

VOICE OF ST. PAUL'S FOUNDATION

# Promise

2023



## Bridging the gap between caring and curing

**A first-in-Canada nursing  
and allied health professionals  
research initiative to improve  
care for patients and families  
across BC**





## FROM THE TEAM

“It sounds futuristic, but these initiatives are transforming health care today – and setting the stage for the health care of tomorrow.”

## WE'RE NOT WAITING FOR THE FUTURE, WE'RE BUILDING IT

**IT'S ALMOST LIKE THE VOICEOVER** for a movie trailer. *Imagine a world where health care and innovation go hand-in-hand. Where doctors and nurses are leveraging technology, training, and equipment to save and improve lives. Where patients from communities across BC get the best care and have the most positive outcomes.*

Here's the thing: you don't have to imagine it. It's happening at St. Paul's Hospital and across Providence Health Care *right now*. And it will *continue* to snowball as we journey to the new St. Paul's on the Jim Pattison Medical Campus in 2027.

And that's what this issue of *Promise* is all about.

Our cover story features a game-changing initiative that will support nurses and allied health professionals who want to advance their careers as clinician-researchers. You'll read how two of the best septic shock researchers *in the world* are tackling the devastating effects of sepsis. How bad is it? As Dr. Jim Russell puts it, "Sepsis is worse than cancer and worse than heart failure."

We're also shining a spotlight on a unique-in-Western-Canada program that will assist young patients who have congenital and chronic illnesses as they "graduate" out of

pediatric care and into the adult system.

You'll read about plans for a clinic specifically designed to help people in the earliest stages of dementia; a team working with patients who've had severe allergic reactions to prescription drugs to assist their recovery and identify others who might be at risk; and a successful pilot at the Providence Breast Centre replacing wire-guided cancer surgery with a magnet the *size of a sesame seed*. That's right, a sesame seed.

It sounds futuristic, but these initiatives are transforming health care today – and setting the stage for the health care of tomorrow.

And it's all happening because of you. So if you ever feel like your gift is too small to make a difference, think again.

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*On behalf of the St. Paul's Foundation team*

# Promise

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**AT ST. PAUL'S FOUNDATION**, with the generous support of our donors, we're on a mission to revolutionize our own health care, to set an example not just for Canada, but for the entire world.

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**COVER:**  
Kate Davies, Sandra Lauck, and  
Michelle Carter by Jeff Topham







# UNDERSTANDING A GLOBAL SCOURGE

Doctors at St. Paul's Hospital are pioneering new treatments for sepsis, the real killer of the COVID-19 pandemic

BY JOANNE PETERS

PHOTOGRAPHY BY DAVID TAM – THE COCONUT CREATIVE

Two years ago, James Stitchman was spending much of his retirement writing a book with his young grandson and enjoying brisk walks along Vancouver's seawall. Then he got COVID-19, and everything changed. One morning, his wife found him unable to communicate or understand what she was saying. She took him to St. Paul's Hospital. He spent nine days there, struggling to breathe and in a state of confusion.

Stitchman had developed sepsis, an aggressive infection triggered, in his case, by COVID-19. The syndrome can cause rapid, widespread organ failure affecting the lungs, kidneys, brain, and heart.

Sepsis is the number one cause of death worldwide, but early recognition and treatment can reduce mortality by half. For Stitchman, the quick recognition and care he received at St. Paul's saved his life.

"I was one of the lucky ones. I got to go home again," says Stitchman, who subsequently experienced memory problems and shortness of breath for about a year. "I don't have any

recollection of some of my time at St. Paul's. I was a lost soul for a few days there. But I had a great team pulling for me. I appreciate everything St. Paul's did for me."

Sepsis is getting increased attention due to its association with COVID-19. That's because we've learned that COVID itself isn't the killer. Rather, COVID is a viral infection, often involving the lungs (called pneumonia), that triggers an out-of-control immune response, which is sepsis. And it's the sepsis that causes organ failure leading to death.

