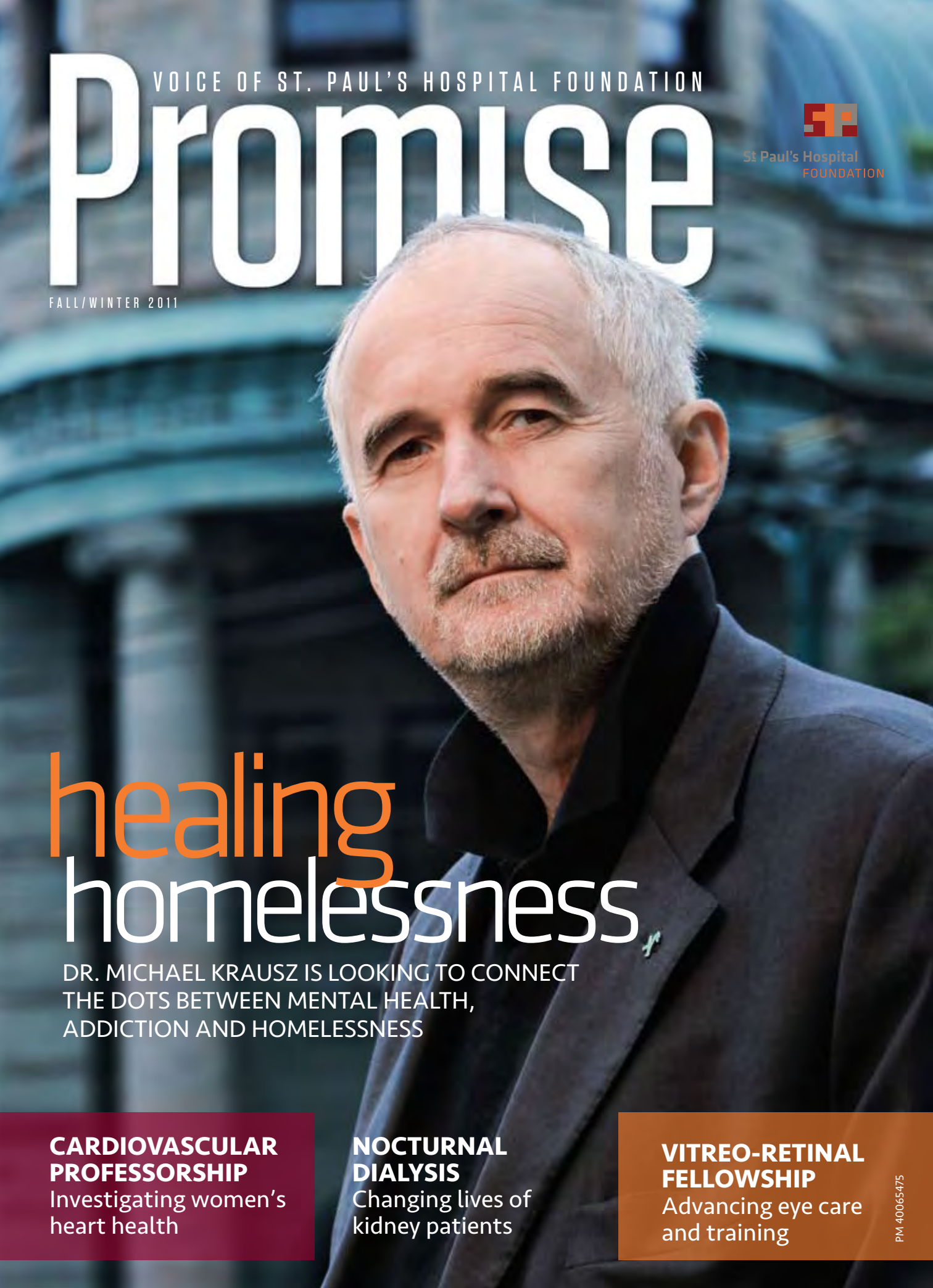
VOICE OF ST. PAUL'S HOSPITAL FOUNDATION

Promise

St Paul's Hospital FOUNDATION

FALL/WINTER 2011



healing homelessness

DR. MICHAEL KRAUSZ IS LOOKING TO CONNECT THE DOTS BETWEEN MENTAL HEALTH, ADDICTION AND HOMELESSNESS

CARDIOVASCULAR PROFESSORSHIP
Investigating women's heart health

NOCTURNAL DIALYSIS
Changing lives of kidney patients

VITREO-RETINAL FELLOWSHIP
Advancing eye care and training

PM 40065475

Inspired by Innovation

At the inaugural St. Paul's Supper Club (page 6), I felt truly inspired after meeting with some of St. Paul's brightest physicians and researchers and learning more about the world-leading patient care, research and teaching taking place at our hospital.

My hope is that you feel similarly inspired after reading this issue of *Promise*. In addition to featuring a fresh look for the magazine, this issue also highlights a number of innovative projects with the potential to have a dramatic impact on how patients are treated.

On page 18, we investigate the challenges faced by people with mental health and addictions issues and how those findings could lead to positive change for residents of Vancouver's Downtown Eastside.

On page 8, we look at the province's first in-centre nocturnal dialysis program – a pilot project that could dramatically improve the quality of life and treatment for patients unable to dialyze at home.

On page 21, we see how the "Treatment as Prevention" strategy, pioneered by our BC Centre for Excellence in HIV/AIDS, is turning the tide against the pandemic throughout the province and now in China.

The tradition of innovation highlighted in this issue of *Promise* would not be possible without our donors, supporters and partners. Your support is just as inspirational as the work produced by the people of St. Paul's. Thank you all.

