BRITISH COLUMBIA
CENTRE *for* EXCELLENCE
in HIV/AIDS

TO STOP HIV & AIDS THROUGH RESEARCH AND INNOVATION

BC CENTRE FOR EXCELLENCE IN HIV/AIDS

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THE BC CENTRE FOR EXCELLENCE IN HIV/AIDS HAS PUBLISHED MORE THAN **500 PAPERS** IN PEER-REVIEWED JOURNALS

500

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Dr. Julio Montaner, director of the British Columbia Centre for Excellence in HIV/AIDS and former president of the International AIDS Society, announces Treatment as Prevention as the most effective approach in the fight against HIV and AIDS.

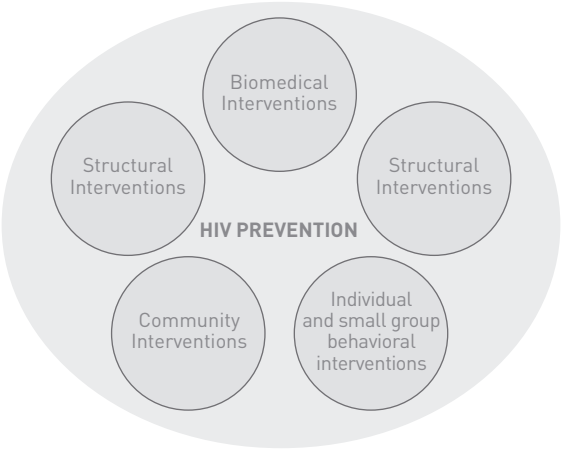
SUMMARY

THE CORE OF THE BRITISH COLUMBIA CENTRE FOR EXCELLENCE IN HIV/AIDS (BC-CFE) IS AN INNOVATIVE GROUP OF PHYSICIANS, RESEARCH SCIENTISTS AND STAFF DEDICATED TO IMPROVING THE HEALTH OF BRITISH COLUMBIANS LIVING WITH HIV AND AIDS, AND FIGHTING HIV AND AIDS GLOBALLY.

Together they:

- Provide clinical care to more than 1,100 HIV-positive patients at the Immunodeficiency Clinic based at St. Paul's Hospital
- Dispense medication to more than 5,900 British Columbians living with HIV
- Conduct epidemiological, clinical and laboratory research related to HIV/AIDS
- Established and direct the Therapeutic Guidelines for Treatment of HIV/AIDS in B.C.
- Established and direct the Management of Accidental Exposure Guidelines for B.C.
- Provide education and training to health care professionals in B.C., other parts of Canada and abroad

Combination prevention



Key research contributions include:

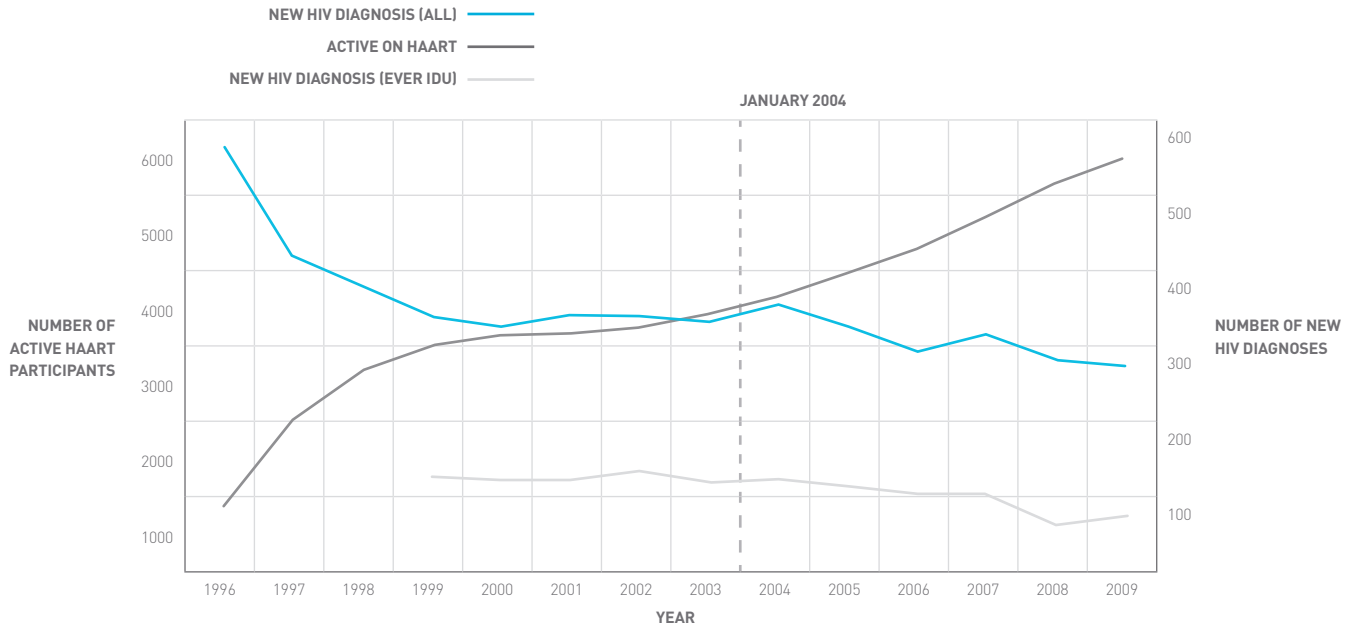
- Demonstrating the effectiveness of highly active antiretroviral therapy (HAART) treatment in 1996 which led to the introduction of the "drug cocktail," the state-of-the-art HIV treatment
- Identifying critical issues of when to optimally start antiretroviral therapy
- Pioneering the Treatment as Prevention concept
- Recognizing and managing HIV drug toxicities
- Identifying determinants of the development of HIV resistance to antiretroviral therapies
- Evaluating the impact of salvage HIV therapy strategies
- Implemented the Seek and Treat for Optimal Prevention of HIV/AIDS (STOP HIV/AIDS)
- Continuing to develop innovative treatment approaches to HIV

The focus of the BC-CfE is to significantly reduce HIV in the province of British Columbia by providing appropriate treatment to all HIV-positive British Columbians eligible for HAART.

HIV/AIDS IN BRITISH COLUMBIA

SINCE 1981, THE YEAR HIV/AIDS FIRST APPEARED IN NORTH AMERICA, MORE THAN 33.4 MILLION PEOPLE HAVE DIED OF AIDS WORLDWIDE. IN BRITISH COLUMBIA, PRIOR TO THE CREATION OF THE BC CENTRE FOR EXCELLENCE IN HIV/AIDS IN THE EARLY 1990s, ONE PERSON WAS DYING OF AIDS ALMOST EVERY DAY. SINCE THEN, WITH THE INTRODUCTION OF LIFE-SAVING DRUG THERAPIES, IN CANADA AND OTHER DEVELOPED COUNTRIES, HIV HAS BECOME A CHRONIC AND MANAGEABLE DISEASE.

Today in Canada, more than 65,000 people are living with HIV infection (including AIDS), of whom about 13,300 (HIV-positive men and women) reside in British Columbia. People who are HIV positive live in cities across the province, with the majority living in the Lower Mainland.



Number of active HAART partipants and number of new HIV diagnoses peryear in BritishColumbia, Canada, 1996-2009 pvalues are for trend and were obtained from the generallised additive model. Injecting drug user (IDU) refers to individuals who have ever injected illicit drugs. (HAART=highly active antiretroviral therapy, IDU=INJECTING DRUG USER)

While HIV has become a chronic disease, it would be misguided to think that HIV is not still a devastating diagnosis. HIV is unforgiving and has a tremendous ability to adapt to drug environments. The virus can mutate to become resistant to the medication a person takes to combat it, leading to treatment failure. Despite more than 20 years of intense research, there is no cure for HIV and an effective vaccine remains elusive. Neither is likely to become a reality for at least another decade.