And the reason sepsis is so challenging to treat? There's no specific, proven medication for it. It's a complex syndrome that can require antibiotics, oxygen, drugs to stabilize blood pressure, and dialysis to support failing kidneys. In addition to this, there's also no diagnostic test available to detect sepsis, making the diagnosis a challenge.

## FIRST IN THE WORLD

Long before the pandemic, the team at the Centre for Heart Lung Innovation (HLI) at St. Paul's was developing

the first new treatments for sepsis since the introduction of antibiotics in 1941. Today, HLI is the leading sepsis laboratory in the world, with the most breakthroughs and the most impactful research.

"Sepsis is deadlier than cancer, than heart attack, than heart failure. One in three people who get sepsis will die within a month," says Dr. Jim Russell,

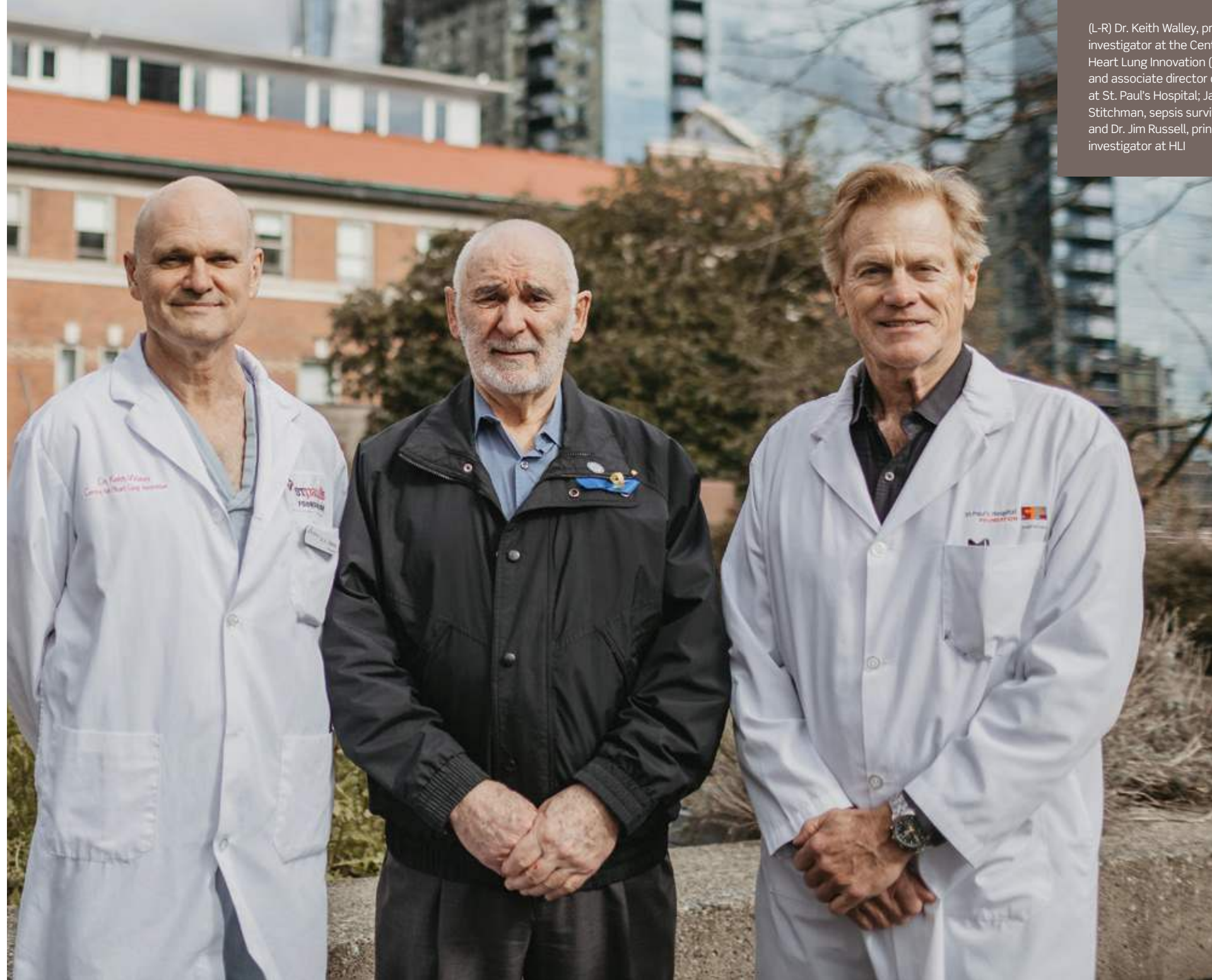
principal investigator at HLI.