Henry F. Man
Chair, St. Paul's Hospital Foundation
President & CEO, Magellen Developments (20/20) Inc.

In Times of Need

In June, we witnessed the terrible events that followed the Stanley Cup final in Vancouver. However, while the Stanley Cup riot offered the worst that some people had to offer, it also demonstrated the best from many others.

I was incredibly proud to see how the people of St. Paul's Hospital stepped up to serve the people of Vancouver during one of our city's darkest moments. Personnel at the Teck Emergency Centre at St. Paul's banded together on possibly the busiest evening ever experienced by an emergency department in B.C. and provided 147 patients with much-needed care, despite the chaos erupting on the streets around them (page 4).

In the weeks that followed, I was equally proud to see the community rally behind St. Paul's role as an important provincial resource that must be renewed to meet the needs of British Columbians for decades to come.

The support of the community has long been a key to helping St. Paul's Hospital shine. Throughout our history, we've seen what a dedicated group of people can accomplish together, from making our Lights of Hope campaign an annual holiday tradition (page 6) to funding the renovation of the Teck Emergency Centre that served the people of Vancouver so well on June 15.

These initiatives, and the many others taking place at St. Paul's Hospital, would not be possible without thousands of donors and our world-leading physicians, researchers and staff uniting to make a difference. Thank you for the commitment you have shown to everyone in B.C. we support.

Stephen Shapiro
President & CEO
St. Paul's Hospital Foundation

P.S. For the latest news about St. Paul's Hospital, follow us! *@stpaulsfdn* St. Paul's Hospital Foundation Page

Photos: Brian Smith

promise

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Inspired care.

ST. PAUL'S HOSPITAL
PROVIDENCE HEALTH CARE

Photos: RS PRODUCTIONS (cover), iStockphoto (top), Brian Smith

COVER

FEATURES

DEPARTMENTS

(Left to right) David Brown, operations leader; Miriam Stewart, program director; Dr. Eric Grafstein, head of emergency services for Providence Health Care.

CALL OF DUTY

The Teck Emergency Centre demonstrates an outstanding response to the challenges of the Stanley Cup riots

When Vancouver erupted in violence after the Stanley Cup final on June 15, the Teck Emergency Centre at St. Paul's faced possibly the busiest night ever experienced by a B.C. emergency department.

Just months after the completion of a three-year renovation project made possible by donor and government support, personnel at the Teck Emergency Centre treated 147 patients with injuries ranging from broken bones to knife wounds – approximately four times the typical patient volume. Almost half of the cases occurred within a span of two hours.

"I haven't seen a bigger two-hour volume than that in any hospital in B.C.," says Dr. Eric Grafstein, head of emergency services for Providence Health Care (PHC), which operates St. Paul's, "but the response of the medical staff was exemplary."

Operations Leader David Brown was one of many off-duty hospital employees who rushed to St. Paul's to lend their support once the riot had started: "As soon as I heard that people had burned and flipped over a car, I knew it was time to head to work."

Thankfully, PHC's Emergency Preparedness Planning group had been meeting with community partners for several weeks to discuss the potential need for emergency response during the hockey playoffs and develop a detailed contingency plan that enabled the hospital to mobilize quickly on the night of the riot.

Emergency personnel set up a triage system outside the hospital to treat minor scrapes and tear gas exposure on the spot, while the Heart Centre opened its doors to serve as a space for pastoral care workers to provide psychosocial support to people accompanying injured patients. In addition, the Surgical Daycare Unit served as a holding area to transfer patients from Emergency.

"The response was pretty awesome," Grafstein notes. "If there's any bright spot in this, it's that we now know that we can handle this kind of crisis."

Dr. J. William Ibbott witnessed the development of Canada's first ICU at St. Paul's Hospital.

Celebrating Canada's first ICU

Trail-blazing innovation in critical care celebrates its 45th year at St. Paul's

In September, St. Paul's Hospital marked a milestone – the 45th anniversary of its opening of Canada's first Intensive Care Unit (ICU) for critically ill patients.

While serving as a specialist in hematology and oncology at St. Paul's, Dr. J. William Ibbott attended a pivotal meeting at which philanthropist P.A. Woodward became so intrigued by the life-saving potential of the ICU that he decided to make a significant donation through the Mr. and Mrs. P.A. Woodward's Foundation to help make the project a reality.

"That was a little part of history that I was privileged to be part of," Ibbott says.

Photos: Brian Smith (top), Greg Morton

Caring for the Future

Former nurse and patient Marilyn Dumoret plans a gift of gratitude and ensures a legacy

Marilyn Dumoret has a unique perspective on St. Paul's Hospital, having experienced it as a nurse, patient and donor over the past four decades.

Dumoret took the first steps toward her dream of becoming a nurse at age 17, when she entered St. Mary's Hospital School of Nursing in Montreal. She would go on to enjoy a 53-year nursing career that included a memorable stint with St. Paul's.

"Before I moved to Vancouver, a nurse in Montreal told me I should work at St. Paul's," Dumoret recalls. "I really enjoyed working in an environment where many new developments in health care were taking place."

She particularly appreciated working with leading ophthalmologists like Dr. William H. Ross and the late Dr. Herb Fitterman, a pioneer of cataract surgery.

Dumoret left St. Paul's in 1979 to work in occupational health, but she never forgot her experiences at the hospital, which proved to be a great comfort when she returned there as a patient.

"I had a lot of confidence in the hospital after working there," says Dumoret, who has benefited from treatment for colon cancer at St. Paul's Gastroenterology Division and care from its Ear, Nose and Throat Clinic and Emergency Department. "As a patient, I was treated as an individual and with a lot of courtesy and care."

