans through Telus' Mobility for Good program for the specific needs of the DTES population.

The HERE study represents a critical opportunity to gather the detailed data required to evaluate interventions specific to this unique client population, and allows researchers to share lessons learned with providers serving similar clients in urban settings across Canada.

» "The HERE study will assist clinical staff at the H2H Centre to identify novel and innovative ideas for engaging and empowering clients at the clinic. Availability of mobile technology will certainly contribute to keep clients engaged."

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



BC-CfE studies immune response to COVID-19 vaccines among the elderly

» A new research report by the BC-CfE adds to the growing body of evidence that elderly individuals don't mount as strong, or durable, immune responses to the COVID-19 vaccines as compared to younger individuals. This COVID-19 Immunity Task Force (CITF)-funded study was done in collaboration with Providence Health Care and Simon Fraser University. The study is currently in pre-print and has not yet been peer-reviewed.

Titled *"Reduced magnitude and durability of humoral immune responses by COVID-19 mRNA vaccines among older adults"*, the research was comprised of data from 151 individuals. These individuals were: 89 healthcare workers, 23 residents of long-term care and tenants of assisted-living, and 39 seniors living in the community.

We know mRNA vaccines reduce COVID-19 incidence and severity. However, the durability of vaccine-induced immune responses, particularly among the elderly, remains incompletely characterized.

The study analyzed three different kinds of antibody immune responses up to three months following the second dose of a COVID-19 vaccine. First the researchers measured the total amount of antibodies against the viral spike protein that were produced by the vaccine. Second, the researchers looked at the ability of these antibodies to block the interaction between the viral Spike protein and its cellular receptor ACE2, which is the cell surface protein that allows the coronavirus to infect human cells. Finally, the researchers measured the ability of vaccine-induced antibodies to block the SARS-CoV-2 virus from infecting cells in vitro.

The researchers found that after both one and two vaccine doses, older adults exhibited lower antibody responses for all three measures tested. Importantly, the association between older age and poorer vaccine responses differences remained even after adjusting for sociodemographic factors, other underlying health conditions, and vaccine-related variables.



Senior author Dr. Zabrina Brumme

In addition, the researchers found that vaccine-induced immune responses had waned substantially in everyone, regardless of age, by three months after the second dose. which means that the immune responses of older adults remained weaker at all time points tested. The researchers also found that older adults also displayed reduced ability to block ACE2 binding by the Delta variant, which is now circulating widely.

The research adds to a growing body of evidence that the antibody immune response to COVID-19 mRNA vaccines is significantly weaker with age, and universally wanes over time. This will likely reduce antibody-mediated protection against SARS-CoV-2 and the Delta variant as the pandemic progresses. In the pre-print version of the study, the researchers said, "We conclude that older adults may benefit from additional immunizations or boosters, as a priority."

"Because the peak vaccine-induced immune responses of older adults were less robust than those of

younger adults to begin with, and because we are now seeing a decline in these responses over time, older adults may begin to become susceptible to SARS-CoV-2 sooner, as the vaccine effects wear off." said Dr. Zabrina Brumme, BC-CfE Laboratory Director and senior author for this study.

This kind of research helps public health officials and researchers in Canada better understand immunity from current COVID-19 vaccines. The findings were presented to the National Advisory Committee on Immunizations at their recent September meeting. They have also been shared with public health officials in BC.

This work was supported by the Public Health Agency of Canada through a COVID-19 Immunology Task Force COVID-19 "Hot Spots" Award, the Canada Foundation for Innovation through Exceptional Opportunities Fund COVID-19 awards, and the National Institute of Allergy and Infectious Diseases of the National Institutes of Health.

EDUCATION

Change of Leadership for BC-CfE's Clinical Education and Training Program

» The BC-CfE's Clinical Education and Training Program recently saw a change in leadership from Dr. Silvia Guillemi, who started leading the program when it began back in 2011, to Dr. Val Montessori. Dr. Montessori has multiple roles, as she will be leading the Clinical Education and Training Program while also serving as the Head of the Division of Infectious Diseases at St. Paul's Hospital and as the Co-chair of the Committee for Drug Evaluation and Therapy. Dr. Montessori also works as a Clinical Associate professor in the Division of Infectious Diseases at the University of British Columbia.