B.C. had been hit hard by HIV. At one time B.C. ranked third in Canada after Ontario and Quebec with regard to the number of persons living with HIV, B.C. had the highest per capita rate of HIV infection in the country. Progress has been made, as there were only 301 new infections in 2010. People who use injection drugs account for approximately one-third of new HIV cases. The majority of HIV infected individuals reside in the Lower Mainland. The remainder are scattered throughout B.C. with particular concentrations in Victoria, Nanaimo, Prince George, Kelowna and Whalley. Hard-to-reach, marginalized populations bear a disproportionate burden of the HIV epidemic in B.C., including those affected by unstable housing, poverty, mental illness, sex work or injection drug use.

In Vancouver's Downtown Eastside, HIV prevalence exceeds 30 per cent among some vulnerable groups. For years, this neighbourhood has been the epicentre of public injection drug use and its related harms, a key contributor to the high rates of HIV infection and transmission.

COSTING LIVES

Every new HIV infection today represents an unacceptable failure in our society. This translates into fully avoidable personal suffering for the infected person, as well as for their friends and family. Each new infection generates tremendous preventable long-term demands on an already strained health care system. Health economists estimate the lifetime cost of the medical management of an HIV infected person in North America is between $250,000 and $750,000.

In 2012, more than 30 years after the epidemic first surfaced in B.C., HIV/AIDS is far from controlled. Despite substantial progress in treatment and prevention, new infections continue to emerge at unacceptable rates. Over half of those infected with HIV fail to access life-saving treatments in a timely fashion.

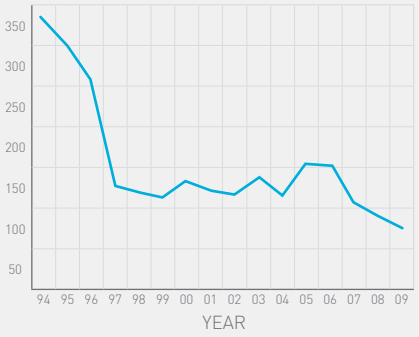
The BC-CfE continues to rise to the new challenges posed by this formidable enemy. We must redouble our efforts and translate the results of our research into action.

The BC-CfE develops innovative ways to curb the growth of new HIV infections and avert AIDS-related disease and death. And we must continue to show the world how this can be done. B.C. enjoys a well-deserved reputation as a leader in the international fight against HIV/AIDS. We have an obligation to continue to provide strong and effective leadership at this critical time in the history of the epidemic.

HIV/AIDS IN B.C.

13,300	people living with HIV/AIDS
20 to 25 per cent	of Canada's HIV/AIDS cases
301	new cases of HIV/AIDS in 2010
25-30 per cent	have never received HAART

HIV/AIDS MORTALITY RATE 1994 TO 2009



TREATING PEOPLE WITH HIV/AIDS IN B.C.

WHEN THE HIV EPIDEMIC WAS FIRST IDENTIFIED IN THE EARLY 1980s, VANCOUVER'S ST. PAUL'S HOSPITAL DID NOT HESITATE TO RESPOND TO THIS EMERGING CHALLENGE. A GROUP OF COMMITTED HEALTH CARE PROVIDERS RALLIED TOGETHER TO FORM THE AIDS CARE TEAM, LED BY DR. ALISTAIR MCLEOD UNDER THE AUSPICES OF DR. JOHN RUEDY, THEN CHAIRMAN OF THE DEPARTMENT OF MEDICINE.

In 1986, as case numbers mounted, St. Paul's Hospital established what is today the John Ruedy Immunodeficiency Clinic (IDC). The IDC was established as a comprehensive primary and specialty clinic, as well as a specialized research unit for HIV-infected individuals. In 1988, Dr. Julio Montaner became the IDC director, as well as the director of the newly established AIDS Research Program within the Department of Medicine at St. Paul's Hospital and the University of British Columbia.

THE PROVINCE, 2011: The Missing Women Inquiry continues in Vancouver, Dr Kate Shannon (left), a University of B.C. researcher, gave testimony.

Four years later, in 1992, in response to the unabated epidemic, the provincial government established the BC Centre for Excellence in HIV/AIDS (BC-CfE) a program at St. Paul's Hospital. The BC-CfE was charged with the responsibility to define, implement, evaluate and enhance the necessary management programs to improve and prolong the lives of HIV-infected British Columbians.

Dr. Michael O'Shaughnessy was recruited as the founding director of the BC-CfE and remained as such until his retirement in September 2003. Dr. Julio Montaner, formerly the Director of Clinical Activities at the BC-CfE, took over the Director's role in 2005 and was confirmed in the position in September 2005, following an open national search.

DR. MICHAEL O'SHAUGHNESSY

In 2003, the BC-CfE redesigned the IDC based on the chronic disease management model to better serve the evolving needs of its patients. Since then, the IDC has seen an explosive rate of growth, reaching just over 1,100 registered patients in the primary care clinic and over 6,300 primary care visits with an experienced HIV primary care physician.

PROLONGING LIFE THROUGH RESEARCH AND INNOVATION

The BC-CfE has long been a world leader in HIV/AIDS treatment, research, and care. For 20 years, BC-CfE investigators have made unique contributions through program development, implementation, and evaluation, as well as in the areas of epidemiological, clinical, and laboratory research pertaining to HIV/AIDS.

In 1992, the BC-CfE established the first provincial HIV/AIDS Therapeutic Guidelines document in Canada, which is reviewed and updated biannually. The top experts in HIV, led by chairperson and dermatologist Dr. Alastair McLeod, formed the Therapeutic Guidelines Committee to create a standard approach to what was a very non-standard medical problem. Soon after the first committee meeting, physicians throughout the province had access to the latest knowledge on the most effective treatment regimens via the Therapeutic Guidelines for Treatment of HIV/AIDS and a focused group of leading researchers, and HIV physicians who were only a phone call away. The BC-CfE Therapeutic Guidelines provide the key instrument to ensure that all HIV infected British Columbians can have access to the highest standard of care wherever they reside in the province.

Also developed in 1992, the Management of Accidental Exposures Guidelines ensures that all occupational exposures to HIV anywhere in the province are dealt with promptly, safely and under expert supervision. This program is currently supported by WorkSafe BC and is updated on a regular basis.

BC-CfE investigators have also made key contributions to the management of HIV infection. In 1996, Dr. Montaner was the lead investigator of a seminal international clinical trial, which demonstrated that non-nucleoside reverse transcriptase inhibitor (NNRTI)-based highly active antiretroviral therapy (HAART) could render HIV plasma levels undetectable and lead to remission of the disease.

NO LONGER A DEATH SENTENCE IN B.C.

When the BC-CfE pioneered the introduction of highly active antiretroviral therapy in B.C. in 1993, the face of HIV/AIDS changed forever. The health and longevity of people with HIV/AIDS has drastically increased, and rates of transmission have plummeted.

Before HAART

Twenty five per cent of children with HIV-positive mothers were born with the disease

Fourteen per cent of people with HIV died each year

A 20-year-old with HIV could expect to live about **10 years**

After HAART

Less than 1 per cent of children with HIV-positive mothers are born with the disease

Less than 3 per cent of people with HIV die each year

A 20-year old with HIV and receiving treatment can expect to live about **30 years**

Confirmatory evidence was presented that same year from U.S.-based investigators using an alternative HAART regimen at the landmark Vancouver 1996 International AIDS Society (IAS) conference, organized by Drs. Montaner, O'Shaughnessy, Rekart, and Schechter. This led to the immediate introduction of the "drug cocktail" as a novel therapeutic strategy for HIV by the BC-CfE. Eventually, the "drug cocktail" was adopted internationally, including the developing world. As a result, Vancouver is widely acknowledged as the birthplace of modern HIV/AIDS therapy.

Under its mandate to decrease HIV incidences, in 2006 the BC-CfE put forward the notion that expanding access to treatment can reduce new HIV infections and curb the growth of the epidemic.

This pioneering concept is called Treatment as Prevention. This notion has gained the support of a variety of national and international key opinion leaders and organizations including: the Stephen Lewis Foundation, the Bill Clinton Foundation, the World Health Organization (WHO), and the Joint United Nations Program on HIV/AIDS (UNAIDS). The BC-CfE began testing this strategy with a pilot project in Prince George and the Downtown Eastside (DTES), and simultaneously in a resource-constrained setting.