To express her appreciation and recognize the hospital's role in supporting patients throughout B.C., Dumoret has made donations to St. Paul's every year since 1999, most recently to the current campaign for a vascular angiography system that visualizes blood vessels to diagnose and intervene in potential problems.

Dumoret also decided to leave a legacy gift to St. Paul's Hospital Foundation in her will – a natural extension of her long relationship with the hospital and her way to honour the memory of her parents, who guided her career path by instilling her with a belief in the importance of togetherness, family and community.

"I have a real attachment to St. Paul's because of the care I received and because of how much I enjoyed working there," Dumoret says. "So I picked them, and I've never regretted it." ■

To learn how to include St. Paul's Hospital in your estate plans or inform us of your gift intentions, contact Trudy Loo, Planned Giving Manager, at 604-806-8271 or tyloo@providencehealth.bc.ca.

Marilyn Dumoret, former nurse and patient at St. Paul's Hospital.

"When the ICU opened two years later, it did so to the acclaim of people across Canada because of the nature of the new, emerging and high-tech aspects of cardiac and pulmonary medicine, and fulfilled the dream of Dr. Bill Hurlburt, who was Head of the Department of Medicine at St. Paul's for many years."

Led by cardiologist Dr. Dwight Peretz, St. Paul's opened a 10-bed Intensive Care and Coronary Care Unit in September 1966 and saw mortality rates for heart attacks cut in half. St. Paul's was soon hosting health-care professionals from across Canada who wanted to create ICUs in their own hospitals.

Today, St. Paul's 15-bed, multidisciplinary ICU continues to innovate through initiatives such as a collaboration with the emergency department that have more than halved deaths from blood infection. Ibbott, meanwhile, now sits as Medical Advisor for the Mr. and Mrs. P.A. Woodward's Foundation, which celebrates its 60th anniversary this year. The Mr. and Mrs. P.A. Woodward's Foundation reached another milestone in 2010 by surpassing $2 million in cumulative donations to St. Paul's with a gift to purchase state-of-the-art ventilators for the ICU.

"Being with the Mr. and Mrs. P.A. Woodward's Foundation for the past 12 years has been an eye-opener for me," Ibbott says. "I can now appreciate the urgency and demand for funding that is not covered by the Ministry of Health."

Photo: Brian Smith

Lights of Hope

St. Paul's iconic holiday season fundraiser enters its 14th year

The 2011 Lights of Hope campaign will shine from St. Paul's Hospital beginning November 24. Every year, the annual Lights of Hope campaign illuminates the exterior of St. Paul's Hospital with a spectacular display of holiday lights to inspire members of the public, the business community and the St. Paul's Hospital family to support the hospital's greatest needs and its role as an invaluable resource for the people of B.C.

The Lights of Hope campaign, which is heading into its 14th year, has raised more than $16 million for St. Paul's Hospital. This year, the campaign's goal is to raise $1.9 million.

Reach for the stars and help St. Paul's shine! Call 604-662-HOPE or visit *www.lightsofhope.com* for more information.

St. Paul's Supper Club

A new event raises funds and awareness for St. Paul's Hospital

In June, supporters across Metro Vancouver opened up their homes and restaurants, and donated their time and services, to the inaugural St. Paul's Supper Club – a series of dinner parties featuring a gourmet meal prepared by one of the city's premier chefs and an evening of conversation with some of St. Paul's brightest physicians and researchers.

Thank you to everyone who contributed to the success of the event, including Cecile and Gurval Caer, Jake and Judy Kerr, Chantelle and George Wong, Fleuri Restaurant and Chef Michael Deutsch, Hawksworth Restaurant and Chef David Hawksworth, Tojo's Restaurant and Chef Hidekazu Tojo, West Restaurant and Chef David Gunawan, and YEW restaurant + bar and Chef Grant Macdonald. Special thanks to Foundation board members David Poole and Kathryn Young for their leadership.

Foundation past-chair Paul Hollands (left) with Chef Hidekazu Tojo and Dr. Michael Krausz.

5 GREAT WAYS TO give

1. Become a monthy donor

Automatic payments from your credit card or bank account are convenient and save you the time and money it takes to mail in donations. At the end of the year, you'll be surprised by how your contributions and tax credits have added up, while providing a stable and reliable source of funding for St. Paul's. Call 604-806-8912.

2. Give a gift of securities

Save a significant amount of money at tax time by donating securities, such as publicly traded shares and mutual funds, even if you have a capital loss! Call 604-806-8923.

3. Honour a loved one

A gift made in honour of a family member or friend can be a special and unique way to pay tribute to them or their memory, or to celebrate a milestone occasion such as a birthday or wedding. Call 604-806-8912.

4. Make a bequest or a planned gift

Plan for a future gift either in your will or through another means such as life insurance, an RRSP or RRIF, or a trust. Call 604-806-8271.

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Photo: Moises Uribe, Illustration: Colleen Keith, artist, Capilano University, IDEA Program 2011

Breath of Life

Biomarker research could improve detection and treatment of deadly lung disease.

The Greek playwright Sophocles said "a human being is only breath and shadow." While he specialized in drama and not medicine, he may have been onto something. Just ask Vivianne Toupin, whose life has revolved around a daily struggle for breath due to chronic obstructive pulmonary disease (COPD) since 1990.

Toupin is not alone. COPD is a progressive, epidemic lung disease that makes it hard to breathe – and every 10 seconds someone, somewhere, dies from it. World Health Organization studies suggest 210 million people worldwide have COPD. Close to three million of them are in Canada, half of whom are undiagnosed and gasping for breath without knowing why.

COPD has no cure, no way to diagnose it early and no way to reliably predict exacerbations ("lung attacks" that are extremely difficult to treat). Treatment involves controlling or minimizing the impact of symptoms and avoiding lung infections, but that's not always easy.