The Clinical Education and Training Program was designed to provide learning opportunities on the diagnosis, treatment, management and care of HIV/AIDS and related conditions through personalized learning programs.

Under Dr. Guillemi's guidance, the program grew to include the work the BC-CfE has taken on under its guiding strategy of **Treatment as Prevention® (TasP®)**. TasP®, formally introduced in 2006, is based on the proven concept that providing access to antiretroviral therapy as early as possible following an HIV diagnosis dramatically reduces the spread of HIV. Following the TasP® strategy, the BC-CfE has applied its expertise in other areas including other medical issues, substance use, Hepatitis C testing and care, and chronic disease management.

The achievements of Dr. Guillemi during her tenure as leader of the Clinical Education and Training Program have not gone unnoticed. In October of 2019, Dr.



Dr. Val Montessori

Guillemi received the UBC Faculty of Medicine Award for Innovation in Continuing Professional Development/ Continuing Medical Education. The honour recognized how Dr. Guillemi and her team had implemented "unique and innovative opportunities for training and education in the field of HIV/AIDS in BC". She also received the Continuing Professional Development Award from the College of Family Physicians of Canada for the development and implementation of the Intensive Preceptorship Training Program in HIV/AIDS in October of 2016.

Having now handed the reins of leadership to Dr. Montessori, and since moving to a role as a Clinical Advisor to the BC-CfE, Dr. Guillemi said, "I am very grateful for the opportunity that I had to lead the BC-CfE Clinical Education Program during all these years. This program provided a unique opportunity for BC-CfE to showcase all the great work that their experts are doing towards the achievement of the 90-90-90 and towards improving the quality of life of PLWH. I want to thank the great team that worked with us all these years, and I have no doubts that Dr. Montessori will continue to provide a very high quality of education and training through this program."

Dr. Montessori said about her new role, "I'm looking forward to continuing the exciting work Dr. Guillemi and her team have been doing and leveraging my connections with Infectious Diseases, the Urban Health Inpatient Infection Unit and others to further enhance learning in BC."

BC-CfE's Dr. Robert Hogg elected as a Fellow of the Royal Society of Canada



Senior Research Fellow at the BC-CfE and Distinguished Professor and Associate Dean of Research in the Faculty of Health Sciences at Simon Fraser University, Dr. Robert Hogg was recently elected as a Fellow of the Royal Society of Canada (RSC) for 2021. This recognition by the RSC for career achievement ranks among the highest academic honours for a Canadian.

Dr. Hogg was among the small team of researchers that helped establish the BC-CfE in 1992. He was the architect of the BC-CfE's Drug Treatment Program, and over the years generated much of the scientific output that informed HIV/AIDS control strategies in BC and beyond. Dr. Hogg is currently working on the COAST study (Comparative Outcomes and Service Utilization Trends), a population-based study examining health outcomes and health service use of those living with HIV, as compared to a random ten percent sample of BC's population. As a world-renowned expert in population health, Dr. Hogg's career focus has been to highlight the inequities in health among vulnerable people living with HIV, and how to change models of care to lessen or eliminate these inequities.

The recent recognition by the RSC follows several other accolades bestowed upon Dr. Hogg. He is an Officer of the Order of Canada and a Fellow of the Canadian Academy of Health Sciences.

Dr. Julio Montaner, Executive Director & Physician-in-Chief of the BC-CfE, himself a Fellow of the RSC, said, "The BC-CfE celebrates this important recognition to Dr. Hogg's long-term commitment to advance the fight against HIV/AIDS in BC and around the world through the generation of high quality and high impact research. Over the last several decades, Bob has proven to be a prolific researcher, a great mentor, a superb teacher, and above all a warm and wonderful individual."

Distinguished former student of Dr. Hogg, Dr. Kate Salters said, "Dr. Hogg's incredible contributions to science, academia and public health are widely recognized by his colleagues, his trainees, and the communities he works with. And now, these contributions are reflected in him being awarded this prestigious honour. Bob truly embodies what it means to be an engaged researcher. He leads with empathy and a genuine scientific curiosity, and I think that has laid the foundation for his world-renowned program of research. He certainly has been a role model for me and countless others in the field."

The induction ceremony for Dr. Hogg will take place on Friday, November 19, 2021.

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.

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