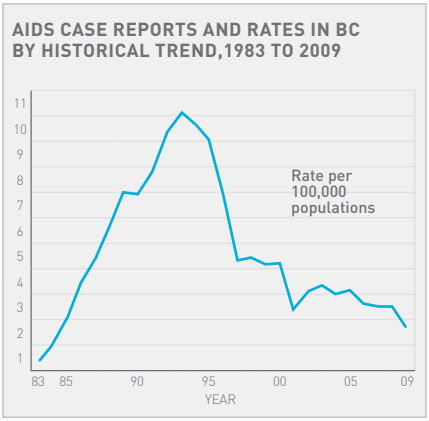
As part of its commitment to enhancing HIV/AIDS expertise in the province, the BC-CfE has always welcomed trainees at all levels, from the full spectrum of health-related disciplines, with varying degrees of care and research emphasis. The BC-CfE formalized its education and training programs for primary care and specialty physicians and other health care providers through a preceptorship program.

THE BC-CFE DRUG TREATMENT PROGRAM

Since its inception, the BC-CfE has been charged with providing antiretroviral (ARV) medications through its Drug Treatment Program (DTP), funded by Pharmacare, to all medically eligible HIV-infected individuals living in the province. The BC-CfE is also responsible for guiding the use of these agents and evaluating the impact of the DTP.

As of November 2011, 5,900 HIV-infected British Columbians were receiving ARV medications through the BC-CfE. Since the DTP's inception, the BC-CfE has provided treatment to approximately 10,000 HIV-positive individuals in B.C.

Using the DTP database, BC-CfE researchers have been able to gain powerful new insights into the effects of highly active antiretroviral therapy (HAART) at the population level. The DTP has become a unique resource which has contributed to numerous peer-reviewed publications in prestigious international medical journals. In particular, the DTP database has been used in innovative ways to shed light into the very critical issues of when to optimally start ARV therapy, to characterize emerging toxicities, to study the determinants of the development of HIVresistance to ARVs and to evaluate the impact of salvage therapy strategies.



The widespread distribution of HAART regimens through the DTP has had a dramatic impact on the lives of HIV-infected British Columbians. Since 1996, among those engaged in care, the BC-CfE DTP has documented a greater than 90 per cent decrease in the yearly rates of AIDS-related diseases and death in B.C.

But for many people living with HIV, maintaining a daily drug regimen for the rest of their life is a difficult task. Slight deviation from 100 per cent adherence to therapy regimens can result in drug resistance and treatment failure. Perfect adherence can be a major challenge, and many of the drugs' significant side effects make 100 per cent adherence even more challenging.

Once the virus develops a resistance to the drugs, HIV infection becomes more difficult and costly to treat. Co-morbid conditions, including hepatitis C and psychiatric illness, also interfere with an individual's ability to tolerate this life-saving HIV therapy.

EXPANDING TREATMENT AS PREVENTION

It is estimated that some 2,500 British Columbians have HIV and are not aware of their status. Treatment as Prevention aims to access these people through widespread testing and HAART treatment to those who are medically eligible. HAART treatment reduces the level of HIV in the blood to undetectable levels, improving the health of people with HIV, while also decreasing the level of HIV in sexual fluids to undetectable levels, reducing the likelihood of HIV transmission by more than 95 per cent.

More than 5,900 individuals are currently on HAART through the BC-CfE DTP. However, over 50 per cent of those on HAART started therapy with baseline CD4 cell count below 350 cells/mm^3. This is associated with unnecessary AIDS-related morbidity and potentially compromised clinical outcomes, and generates a variety of preventable health care resource utilizations and expenses.

Of further concern, a study conducted by the BC-CfE found that approximately half of the HIV-related deaths in B.C. occurred among individuals who never accessed readily available life-saving HAART.

A variety of factors contribute to the underutilization of HAART, including late HIV diagnosis and presence of co-morbidities (especially mental illness, addictions, and injection drug use). Furthermore, hard-to-reach populations remain disproportionately affected: notably, Aboriginal people, sex workers, street-involved youth, immigrants from HIV-endemic countries, and younger men who have sex with men (MSM), as well as the homeless and the poor. As one patient candidly said, "It's hard to worry about HIV therapy when you have no roof or anything to eat."

Men continue to make up the majority of British Columbians taking ARV therapy. However, the proportion of women has increased from about one in 20 in 1994 to one in six in 2012. Similarly, the proportion of persons in B.C. receiving ARV therapy who use injection drugs has also increased, from just over one in 10 to almost one in three.

Aboriginal people are disproportionately over-represented in British Columbia's HIV/AIDS population. In 2001, the rate of infection among Aboriginal people in British Columbia was approximately twice the rate for Aboriginal people overall in Canada. Aboriginal people accounted for 13 per cent of new HIV cases in 2010 despite making up just 2.5 per cent of the province's overall population.

HAART cannot cure HIV or AIDS; however, it can put the disease in long-term remission, preventing disease progression and death, as well as significantly reduce HIV transmission. In addition, there are major cost savings to the health care system when HIV is prevented.

As such, there is a powerful moral and ethical imperative to facilitate access to HAART, particularly among hard-to-reach populations.

TIKO KERR

Vancouver artist Tiko Kerr has been living with HIV for more than 20 years. In 2005, it almost killed him.

Like many long-term patients living with the disease, the drugs he was taking to combat HIV had stopped working. It wasn't bad enough that Kerr had to fight the disease; he also had to fight the federal government for access to two drugs not yet approved by Health Canada. A new regimen including the experimental agents TMC114 and TMC125 represented the last hope for saving his life.

Kerr's doctor, BC-CfE director Dr. Julio Montaner, applied to Health Canada's Special Access Program for limited access to the experimental drugs on behalf of Kerr and five others who could also benefit from the medications.

The request fell on deaf ears. As Kerr's viral load increased and his immunity (CD4 cell count) fell, his condition deteriorated. He was weak, depressed and wasting away at a rapid pace. He could no longer work or exercise. Without some kind of intervention, Kerr feared the end was near.

It took months before Health Canada relented, following significant pressure by Dr. Montaner as well as extensive media coverage and public outcry. The BC-CfE was finally granted permission to provide the experimental drugs to the six patients. By that time one of the patients had died and another patient was hospitalized with a drug-resistant fungal infection. The remaining three, including Kerr, feared that it may have been too late to reverse their fate.

Dr. Montaner expeditiously implemented a new individually tailored experimental regimen for each one of the five surviving patients, including Kerr. Within five days of Kerr starting the new drugs, his viral load dropped by 90 per cent, and today the virus is not detectable in Kerr's blood. All five patients suppressed the virus in the blood and regained their good health and remain on the treatment. Today, Kerr travels around the globe, talking about his experience and inspiring others. He continues to paint, row and live fully with HIV.

"It was a very, very cathartic exercise for me," Kerr said about his experience being denied the new medications. "I was just so angry with Health Canada. I thought, 'How dare you tell me my life has no value?'"

RESEARCH THAT SAVES LIVES

SINCE ITS INCEPTION, THE BC-CFE HAS CREATED AN INNOVATIVE, INTEGRATED RESEARCH AND TREATMENT MODEL THAT IS UNIQUE IN CANADA, AND RANKS AMONG THE BEST IN THE WORLD. THE MODEL AGGRESSIVELY MONITORS HEALTH OUTCOMES, AND THESE OUTCOMES INFLUENCE THE METHOD AND TYPE OF TREATMENT THE BC-CFE PROVIDES.

This model of management and delivery allows residents of British Columbia who are HIV positive to have the fastest access to the best HIV care possible. The BC-CfE incorporates a multidisciplinary team of health care professionals and researchers who collaborate in a variety of province-wide activities. The BC-CfE conducts high impact clinical, laboratory, epidemiological and behavioural research. It has the unique capacity to translate research results into policy and practice that positively impact the lives of people living with HIV.

Insite has reduced HIV risk behaviour

The BC-CfE's mission is to continue to be a recognized national and international leader in the fight against HIV/AIDS based on the development, implementation and dissemination of novel evidence-based strategies. The BC-CfE has a provincial focus; however, it strives to make its work of national and international relevance and to be a leader in the global fight against HIV and AIDS.