However, that could change through a new research study being conducted at the Prevention of Organ Failure (PROOF) Centre of Excellence at St. Paul's Hospital. Dr. Don Sin, head of respiratory medicine at St. Paul's, Canada Research Chair in COPD and Professor of Medicine at the University of British Columbia (UBC), and Dr. Wan Tan are heading up a multi-million-dollar research program, in collaboration with GlaxoSmithKline Inc., to try to gain control of COPD. The PROOF Centre has made great inroads in studying whether biomarkers – genes and proteins in the blood that could be used to detect changes in a patient's health – can predict organ rejection without the need for painful biopsies. Now, Sin and Tan want to discover if biomarkers can be used to develop a blood test to identify patients with COPD who will go on to experience lung attacks.

This simple test could amount to a monumental advance in medicine. According to the Canadian Thoracic Society, hospital admissions for serious COPD lung attacks average 10 days, at a cost of about $10,000 per stay. Direct costs related to COPD exacerbations are estimated at $736 million a year in Canada.

(Left) COPD patient and research participant Vivianne Toupin with physiotherapist Fiona Topp; (below) Dr. Don Sin is researching developing a blood test to identify patients at risk of COPD complications.

Worse yet, lung attacks are a leading cause of death for people with COPD, which is why helping patients avoid lung attacks is another key focus. The PROOF Centre's biomarker research could lead to a diagnostic tool to help doctors personalize medications for each patient's particular needs.

"When patients complain of not feeling well, doctors increase or add medications," says Sin. "It would be better to have an accurate blood test that can help doctors target the right medication for each patient and avoid giving medications to patients who don't need them."

Sin's team is also working to develop and modify imaging tools, such as CT scans and bronchoscopy, to understand why some patients with COPD develop lung cancer, lung attacks and even heart attacks – health threats that are much more common in patients with COPD than in the general population.

"That way, doctors can give therapies or advice to help prevent these things from happening in the future," Sin explains.

Nothing would make Toupin happier, especially after having watched COPD take five members of her family. It's why she takes part in research studies dealing with the disease: "There are not many positive aspects to COPD, but the research and the hope and knowledge it brings is good for me, my family and my friends."

That same hope is what has driven St. Paul's to become a leading research and clinical centre for COPD, playing a key role in UBC's third-place ranking among the world's top institutions for COPD research.

"We have all the right collaborations in place," says Sin, who hopes to see the new biomarker tests put into clinical practice in the next three to four years. "All we need is a little hard work, some luck, patient support and some additional funding." ■

For more information on how you can support St. Paul's research on respiratory care or biomarkers, call 604-682-8206 or visit www.helpstpauls.com.

Photos: Jenn Myers (Vivianne Toupin and Fiona Topp), Brian Smith (Don Sin)

The first in-centre nocturnal dialysis program in B.C., currently being piloted at St. Paul's Hospital, holds promise as a real life-changer for kidney patients.

by J.K. Malmgren

the night shift

(Left to right) St. Paul's Renal Program team members (Dr. Mercedeh Kiaii, RN Jeanette Feizi-Farivar, clinical nurse leader Dave Morrison and RN Neil Penalosa) with dialysis patient Jack Cheung.

Three years ago, Jack Cheung's failing kidneys were destroying his quality of life.

"I couldn't work for more than two hours at a time," says the 58-year-old automotive technician. "My hands would cramp, my feet were swollen and I couldn't stand for more than half an hour."

He knew what he had to do, but had been holding off until the last possible moment. He'd already been told that dialysis was his best option. However, he dreaded not only the process, but also how his life might be affected by having to attend three four-hour sessions of dialysis at the hospital each week. He didn't know if he could work around it, and if it would even be worth it.

"I put it off for as long as I could," he says, "but now I wish I'd done it a lot sooner."

For Jack, the positive effects of dialysis far outweighed the inconvenience, and he felt better than he had in years.

OVERNIGHT ADVANTAGE

Last year, the Renal Program at St. Paul's Hospital administered more than 83,000 in-centre dialysis treatments for patients who are physically unable or lack the necessary support system to undertake dialysis at home. While in-home dialysis is usually performed at night – providing the patient with improved comfort and convenience – hospitals have typically only offered in-centre dialysis during the day, which can pose challenges for patients who must take time away from work and family.

To investigate how to better serve its patients, St. Paul's launched the province's first in-centre nocturnal dialysis pilot program in January 2011. The project – a collaborative effort between Providence Health Care, Vancouver Coastal Health and the BC Provincial Renal Agency – requires patients to come to the hospital three times a week, but they do so in the evening and the dialysis is performed overnight as they sleep.

"It's done more slowly, which is much better tolerated by the body," says nephrologist Dr. Mercedeh Kiaii, pointing to reduced stress on the heart and other organs. "The longer time also allows the toxins to come out of the cells; during the four-hour daytime therapy we're only able to remove what's in the blood."

The program, which started with 16 participants, is now up to 18 and will almost certainly reach Kiaii's goal of 20 by the end of the pilot period in January 2012. The program is based on a successful pilot undertaken at St. Michael's Hospital in Toronto, the first hospital in Canada to offer in-centre nocturnal dialysis.

"We collaborated with the Toronto in-centre program and our own home nocturnal program, and we already had a lot of the infrastructure in place at St. Paul's, so the pilot project has moved forward very smoothly," says Kiaii. "We've also been fortunate to have a group of dedicated and skilled nurses who have been integral to the program."

Since entering the program in May, Cheung has not only taken back his days, he's realized many benefits far beyond his expectations.

"With the regular program, I would go right to bed after dialysis. I couldn't drive long distances and would have to rest three more hours before I could do anything," he says. "With nocturnal [dialysis], I can work right through the day."

Cheung says the expanded dialysis has also allowed him to eat more of his favourite foods, like bananas, and drink the occasional beer. It has also reduced his medications significantly – his once daily intake of 20 pills has been cut in half and it's still dropping.

For patients waiting for a kidney transplant, better dialysis tends to lead to healthier transplant candidates if a suitable kidney becomes available, which will be increasingly important with the incidence of kidney disease currently rising at a rate of 10 per cent a year. Happily, the success of programs like the in-centre nocturnal dialysis pilot project and the support of generous donations from the community will help St. Paul's Hospital continue to be a leader in renal research and patient care. ■

For more information on how you can support the work of the Renal Program at St. Paul's Hospital, call 604-682-8206 or visit www.helpstpauls.com.

Photo: RS PRODUCTIONS

visionary thinking

The William H. Ross Fellowship in Vitreo-Retinal Excellence produces top eye specialists and fosters a culture of continued learning that benefits the next generation of ophthalmologists and their patients.

by Joseph Dubé

Current Ross Fellow Dr. Ketan Laud (left), pictured here with Dr. William Ross, plans to work in a teaching institution and pursue clinical research in New York City.

For more than a century, St. Paul's Hospital's mission has included teaching world-leading skills to successive generations of physicians. One example is the William H. Ross Fellowship in Vitreo-Retinal Excellence at St. Paul's Hospital – an advanced program for developing highly specialized eye surgeons who will help patients and advance patient care by sharing what they have learned with their colleagues.

Each year, the William H. Ross Fellowship gives one exceptionally promising vitreo-retinal surgeon the opportunity to study with world-class retinal specialists at St. Paul's Hospital and at Vancouver General Hospital. This year, Dr. Ketan Laud, a native New Yorker and Columbia University alumnus, is the proud recipient of this unique opportunity.

"I am very excited to be selected and working here in Vancouver with the University of British Columbia's (UBC's) retinal specialists. They are clinicians I respect and consider as leaders in our field. They have developed and maintained an international reputation for excellence in medical and surgical retinal training. It is an honour to work with them and care for the population of B.C.," says Laud, whose plans include returning to New York City to work in a teaching institution and pursue clinical research.

Ross, director of the Retinal Service at Providence Health Care and Clinical Professor of Ophthalmology at UBC, says Laud's commitment to research and education distinguished him from this year's pool of 65 fellowship applicants from around the world.

"We do not want to train people who are planning to go into private practice in a small facility where they'd be unavailable to teach medical students and residents," says Ross. "We want to educate physicians who are going to make a difference in our field in terms of future teaching and clinical research at university-affiliated hospitals."

Ross says all of his fellows share a commitment to learning and teaching, which he actively helps them pursue after their time at St. Paul's is completed. For example, Ross connected Dr. Andrew Kirker to additional training opportunities after completing his fellowship in 2009. Following stops in Calgary, Philadelphia and Sydney, Australia, Kirker has permanently re-joined St. Paul's, where he'll share his expertise in ocular tumours and uveitis (eye inflammation) with students and patients alike.

"My time in the fellowship was very beneficial in developing my surgical technique," says Kirker, who returned to St. Paul's because, "I really like the community feel at St. Paul's. With so many residents and fellows around, it keeps everyone on top of their game. There's a real energy about the place."

Not only is education and teaching paramount to the doctors involved with the fellowship, it's a priority for those who generously fund their work. After having the sight in his sole seeing eye restored by Ross, former EnCana Corp. CEO Gwyn Morgan, along with his wife, community leader Patricia Trottier, decided in 2009 to make a $1.375-million commitment to support one Ross Fellow a year for the next 25 years to ensure a bright future for the program.

"Mr. Morgan and his wife have a philosophy of investing in people as opposed to equipment or infrastructure," says Ross. "By funding our fellowship for the next 25 years, they have guaranteed we will train 25 superb vitreo-retinal surgeons and physicians who will then return to their countries and continue to teach other fellows – so their gift has the potential to change the lives of countless patients around the world."

Benefits of the fellowship are already evident. Research into macular degeneration undertaken by past fellows, and the subsequent development of new drugs to control blindness, has impacted patients in B.C., Canada and beyond. Upcoming projects by other Ross-trained fellows include staging doctor-to-doctor teaching clinics in developing nations such as China and Malaysia, where populations suffer from curable problems like retinal detachments and cataracts.

"There's no more satisfying goal than to pass on your surgical skills and your medical knowledge to the new generation so that they can continue to provide teaching for their generation of students," says Ross. "We're happy that we can make a difference." ■

Photo: Brian Smith

Healing Homeless

Drs. Michael Krausz and Iris Torchalla are analyzing data from a major survey of homeless people with an eye to developing effective interventions.

Photo: RS PRODUCTIONS

ness

Connecting the dots between mental health, addictions and homelessness could lead to solutions for relieving the suffering of B.C.'s most vulnerable.

by Helena Bryan

An estimated 40,000 British Columbians have inadequate housing, with many of them living on the streets of Canada's poorest postal code – 10 square blocks of Vancouver known as the Downtown Eastside (DTES). While homelessness exacts a terrible social and financial burden on this province, the problems faced by these people began long before they lost the roofs over their heads.

MULTIPLE CHALLENGES

"Mental health challenges are the main reason people end up homeless," says Dr. Michael Krausz, the Providence Health Care BC Leadership Chair in Addiction Research based at St. Paul's Hospital. It's one of the major findings of the *Health and Health Care of the Homeless* survey led by Krausz, who is developing a body of leading-edge research on innovative treatment approaches for people with mental health and addictions issues, particularly in the DTES.