THE BC-CfE MANDATE:

- To improve the health of British Columbians living with HIV through the development and dissemination of comprehensive research and treatment programs for HIV and related diseases
- To monitor the evolving impact of HIV/AIDS on the population of B.C.
- To develop cost-effective research and therapeutic protocols and programs for the treatment of HIV and related diseases
- To provide educational support programs to health care professionals to support optimal treatment and care of HIV-infected individuals
- To conduct analyses of the effectiveness of programs for investigating and treating HIV and related diseases

INSITE

InSite, North America's first medically supervised injecting facility run by Vancouver Coastal Health, has been open in Vancouver's Downtown Eastside since September 2003.

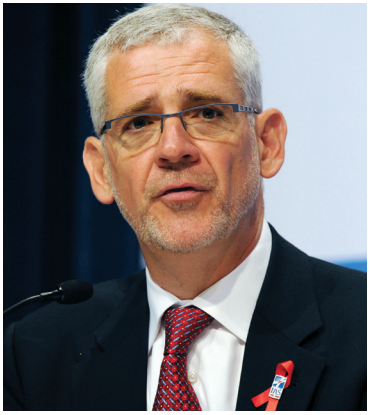
The scientific evaluation of InSite has been carried out by researchers at the BC Centre for Excellence in HIV/AIDS and the Department of Medicine at the University of British Columbia. Results of the evaluation research have been published in more than 30 articles in the world's leading peer reviewed scientific and medical journals.

InSite has proven to reduce HIV risk behaviour. Among injection drug users, sharing needles is one of the primary ways that HIV and other blood-borne diseases, such as hepatitis C, are spread. People who use InSite are less likely to share needles, and in turn less likely to spread infectious diseases. In addition, InSite research showed a greater than 30 percent increase in the use of detoxification programs after one year of operation.

Despite this scientific research showing that Insite has in many ways improved the health and well-being of individuals and communities in Vancouver's Downtown Eastside, the facility remained under constant threat of shut down by the federal government. The case was eventually brought before the Supreme Court of Canada (SCC). In September 2011, the SCC ruled unanimously that the doors to InSite are to remain open.

While InSite cannot be expected to solve all of the many complex and long-standing problems associated with addiction, disease, mental illness, homelessness and poverty, characteristic of many urban settings today, as part of a larger strategy to address these problems, evidence shows that medically supervised injecting facilities can play an important role.

DR. JULIO MONTANER



Past President, IAS and **Director, BC Centre for Excellence in HIV/AIDS**

> "We must ensure that treatment is secured for the full protection of those most vulnerable to HIV/AIDS."
>
> — **Julio Montaner**, Director of the BC-CfE

Since 1987, Dr. Julio Montaner has been making a difference in the lives of people living with HIV and AIDS. Born in Argentina, Dr. Montaner knew at a very early age he wanted to be a doctor – just like his father. He arrived at St. Paul's Hospital in 1981 on a UBC fellowship. He completed his training in Internal Medicine and Respiratory Medicine at UBC and was St. Paul's chief resident. In 1988, he took the position of Director of AIDS Research. In the mid-1990's, working with other researchers at the BC-CfE, Dr. Montaner played a key role in the discovery of a drug cocktail, since known as highly active antiretroviral therapy (HAART), which reduces the amount of HIV in an infected individual's bloodstream to undetectable levels, and restores immune function.

Dr. Montaner has pioneered new salvage therapy strategies for patients harbouring multiply drug-resistant HIV infection. In the early 2000's, Dr. Montaner began exploring the idea of Treatment as Prevention. The idea was to expand the use of HAART to decrease AIDS-related morbidity and mortality and to decrease HIV incidence and prevalence.

Since 2005, as Director of the BC-CfE, Dr. Montaner leads the BC-CfE's efforts to translate research advances into clinical practice. In 2006, he introduced the pioneering Treatment as Prevention concept to the International AIDS Society (IAS) conference in Toronto. He served the IAS as President-Elect, President, and Past-President from 2006–2011, a fitting recognition of Dr. Montaner's ongoing leadership and strong commitment to the international fight against HIV and AIDS.

China adopts BC-CfEs Treatment as Prevention strategy.

Among other international accomplishments, Dr. Montaner was instrumental in working with China to implement B.C.'s Treatment as Prevention strategy in their fight against HIV/AIDS. In 2007, he was appointed Head of the newly established Division of AIDS at the University of British Columbia Department of Medicine, the first such initiative in Canada, and only one of three in North America. His peer-reviewed research papers dealing with HIV/AIDS have been published extensively.

Dr. Julio Montaner is interviewed by the host of CBC's George Stroumboulopoulos Tonight.

"AIDS is a challenge of tremendous magnitude," says Dr. Montaner. "I take a great deal of comfort when I look at the monumental advances that we have brought to the field over the last 25 years. However, HIV is a powerful enemy and the battle is only just started. We must redouble our efforts to ensure that the benefits of our research reach all of those in need here and abroad, including the developing nations where the toll is so much higher."

> The role of antiretroviral treatment in stopping new infections and how it can be effectively used as part of combination HIV prevention approaches must be further explored, as shown by Dr Julio Montaner, President of the International AIDS Society.

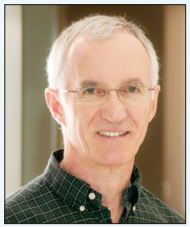
— **Michel Sidibe**, Executive Director, UNAIDS

CORE PROGRAMS

CLINICAL RESEARCH PROGRAM

The clinical program is responsible for cutting-edge research that focuses on the treatment of individuals infected with HIV that has become resistant to therapeutic drugs and pharmacokinetics of antiretrovirals. It optimizes adherence to antiretroviral therapy regimens, recognition and management of drug toxicities, management of viral co-infections and primary care initiatives.

DR. JULIO MONTANER
Director, BC-CfE



DR. PETER PHILLIPS
Medical Director,
IO-C AIDS Ward

DR. MARIANNE HARRIS
Clinical Research Advisor

New and investigational agents that hold promise in the treatment of individuals with multi-drug resistant HIV continue to emerge. In 2005, the clinical group pioneered the use of a novel gas-powered injection system for the subcutaneous administration of an antiretroviral drug, which substantially improved a person's tolerance to the medication.

The clinical group actively participates in large international trials focusing on a number of investigational drugs for use in treatment-experienced individuals. The clinical team continues to work in concert with the research laboratory to study the complex issues of pharmacokinetic interactions among antiretroviral drugs.

The clinical research team works with other countries including Argentina, Mexico, Kenya, and Uganda. There is active collaboration with UNAIDS and the World Health Organization (WHO) to develop antiretroviral guidelines for people who use injection drugs in Eastern European countries and South East Asia, as well as their HIV Drug Resistance Network.

RESEARCH LABORATORY

The BC-CfE's laboratory program has developed as a leading force in Canada, and also as a department with considerable international influence in the factors affecting response to antiretroviral therapy. The research laboratory continues to investigate the clinical implications and predictors of HIV drug resistance, both at the BC-CfE and as part of international collaborations. It provides clinical services to the province of B.C. in the areas of HIV drug resistance testing and pharmacokinetic measurement. In addition to providing HIV drug resistance testing as a clinical service to most of Canada and investigator-driven trials, the research laboratory has also received peer-reviewed funding for several studies it is conducting. Novel testing applications in the laboratory continue to provide testing support for Phase III clinical trials for the pharmaceutical industry.

While an HIV particle is only 0.0001mm in size, the implication of every genetic discovery about the virus is globally significant. The BC-CfE's research laboratory continues to push forward our understanding of exactly how the virus operates and how the human body responds. Every new bit of knowledge uncovered brings the BC-CfE a step closer to ending the epidemic.

DR. P. RICHARD HARRIGAN
Director, Research Laboratory

EPIDEMIOLOGY PROGRAM

The epidemiology program emerged early in the BC-CfE's history with the goal of monitoring the HIV epidemic among selected vulnerable populations in B.C. Early work focused on tracking HIV infection among gay men and injection drug users. BC-CfE researchers have also identified risks for HIV infection and monitor access and outcomes from HIV treatment. This work has been supported through peer-reviewed grants from a variety of funders.

Through the epidemiology program, the BC-CfE leads several studies, including the Longitudinal Investigations into Supportive and Ancillary (LISA), the Canadian Observational Cohort (CANOC), HAART Observational Medical Evaluation and Research (HOMER) and the Momentum Health Study.

DR. ROBERT HOGG
Director, Epidemiology & Population Health Program

DR. VIVIANE DIAS LIMA
Senior Statistician

DRUG TREATMENT PROGRAM

The drug treatment program (DTP) has a provincial mandate to distribute anti-HIV drugs based on guidelines generated by the Committee on Drug Evaluation and Therapy. The committee comprises physicians, pharmacists, virologists, health service researchers, economists and community representatives. The BC HIV/AIDS Therapeutic Guidelines are a consensus of the Committee. This document represents the Committee's interpretation of current standards of treatment of HIV/AIDS and related conditions, and is reviewed quarterly. Significant revisions to the Guidelines are mailed to physicians throughout the province.

Information about all individuals receiving antiretrovirals in B.C. through the DTP are entered into a database. This database provides data for clinical and virological outcome studies. These studies form the basis of further revisions to the Guidelines. The Drug Treatment Program database acts as a registry of HIV-treating physicians in the province. The BC-CfE has also acted as an "early warning system" to alert government of the trajectory of the disease.

The BC-CfE generates Drug Treatment Program statistical reports monthly and annually, providing a snapshot of the total number of HIV patients in the province and a listing of their various combination therapies. These reports, as well as the BC-CfE HIV/AIDS Therapeutic Guidelines, are updated regularly and made available via the BC-CfE's website, **www.cfenet.ubc.ca**.

INTERNATIONAL INITIATIVE

The objective of the BC-CfE International HIV/AIDS Research Initiative is to introduce research scientists and students to research opportunities internationally and to enhance the development of HIV research capacity among our partners in low- and middle-income countries. The Initiative provides co-ordination and support for planning and carrying out diversified research activities that reflect the mandate of the BC-CfE.

The BC-CfE carries out HIV/AIDS research activities in Argentina, Brazil, South Africa, Thailand and Uganda.

DR. DAVID MOORE
Research Scientist

CORE PROGRAMS CONTINUED

URBAN HEALTH RESEARCH INITIATIVE

The BC-CfE's Urban Health Research Initiative (UHRI) was established in 2007. UHRI is based on a network of studies that have been developed to help identify and understand the many factors that affect the health of urban populations, with a focus on substance use, infectious diseases, the urban environment and homelessness. UHRI's research focuses on issues that affect the health of urban populations today, with special emphasis on infectious diseases such as HIV and hepatitis C, substance abuse and addiction, access to health care and social services, and policy that has a direct bearing on public health, well-being and safety. More recently, BC-CfE researchers have led various health service evaluations, including the scientific evaluation of Vancouver's Supervised Injection Facility - Insite. Vancouver Injection Drug Users Study (VIDUS), Scientific Evaluation of Supervised Injecting facilities (SEOSI), AIDS Care Cohort to Evaluate Access to Survival Services (ACCESS) and At Risk Youth Study (ARYS) are some of the currently active cohorts.

DR. THOMAS KERR
Co-Director

DR. EVAN WOOD
Co-Director

Dr. Wood also co-founded Stop the Violence BC, a coalition concerned about the links between cannabis prohibition in B.C. and the growth of organized crime.

EDUCATIONAL PROGRAM

Owing to the complexity of HIV care, the BC-CfE has developed programs to educate and train health care professionals in the treatment and care of people living with HIV. This education and training is essential to improving the quality of HIV treatment and care across the province.

The BC-CfE provides HIV/AIDS education and training to health care professionals from British Columbia and from other parts of Canada and abroad. The BC-CfE develops and delivers undergraduate and postgraduate programs in collaboration with the University of British Columbia (UBC).

A preceptorship program was also created and is delivered by the BC-CfE, allowing family doctors living outside of Vancouver to learn about HIV/AIDS care by working at the John Ruedy Immunodeficiency Clinic (IDC). The BC-CfE serves as an HIV resource centre for health care organizations and professionals.

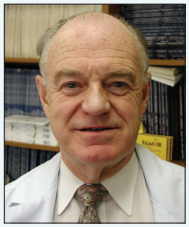
DR. ROLANDO BARRIOS
Assistant Director

DR. SILVIA GUILLEMI
Director of Clinical Education and Clinical Coordinator, IDC

THERAPEUTIC GUIDELINES

The committee on Drug Evaluation and Therapy is a multidisciplinary team of physicians, pharmacists, community representatives, ethicists and pharmaco-economists who meet monthly to review emerging scientific data regarding antiretroviral therapy and treatment strategies. Since its inception in 1992, the committee has published Therapeutic Guidelines that are intended to assist HIV-treating physicians in the optimal care of their patients. The Guidelines, which are reviewed biannually, were originally mailed out regularly to physicians, however, are now posted on the BC-CfE website.

The Guidelines provide recommendations or the best practices for treating HIV disease. These Therapeutic Guidelines are the basis of treatment strategies, the results of which are constantly monitored by studying clinical and virological outcomes of all treated HIV patients in the province. These outcome studies contribute to the findings, which then generate further revisions to the Guidelines. As HAART expansion develops, the committee will be in a unique position to monitor and react to changes in HIV disease burden and make changes to the Therapeutic Guidelines as needed.



DR. ALASTAIR MCLEOD
Co-chair of the Therapeutic Guidelines Committee

DR. VAL MONTESSORI
Clinical Associate Professor Infectious Diseases, UBC

GENDER AND SEXUAL HEALTH INITIATIVE

A newly launched initiative of the BC-CfE, Gender and Sexual Health Initiative (GSHI), highlights the critical need to address issues of gender and sexual health in the response to HIV. Globally, HIV is the leading cause of mortality among women of reproductive age. The GSHI brings together research collaborations to evaluate the intersecting interpersonal, social, physical and policy environments shaping sexual health, HIV/STIs and access to care among marginalized women and sex workers both locally and internationally. The initiative bridges public health, policy, social epidemiology, and qualitative research and aims to move forward evidence-based and gender-focused HIV prevention, treatment and care. BC-CfE researchers are currently working on a number of women, sexual health and HIV/STI research and evaluation projects, including An Evaluation of Sex Workers' Health Access (AESHA).

DR. KATE SHANNON
Director, Gender and Sexual Health Initiative

ADMINISTRATION AND OPERATIONS

The overall role of BC-CfE's administration and operations is to manage the day-to day operations, strategic planning and analysis, community partnering development, financial management and fundraising. The BC-CfE's administration and operations department consists of a director, senior accountant, information technology support, communications and administrative support. The director's role also includes liaising with Provincial Government, negotiating Pharmacare budget with MoH, consulting and liaising with community leaders and health authorities, delivering effective communication strategies, overseeing contractual agreements, negotiating staff salaries, managing human resource activities and payroll/personnel development.

IRENE DAY
Director of Operations

MILESTONES

1986:

- The John Ruedy Immunodeficiency Clinic opens at St. Paul's Hospital as a specialty clinic for HIV-infected individuals.

1992:

- The provincial government announces the creation and funding for the BC Centre for Excellence in HIV/AIDS (BC-CfE), a provincial HIV/AIDS agency.
- The BC-CfE develops province-wide HIV/AIDS Therapeutic Guidelines.

1994:

- The BC-CfE, with input from Oak Tree Clinic and Vancouver Coastal Health, collaborates with the University of British Columbia (UBC) to develop an HIV/AIDS-dedicated nursing university elective.
- The BC-CfE pioneers use of the quantitative Polymerase Chain Reaction (PCR) assay to measure HIV viral load as a primary outcome measure in clinical trials.

1996:

- Confirmatory evidence presented by U.S.-based investigators using an alternative HAART regimen at the landmark Vancouver 1996 International AIDS Society (IAS) conference, organized by Drs. Montaner, O'Shaughnessy, Rekart and Schechter. This leads to the immediate introduction of the "drug cocktail" as a novel therapeutic strategy for HIV by the BC-CfE.