The survey, funded by BC Mental Health and Addiction Services, is an initiative of the Centre for Health Evaluation and Outcome Sciences (CHÉOS) at St. Paul's, an inter-disciplinary research collective where researchers evaluate the effectiveness of a range of health interventions. Researchers conducted comprehensive interviews with 500 homeless individuals from Vancouver, Victoria and Prince George on topics including mental health, quality of life, patterns of alcohol and drug use, trauma history and access to health care.

Analyzing the mountains of data collected in the survey is a complicated, time-consuming process, but also a necessary one to better understand this under-researched population and adapt interventions to meet their specific needs. The survey could have implications not only for health-care professionals, but also for policymakers, politicians and members of the public interested in addressing the "homelessness issue."

"What the initial findings tell us is that homelessness is actually a symptom of a deeper, more complex set of problems," says Krausz. "Homeless people face the challenge of concurrent disorders – mental health issues coupled with addiction – apart from their homeless status. Any discussion of a solution to the homeless problem must go beyond the issue of shelter and affordable housing to a more integrated approach."

UNEXPECTED FINDINGS

For example, the survey found a higher-than-expected level of childhood trauma, with 80 per cent of participants suffering significant trauma, abuse, violence or emotional neglect when they were children. In fact, most study participants have experienced more than one type of maltreatment, experiences that have devastating lasting impact, including moderate to high-risk for suicide. Many also suffered severe mental health challenges such as schizophrenia, mood disorders and fetal alcohol syndrome.

"It's astounding, but 493 of the 500 study participants had a formal diagnosis of mental health issues," observes Krausz. "Clearly, the health challenges, especially trauma, start much earlier than living in substandard housing – very often in childhood or critical developmental periods."

To make matters worse, those who needed treatment the most tended to have the least access to care.

INTEGRATED SOLUTIONS

So what do the survey results mean in terms of policies and programs? For one, early interventions for childhood trauma, mental health issues and addictions can play a crucial role in curbing homelessness later in life. Also, current substance abuse treatment strategies are not working, and affordable housing and temporary shelters, while certainly part of the solution to homelessness, are not enough.

"Yes, you need to provide a safe place to stabilize and reintegrate into society; the streets are no place to recover," says Krausz. "But you also need to provide effective treatments and supports for the underlying mental health and addiction issues that are endemic in this population. Otherwise, people will just lose their housing again."

This integrated approach to caring for the homeless also provides a less-costly alternative to leaving things as they are.

"Right now, we're using the system in a very inefficient way," says Krausz. "People who are homeless drop in and out of the emergency room and suffer expensive complications such as HIV, hepatitis C and respiratory and cardiac illnesses. There are also the non-health-care costs, such as welfare, and the costs of the criminal activity this group tends to get involved in to support their substance use."

Krausz believes the real challenge is not an economic one: "The solution requires various levels of government and departments within those governments to work together and we're just not used to that level of integration."

To that end, Krausz is working with health-care, university and community partners to develop a Centre of Excellence in Addictions and Concurrent Disorders (CEACD) that will do for addictions and mental health issues what the world-leading BC Centre for Excellence in HIV/AIDS (BC-CfE) at St. Paul's has done for HIV/AIDS treatment and prevention. The CEACD will be the first and only provincial organization to integrate care and teaching, and research focused on addictions and mental illness and other concurrent disorders. Krausz pictures an organization that will play a leadership role in addressing the suffering and social costs that stem from addictions and concurrent disorders.

"We'll continue to work to develop the necessary relationships with government, raise awareness and teach the next generation of clinicians that medicine – good medicine – is much more than technical interventions and pill prescriptions," says Krausz.

He knows the solution won't happen overnight. After all, he and his colleagues must build the critical mass of research that will demonstrate beyond doubt that there's a more effective way to deal with the homeless issue. However, he is confident that answers are within reach.

"Only when we connect the dots between physical fitness, mental health and social conditions can we begin to develop effective integrated treatments that will not only help improve the health status of an especially vulnerable group, but also solve seemingly intractable social issues like homelessness and the DTES." ■

For more information on how you can support St. Paul's Hospital in ending the suffering caused by addictions and mental health issues, call 604-682-8206 or visit www.helpstpauls.com.

HSBC BANK CANADA FELLOWSHIP IN ADDICTION RESEARCH

In August 2010, the HSBC Bank Canada Fellowship in Addiction Research was awarded to University of British Columbia post-doctoral student Dr. Iris Torchalla. The Fellowship, made possible by a three-year, $180,000 commitment from HSBC Bank Canada, will enable Torchalla to play a crucial role in advancing the work of Dr. Michael Krausz at St. Paul's Hospital.

One of Torchalla's initial goals is analyzing *Health and Health Care of the Homeless* survey data on an often-overlooked group: homeless women. A 2001 study found that single women account for 10 to 25 per cent of the homeless in Canada, and Torchalla hopes to help researchers and clinicians develop a comprehensive perspective on the issues faced by this population.

"I was interested in the female Canadian sample because I assessed substance use and mental disorders in homeless women in Germany for my master's thesis," Torchalla says. "But I also wanted to improve our understanding of this group to inform new treatment strategies that better meet their specific needs."

The picture that emerged from the survey is troubling: 70.5 per cent were addicted to drugs; almost 40 per cent were dependent on alcohol; 30 per cent were addicted to both drugs and alcohol; and close to 60 per cent struggled with both substance abuse and mental health disorders. Like the men in the study, most had experienced more than one type of childhood maltreatment and a substantial number were at moderate-to-high risk for suicide.