Vancouver 1996 "One World One Hope"

- The BC-CfE introduces viral load testing for monitoring HIV disease progression and response to antiretroviral therapy.
- In a publicly funded plan, B.C. becomes the first Canadian province to adopt triple drug therapy for all eligible individuals.
- The BC-CfE initiates investigation into a large HIV outbreak in Vancouver's Downtown Eastside (DTES) which later becomes the Vancouver Injecting Drug Users Study (VIDUS).

1997:

- BC-CfE research findings reveal an explosive outbreak of HIV and hepatitis C among people who use injection drugs in Vancouver's Downtown Eastside.
- The BC-CfE develops Multiple Drug Rescue Therapy for HIV-infected individuals failing conventional therapies.
- The BC-CfE makes a coherent argument for an expansion of addiction treatment services in the Downtown Eastside under the banner of "needle exchange is not enough."

1998:

- The BC-CfE is the first jurisdiction to introduce routine HIV drug resistance testing into clinical practice.

1999:

- The BC-CfE's research laboratory is accredited by the College of American Pathologists/CLIA and the BC Diagnostic Accreditation Program.

2000:

- The BC-CfE uses the first application of therapeutic drug monitoring of antiretroviral drugs for management of HIV infection in Canada.

2001:

- The BC-CfE's research laboratory produces techniques to measure the amount and impact of different levels of adherence to HIV therapies.
- The BC-CfE is awarded the contract to evaluate North America's first supervised injection facility – Insite.
- The BC-CfE initiates a large cohort study of street-involved youth to examine their health-related needs.

2002:

- B.C. is the first jurisdiction in Canada to implement routine therapeutic drug level monitoring of antiretroviral medications for patients who require it.

2003:

- The John Ruedy Immunodeficiency Clinic (IDC) reopens as a primary and specialty clinic for HIV-infected individuals and implementation of the therapeutic drug monitoring program.
- The BC-CfE demonstrates the negative impact of some antiretrovirals on mitochondria, the energy-generating components of cells.

2004:

- The BC-CfE develops an agreement to provide the Dr. Peter Centre with physician consultation (weekly rounds, enrolment of orphan patients to the IDC and on-call services) for their residents.
- The BC-CfE pioneers use of a needle-free injection system for enfuvirtide.
- The IDC opens its HIV/hepatitis C co-infection clinic.
- The IDC implements the Anal Dysplasia Clinic with support from the BC Cancer Agency.
- The BC-CfE introduces the HIV preceptorship program, in partnership with Vancouver Coastal Health, which allows physicians to learn about HIV/AIDS care by working at the IDC.
- The BC-CfE hosts its first semi-annual Antiretroviral Update.

2005:

- The BC-CfE's research lab demonstrates the effect of variations in human and virus genetics on response to HAART treatments.
- The IDC introduces the HIV/Addictions program, offering addictions counseling and support.
- The IDC introduces the HIV/Renal clinic and database.
- The BC-CfE submits Health Canada "Special Access Program" application to provide two investigational HIV drugs to six patients resistant to all other therapies. Health Canada denies the BC-CfE access and the BC-CfE publicly campaigns for access. Health Canada reverses its decision and the BC-CfE is first to prescribe the combination of TMC114 (darunavir) and TMC125 (etravirine) together to the remaining five patients.

2006:

- Dr. Montaner is named IAS President-Elect, and introduces the Treatment as Prevention concept at the Toronto IAS conference.
- Landmark paper by the BC-CfE arguing for HAART expansion via Treatment as Prevention is published in *The Lancet* called "The case for expanding access to highly active antiretroviral therapy to curb the growth of the HIV epidemic".
- The first IDC assessment shows a decrease in hospital admissions.
- The IDC introduces the post-exposure prophylaxis clinic to provide support to patients requiring more extensive counseling and/or support and for patients without a source of primary care.
- Special issue of the International Journal of Drug Policy is published, guest-edited by BC-CfE researchers and focusing on the Downtown Eastside's health and illicit drugs situation.

2007:

- The BC-CfE introduces Human Leukocyte Antigen (HLA) testing, a human genetic test to avert potentially life-threatening hypersensitivity reactions to abacavir, an antiretroviral agent.
- The BC-CfE's research lab introduces widespread human pharmacogenetic testing for treatment side effects into routine clinical practice.
- The BC-CfE initiates a large cohort study of HIV-positive people who use injection drugs (IDUs) in the Downtown Eastside aimed at addressing barriers to HIV treatment among IDUs.
- The first Canadian Division of AIDS is established within the Department of Medicine at UBC, headed by Dr. Montaner and based at the BC-CfE.

THE WALL STREET JOURNAL.

AUGUST 5 2008

Clinton Urges More AIDS Efforts

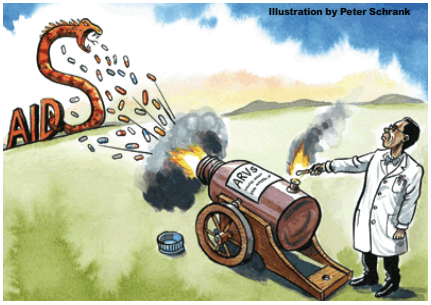
By MARILYN CHASE

MEXICO CITY-- Fonner U.S. President Bill Clinton, fresh from a tour of his foundation's projects in Africa, took the stage of the International AIDS Conference here to tell thousands that "we must do more."
"AIDS is a big dragon," Mr. Clinton said Monday, but unlike the mythical dragon slain by St. George, "this dragon must be slain by millions and soldiers."

Bill Clinton

Until there is a vaccine, Mr. Clinton said, studies show that suppressing blood levels of HIV with potent antivirals can help block the disease's transmission. The Chair of AIDS Research at the University of British Columbia, Julio Montaner, who is the incoming president of the International AIDS Society that sponsors this conference, is a leading champion of using drugs as preventatives.

2008:



AIDS Nov 27th 2008, The Economist
Deploying the drugs used to treat AIDS may be the way to limit its spread

- Dr. Montaner appointed president of the International AIDS Society in Mexico City for the term of 2008-2010 and presents update on Treatment as Prevention strategy during the conference.

The XVIII International AIDS Society meeting

Waltzing with death

VIENNA

AIDS still kills 2m people a year. But the rate of new infections is falling and it is possible to imagine bringing the disease under control

the rate of new infections. Dr Montaner's study, published in the *Lancet*, was the strongest confirmation yet that treatment and prevention are two sides of the same coin. The study showed that the annual rate of infection in 1996—the year when the modern regime of highly active antiretroviral therapy (HAART) was introduced—had, by 2009, fallen by 52%. During that period the number of people on treatment rose by 547%.

2009:

- WHO publishes an article in The Lancet that supports the BC-CfE's call for universal voluntary HIV testing with immediate antiretroviral therapy as a strategy for elimination of HIV transmission.
- The International AIDS Society second annual global summit, a ground-breaking event of international significance, is hosted by the BC-CfE and partner organizations.
- Premier Gordon Campbell announces a commitment to a pilot project that will expand access to HIV and AIDS drugs to the street-involved populations in downtown Prince George and Vancouver's Downtown Eastside.
- The BC-CfE releases the *Drug Situation in Vancouver* report. This report compiled more than 10 years of prospective data on drug use trends, drug availablility, HIV rates and mortality rates among people who use drugs in the Vancouver area.

2010:

- The B.C. Minister of Health, Kevin Falcon, announces a four-year, $48-million Treatment as Prevention pilot called Seek and Treat for Optimal Prevention of HIV/AIDS (STOP HIV/AIDS) in Vancouver's Downtown Eastside and Prince George.
- The BC-CfE launches the International Centre for Science in Drug Policy (ICSDP) to conduct research on illicit drug policy issues. The ICSDP is an international network of scientists, academics and health practitioners committed to improving the health and safety of communities and individuals affected by illicit drugs.

Few could have imagined that we'd be talking about the real possibility of an AIDS-free generation. But that's what we're talking about ... make no mistake, we are going to win this fight.

President Obama,
World AIDS Day, December 1, 2011

- The ICSDP releases its first comprehensive research report *Effect of Drug Law Enforcement on Drug-Related Violence: Evidence from a Scientific Review.*
- The BC-CfE and the ICSDP partner with the International AIDS Society to launch the Vienna Declaration, the official declaration of AIDS 2010. The Vienna Declaration calls upon governments around the world to implement and evaluate a science-based public health approach to address harms stemming from illicit drug use.
- Dr. Montaner presides as IAS President over 19,100 delegates from around the world at the XVIII International AIDS Conference (AIDS 2010) in Vienna.
- The lifesaving concept of "Treatment as Prevention" – developed at the BC-CfE – provides the building blocks for a radical new approach by UNAIDS to HIV treatment, dubbed "Treatment 2.0." A BC-CfE study, published in *The Lancet* and released at AIDS 2010 in Vienna, shows that the introduction of HAART for HIV patients has halved the number of new HIV diagnoses in B.C. since 1996. UNAIDS cites the study findings as evidence supporting their push for Treatment 2.0.

2011:

- China announces the implementation of Treatment as Prevention , based on the B.C. model, as the cornerstone in its fight against HIV/AIDS.
- The Supreme Court of Canada rules unanimously that the doors to Vancouver's supervised injection site, Insite, will remain open.
- U.S. Secretary of State Hilary Clinton endorses Treatment as Prevention. U.S. President Barack Obama endorses the strategy one month later.
- Under the STOP HIV/AIDS pilot project, Vancouver Coastal Health and Providence Health Care launch a social media campaign called "It's Different Now" to assist in normalizing HIV testing.
- *Science* names Treatment as Prevention as the "scientific breakthrough of the year" for 2011, *Time* names it the number three scientific breakthrough of the year and *Reader's Digest* calls it a medical breakthrough for 2012.

AIDS June 4th 2011, The Economist

"Julio Montaner, a prominent advocate of the strategy at the University of British Columbia, Vancouver, in Canada says HPTN 052 has persuaded leaders such as U.S. President Barack Obama—whose administration recently announced a policy goal of creating "an AIDS-free generation"—to take action. 'Clinicians and policymakers are always asking for the ultimate evidence,' Montaner says. 'HPTN 052 was the unequivocal piece of the puzzle to close any doubts.' "

A COLLABORATIVE APPROACH

THE BC-CFE UNDERSTANDS THE IMPORTANCE OF DEVELOPING COLLABORATIVE PARTNERSHIPS AND ALLIANCES TO ACHIEVE COMMON, FOCUSED, ATTAINABLE GOALS. THE BC-CFE FIRMLY BELIEVES THAT ENGAGING IN AN OPEN DIALOGUE WITH ALL PARTNERS WILL INCREASE THEIR COLLECTIVE CHANCES TO SIGNIFICANTLY REDUCE THE TRANSMISSION OF HIV/AIDS.

The BC-CfE works with a number of partners to improve the lives of people living with HIV. The Virology Laboratory Services and the Outreach Pharmacy at Providence Health Care provides routine and specialized diagnostic services, and distributes antiretrovirals throughout the province, respectively. To better meet the needs of individuals living with HIV, the BC-CfE also works with a number of offsite pharmacies that have been established in Victoria, Nanaimo and Kelowna, and at specialty sites.

In June 2007, "The Halls of Healthy," an artwork by Vancouver artist, Tiko Kerr, was dedicated in gratitude to the BC Centre for Excellence in HIV/AIDS and St. Paul's Hospital. From left to right: Tiko Kerr, Dianne Doyle, Paul Leward, Father Michael Forshaw, Dr. Julio Montaner and Denise Becker.

St. Paul's Hospital pharmacy, contracted by the BC-CfE, maintains a 24-hour, toll-free phone line for patients and health-care providers in B.C. and the Yukon. Pharmacists provide information on a wide variety of topics, all related to the HIV program and antiretroviral medications.

In 2005, St. Paul's Hospital assumed partial funding and operational responsibilities for the John Ruedy Immunodeficiency Clinic. The BC-CfE provides a significant subsidy to cover a range of staff costs and management of the clinics HIV primary care database, the therapeutic drug monitoring program, the anal dysplasia clinic, other specialty clinics, all of the clinical research activities and the educational events for clinic staff.

BC-CfE works closely with the inpatient HIV Ward (10-C) at St. Paul's Hospital. This specialized unit provides a multidisciplinary service, with linkages to various other care facilities and support groups in the community. The BC-CfE specialists provide consultative services to the inpatient ward. The BC-CfE supports the unit's unique database for clinical evaluation and research purposes.

A priority for the BC-CfE is the development of existing and new relationships within the public and private sectors, with governmental and non-governmental organizations, and with individuals that have expressed an interest in working together to reduce the transmission of HIV/AIDS. Currently, the BC-CfE is working with B.C. Health Authorities, UBC Department of Medicine, the BC Centre for Disease Control, the Dr. Peter Centre, BC Cancer Agency, BC Women's and Children's Hospital, and a range of AIDS activists and community organizations within the province and across the country.

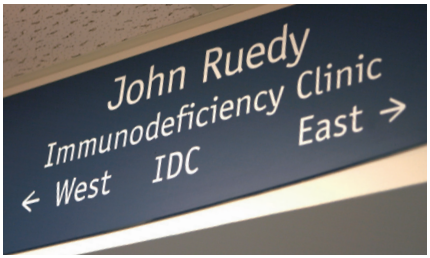
HIV/AIDS IN CANADA

65,000 people with HIV/AIDS

$250,000 – $750,000 in treatment costs per person

$42 billion for nation-wide treatment

Growing prevalence of HIV/AIDS in Canada despite the success of Treatment as Prevention in British Columbia



The New York Times

Health

British Columbia: Aggressive Strategy Lowers the Number of New H.I.V. Cases and AIDS Deaths

By DONALD G. McNEIL Jr.
Published: January 2, 2012

New H.I.V. cases and AIDS deaths are both going steadily down in British Columbia, according to data released last week.

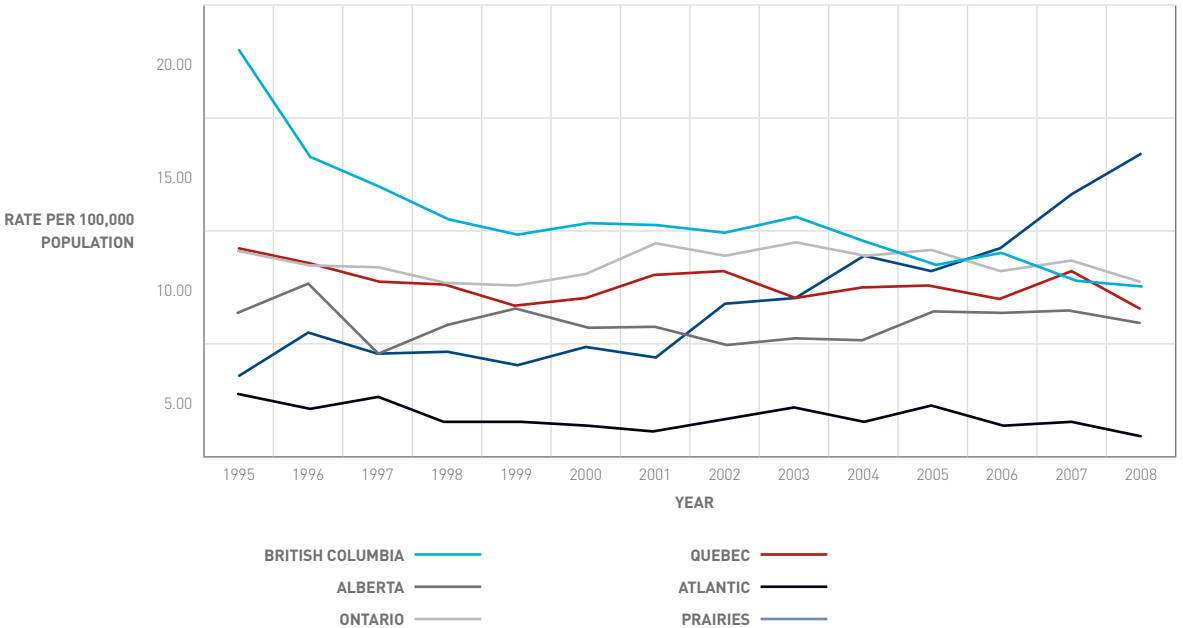
"We're particularly pleased to see that our treatment-as-prevention strategy has taken off big-time," said Dr. Julio S. G. Montaner, director of the British Columbia Center for Excellence in H.I.V./ AIDS. His center was a pioneer in the strategy, which involves searching aggressively for people at risk of H.I.V. infection, talking them into being tested and putting those who are infected on antiretroviral drugs immediately, which lowers by 96 percent the chances that they will infect,

LEADING THE WAY WITH TREATMENT AS PREVENTION

EXPANDING HIGHLY ACTIVE ANTIRETROVIRAL THERAPY (HAART)

HAART CANNOT CURE HIV OR AIDS; HOWEVER, IT DOES PUT THE DISEASE IN REMISSION. THE BC-CFE HAS PROVIDED STRONG EVIDENCE THAT HAART USE DRAMATICALLY DECREASES TRANSMISSION OF HIV.