"What's especially telling about the numbers is that the majority of these women had contact with general health services and a significant number had received treatment for their substance abuse in the past year," says Torchalla. The fact that most still have a current mental health or substance use disorder indicates that existing services are not sufficient to address their needs.

Furthermore, few participants had recently received specialized mental health care and crisis intervention, indicating a need to improve access to these services. Developing intensive, comprehensive and integrated treatment and harm reduction programs to account for the high severity and complexity of their problems and high rates of psychiatric co-morbidities (multiple disorders) may also be required. □

Tackling HIV in China

China adopts an HIV/AIDS management and prevention approach pioneered by the BC Centre for Excellence in HIV/AIDS and practiced in B.C.

by Jessica Werb

Dr. Julio Montaner, director of the BC-CfE at St. Paul's (left) with Dr. Zunyou Wu, China's director of the National Centre for AIDS/STD Control and Prevention.

In February 2011, China announced it would undertake widespread HIV testing and treatment using the "treatment as prevention" model pioneered at the BC Centre for Excellence in HIV/AIDS (BC-CfE) at St. Paul's Hospital. The national policy has a goal not only to curb the progression of AIDS in China, but also to minimize transmission of the virus in a country with an estimated 740,000 HIV infections and nearly 110,000 people living with AIDS.

"We believe that treatment as prevention is the model of care and containment that will best help China meet its goal of bringing HIV and AIDS under control by 2015," says Dr. Zunyou Wu, director of the National Centre for AIDS/STD Control and Prevention in the Chinese Centre for Disease Control and Prevention.

TREATMENT AS PREVENTION

In 1996, the BC-CfE played a lead role in developing the gold standard of HIV/AIDS treatment – the multi-drug combination known as highly active anti-retroviral therapy (HAART). Since then, the BC-CfE has demonstrated that increased access to HAART also has value in preventing the occurrence of new infections.

"Between 1996 and 1999, when HAART was first implemented in B.C., we saw a rapid rise in the number of people in treatment, and a reciprocal decline in the number of new infections diagnosed year by year during that period," notes Dr. Julio Montaner, director of the BC-CfE and the UBC/St. Paul's Hospital Foundation Chair in AIDS.

When the number of people in treatment plateaued, so did the number of new infections. However, new infections began to decrease again when the BC-CfE, with the support of the provincial government, embarked on a new expansion of treatment coverage in 2004. New HIV diagnoses in B.C. have gone from about 800 per year prior to the introduction of HAART to just 301 in 2010 – making B.C. the only jurisdiction in Canada to see sustained decreases in this period.

These results, published in the prestigious medical journal *The Lancet*, caught the attention of public health professionals around the world. Among them was Wu, who last year led a delegation from China to consult with the BC-CfE.

"We started to discuss ways in which China could try to replicate our initiative," says Montaner. "We were delighted when Wu wrote to confirm that the new five-year plan for the control of HIV and AIDS in China was going to be based on the notion of treatment as prevention, adapted from the work that we have done here in British Columbia."

Wu explained that in 2010, 66 million people in China were tested for HIV and 66,000 new infections were identified – 25,000 of whom were enrolled for free HAART. This year, China has set a target of identifying 75,000 new HIV infections and enrolling 40,000 new patients into treatment.

"In the next five years we anticipate that HIV incidence will be reduced by 25 per cent, and AIDS mortality will drop by 30 per cent," says Wu.

Montaner feels optimistic as the BC-CfE continues to discuss ways to help Chinese health authorities implement and evaluate its plans: "I'm impressed by the commitment that they have shown to this and the speed at which they are adapting things to the Chinese system. Right now, the jury's out. We'll wait and see what happens, but I'm impressed." ■

The BC-CfE, St. Paul's Hospital Foundation and the Faculty of Health Sciences at Simon Fraser University (SFU) have partnered to raise $3 million to create a new endowed Chair in HIV/AIDS Research, whose responsibilities will include disseminating research to help local and international policy-makers, health-care professionals and social scientists make informed public health decisions. To date, donors have helped St. Paul's Hospital Foundation raise more than $600,000, while SFU has committed another $1.5 million. To help complete the fundraising goal for the Chair and help stop the global HIV/AIDS pandemic, call 604-682-8206 or visit www.helpstpauls.com.

Photo: Brian Smith

Not just a man's disease

The new University of British Columbia Heart and Stroke Foundation Professorship in Women's Cardiovascular Health will research gender-based differences in cardiovascular disease and improve outcomes.

by Gail Johnson

Grace Dierssen participated in the Healthy Heart Program at St. Paul's Hospital as part of her recovery from an unexpected heart attack at age 44.

Three days after her 44th birthday, Grace Dierssen was getting ready for work when she felt an intense, crushing pain in the middle of her chest. She knew she was experiencing a heart attack but didn't really believe it was happening. With a demanding job in e-commerce, she still went to work.

The Vancouver resident got to her office and, shortly after a conference call, experienced severe pain shooting up her left arm and into her neck. She knew at this point she could no longer ignore what was happening and finally acknowledged she had to get it checked out. Less than 10 minutes after seeing a doctor at a nearby medical clinic, Dierssen was in an ambulance on her way to St. Paul's Hospital.

"I was having the classic male symptoms of a heart attack, yet I still felt that I had failed myself and was embarrassed about the situation I was in," Dierssen recalls. "Even when I was in the ambulance I was still hoping it was all in my head and that I'd be able to go home."