In brief, HAART significantly reduces HIV transmission because it rapidly and effectively renders HIV undetectable in blood and genital secretions, rendering those fluids less infectious. Accordingly, HAART prevents the emergence of AIDS-related diseases and death among those infected with HIV and separately, it decreases HIV transmission from HIV-infected individuals to their contacts. Since implementing the Treatment as Prevention strategy, *B.C. is the only province in Canada to consistently demonstrate a decline in new HIV cases.* China, San Francisco, New York City, Washington, D.C. and Swaziland have since implemented a similiar strategy in their own fights against HIV and AIDS.



With support for the Treatment as Prevention strategy from the government of B.C. and the Ministry of Health, and under the leadership of the BC-CfE, a pilot program was launched to enhance access to HIV coverage among hard-to-reach HIV-infected individuals in Vancouver's Downtown Eastside and Prince George. This pilot project is called "Seek and Treat for Optimal Prevention of HIV/AIDS", which gives rise to the acronym: STOP HIV/AIDS.

This effort specifically addresses the most vulnerable among those infected with HIV, including the homeless, the poor, the mentally ill and people who use injection drugs. The pilot project aims to decrease AIDS-related diseases and death among those already infected with HIV and to decrease the emergence of new HIV infections. The BC-CfE is using this pilot project as a platform to fully characterize the benefits associated with the expansion of HAART to hard-to-reach populations and to show the world how this can be done.

The pilot project is partially subsidized with financial support from the Minsitry of Health, national funding agencies (i.e. Canadian Institutes of Health Research [CIHR]), international funding agencies (i.e. National Institutes of Health [NIH]), the pharmaceutical industry, and private donors. Discussions continue regarding potential collaborations with other international organizations. International partners have expressed a particular interest in the work, particularly regarding the potential for knowledge translation to the developing world. This will facilitate the dissemination of a truly made-in-B.C. best practices around the world – an important priority of the pilot.

BC-CfE is intensifying expanded HAART access in the two pilot areas with the expectation of expanding it throughout the province. The BC-CfE is collaborating with the Northern Health Authority, Vancouver Coastal Health Authority, Provincial Health Services Authority, Providence Health Care, the Community, Aboriginal people and the Ministry of Health.

Over one half of the HIV-infected individuals in B.C. who are clinically eligible and not on HAART are known to the BC-CfE through various externally funded long-term epidemiological studies already initiated by the BC-CfE. These include the Vancouver Injection Drug Users Study (VIDUS), the At Risk Youth Study (ARYS), the AIDS Care Cohort to Evaluate Access to Survival Services (ACCESS), and the Scientific Evaluation of Supervised Injecting (SEOSI) cohorts. The BC-CfE will aim to engage these highly vulnerable and hard-to-reach individuals in supportive clinical research protocols aimed at identifying effective means to promote a more stable lifestyle, which in turn may afford these individuals an opportunity to engage in assisted HAART programs on a voluntary basis.

THE GLOBAL PANDEMIC

People living with HIV/AIDS:	**33.4 million**
Women living with HIV/AIDS:	**15.9 million**
Children (under 15) living with HIV/AIDS:	**2.5 million**
People newly infected with HIV/AIDS in 2008:	**2.7 million**
AIDS-related deaths (adults & children):	**1.8 million**
AIDS orphans in sub-Saharan Africa:	**16.6 million**
People newly infected with HIV every day:	**7,100**

Source: UNAIDS Report on the Global AIDS Epidemic 2010

The outreach and support activities targeting marginalized groups in our society in the pilot go far beyond the exclusive provision of HAART to HIV-infected individuals.

Therefore, these programs are expected to generate significant public health and social welfare benefits. In addition, the short- and long-term gains and lessons that will be derived from the pilot project are expected to be of great interest provincially, nationally and internationally.

SUSTAINABILITY

The BC-CfE receives annual core funding of $3.05 million from the Provincial Health Services Authority. While the BC-CfE has grown from 24 staff at its inception to more than 100 staff members today, and has dramatically increased its workload and output since 1992, the core provincial funding has not changed since that time. As a result, the BC-CfE supplements its core funding through research grants, endowments and private fundraising initiatives.

The Ministry of Health's Pharmacare program directly funds the BC-CfE's Drug Treatment Program, separate from the BC-CfE's core funding allotment. Funding for this program is renegotiated every three years.

Currently, less than 10 per cent of Pharmacare funding for the Drug Treatment Program covers administrative costs to run the program, with the remainder spent on the cost of purchasing therapeutic drugs.

Over the past five years, the Drug Treatment Program has grown 12 per cent annually, largely as a result of new patients being identified through expanded outreach programs, and to a lesser extent, due to increased cost of drugs, especially newer agents. The British Columbia government spends more than $90 million annually on anti-HIV medications, and there is every indication that the Drug Treatment Program will continue to expand in size and cost.

Private fundraising efforts by BC-CfE personnel have resulted in the creation of four endowments at St. Paul's Hospital Foundation/University of British Columbia, including:

- Chair in AIDS Research
- Michael O'Shaughnessy Professorship in HIV/AIDS Health Outcomes and Population Health
- Glen Hillson Professorship in Clinical Virology
- Chair in Leading Edge Endowment Funding (LEEF) in Addiction Medicine

However, these endowments generate only a fraction of the actual salary and benefits required to retain a senior faculty member, which creates a serious sustainability challenge, while at the same time detracting from the BC-CfE's ability to conduct external recruitment in a highly competitive environment.

HIV/AIDS remains a devastating diagnosis and disease. For people living with HIV, 100 per cent adherence to medications that often come with side effects is the only way to stay alive. And for those who have lived with the disease for a long time, even 100 per cent adherence provides no guarantee of health and survival.

To continue the work of saving the lives of people in British Columbia affected by HIV, and ensuring Canadian research can be used internationally to improve the lives of millions of people affected by the disease globally, the BC-CfE welcomes support from individuals, community organizations, foundations and others, to help fulfill its vision and mandate.

To learn more about the BC Centre for Excellence in HIV/AIDS, or to make a contribution, contact Irene Day, Director of Operations at 604-806-8202.

THE STAFF OF BC CENTRE FOR EXCELLENCE IN HIV/AIDS

> We find ourselves at a critical juncture.
>
> Over the past three decades, we have collectively accumulated a tremendous amount of knowledge regarding what needs to be done to effectively combat HIV at the individual and societal levels. Now we must work diligently to overcome the ever-growing implementation gap.
>
> The road ahead is clear. We have the tools to effectively control the pandemic. Together we can stop HIV and AIDS.
>
> — **Julio Montaner**, Director of the BC-CfE


St Paul's Hospital

> “Dr. Julio Montaner and the BC Centre for Excellence in HIV/AIDS reached out to me and others like me at a time when no one else would. Most of us would not be alive today without their visionary leadership in the treatment and prevention of this disease.”
>
> — **Tiko Kerr,** visual artist

Kerr presented the artwork, *Lifesaver*, to Dr. Julio Montaner and the BC Centre for Excellence in HIV/AIDS as a gesture of thanks.

BRITISH COLUMBIA
CENTRE *for* EXCELLENCE
in HIV/AIDS

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