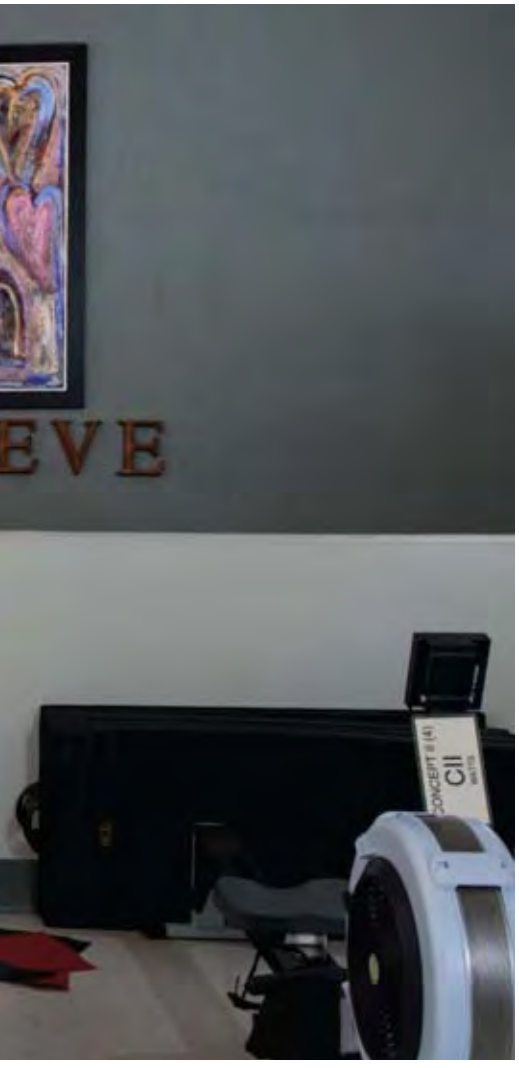
The misconception that heart disease is primarily a male health concern is all too prevalent, says Dr. Karin Humphries, a research scientist at the Centre for Health Evaluation and Outcome Sciences (CHÉOS) at St. Paul's and the inaugural University of British Columbia (UBC) Heart and Stroke Foundation Professor in Women's Cardiovascular Health.

"For decades this was considered a man's disease, and that's still very ingrained among lay people," says Humphries. "The reality is that more women are dying of heart disease than men. It's a very serious issue."

In Dierssen's case, she wound up having an angiogram followed by a three-day stay in hospital. Looking back, she can see she had many risk factors for a heart attack, including working in a stressful environment, putting on weight and a lack of exercise – not to mention that her father had had

Photo: Brian Smith

Dr. Karin Humphries



a heart attack at age 45. But she says it was still "a very slow realization that I'd had a heart attack."

GENDER-BASED DIFFERENCES

Although medical knowledge about cardiovascular disease (heart disease and stroke) in women has broadened in recent years, many questions remain unanswered. Evidence points to gender-based differences related to the prevalence, symptoms, diagnosis, treatment and outcomes of heart disease, but there are serious gaps in the research.

"We still don't understand why women have worse outcomes than men," Humphries notes. "For instance, why, after a heart attack, are young women more likely to die than young men?"

Few research programs to date have focused specifically on women's cardiovascular health, and none of them existed in British Columbia – until now.

In an effort to better understand cardiovascular disease in women and improve treatment and outcomes, St. Paul's Hospital has partnered with UBC to establish the UBC Heart and Stroke Foundation Professorship in Women's Cardiovascular Health, with the generous support of Cardiac Services BC and the Heart and Stroke Foundation of Canada.

Humphries, whose research has focused largely on studying sex and gender-related differences in the diagnosis, treatment and outcomes in those with coronary artery disease, notes that many women aren't aware of the true risk of heart disease. Many mistakenly think that they have a greater chance of being diagnosed with breast cancer, and women under age 55 have a particularly hard time even relating to talk of heart disease, often downplaying their risk. Furthermore, there's evidence that women delay seeking treatment, misinterpreting their symptoms or putting the needs of others (such as their spouse or children) before their own.

One of Humphries' research goals is to examine the role psychosocial factors play in the development of heart disease in women: "For many young women, odds are they have children, plus elderly parents, and they're working. How do you balance all that and look after your own heart health? The importance of psychosocial factors is often overlooked."

PROMISING OUTCOMES

Not only will the new Professorship facilitate more detailed investigation into gender differences associated with cardiovascular disease, it will generate vital data for the development of effective prevention and treatment strategies tailored specifically to women.

"Besides generating new knowledge, the Professorship will translate that knowledge into practice and policy," says Humphries. "It will be utilized in a practical way."

As a teaching hospital, St. Paul's is a well-established training facility for cardiac specialists and a leader in heart disease research, both in the laboratory and in the clinical setting.

Dierssen can attest to the ways current knowledge in cardiovascular disease has assisted her. After participating in the Healthy Heart Program, a cardiac rehabilitation program at the provincial Heart Centre at St. Paul's, she's made a point of exercising regularly, doing yoga and improving her diet. She also gave up her stressful job.

"I knew if I didn't make some changes I'd be in the same position again," Dierssen says. "I knew it happened to women, but I was still surprised that it happened to me. Now I put my health first." ■

HEART ATTACK AND THE SEXES

Research has shown both similarities and differences in how men and women experience heart attacks. Like men, women can experience chest pain with the onset of a heart attack, as well as shortness of breath, shoulder or arm pain, sweating, and nausea. While chest pain is the most common symptom in both men and women, women tend to report more symptoms, including throat or jaw pain, unusual fatigue that gets worse with activity, overall weakness and anxiety. Cardiovascular disease also typically develops later in life in women than in men, at a time when many women don't have any support at home. As well, more women die of heart attack and stroke than men, and women with heart attack symptoms are more likely than men to delay seeking care at a hospital. □

Photo: Don MacGregor Photography Ltd.

Illustration by Colleen Keith, artist, Capilano University, IDEA Program 2011.

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