"The pandemic we've all been living through is actually a pandemic of sepsis due to COVID-related pneumonia. Everybody who dies of COVID actually dies of sepsis and pneumonia. Everybody."

As the top ranked septic shock researcher in the world, Dr. Russell knows how prevalent and devastating

“Few people know that more people die of sepsis than of heart attack. About one in three who get sepsis will die within one month. It is worse than cancer, worse than heart attack, and worse than heart failure.”

– Dr. Jim Russell



(L-R) Dr. Keith Walley, principal investigator at the Centre for Heart Lung Innovation (HLI) and associate director of ICU at St. Paul's Hospital; James Stitchman, sepsis survivor; and Dr. Jim Russell, principal investigator at HLI



Drs. Jim Russell and Keith Walley in the sepsis lab at St. Paul's Hospital



sepsis can be. And that is exactly why, together with his colleague, Dr. Keith Walley – another global leader in septic shock research – they are focusing on discovering and understanding the mechanisms behind sepsis.

The duo has co-published scores of studies in esteemed medical journals including the *New England Journal of Medicine*. And, they've seen more than 10,000 ICU patients with sepsis over their careers.

"We have a really wonderful

collaboration because Dr. Russell's clinical trials often arise from ideas in the lab," Dr. Walley says. "Over the last 35 years, what we've accomplished has changed global sepsis practices and improved survival rates."

### HIGH TECH HOPE

Drs. Russell and Walley are leading new research that could be a game-changer in sepsis treatment, examining how a class of drugs called PCSK9 inhibitors, currently used for heart disease and stroke, could treat sepsis.

"We were the first in the world to discover that people with a defect in their PCSK9 gene have a better survival rate," Dr. Russell says. "And our discovery led to others doing a recent trial of a PCSK9 inhibitor showing significantly decreased mortality of acute COVID-19."

To go even further with their promising research, the pair have their sights set on the creation of a Chair in Critical Care. This senior academic research role will focus on critical

care medicine and sepsis, which go hand-in-hand. As a first-in-Canada initiative, the new Chair will take HLI's work to the next level with research that could yield drug discoveries, new treatments, and better outcomes for British Columbians and people across the globe.

As for Stitchman, he recovered from his sepsis ordeal and is now back to strolling the seawall. And he even finished the book he was writing with his grandson. (It's called *Thunder and the Werewolves*.)

"James' story inspires me to do this research," says Dr. Russell. "It could have been a tragedy for this family. Now he's back to living his life. If we continue to recruit brilliant scientists, we can keep St. Paul's at the forefront of science and research. And we can make everyone's experience with sepsis more hopeful." ♦

## SEPSIS BY THE NUMBERS

NEARLY  
**11**  
MILLION  
sepsis-related deaths  
per year globally

**25%**  
of survivors will need  
to be rehospitalized  
within the year

**50%**  
of those who recover  
will live with post-sepsis  
syndrome, which includes  
shortness of breath, weakness,  
fatigue, depression, PTSD,  
loss of limbs, and  
organ failure



We spoke with Dr. Russell about sepsis research, the beacon of the new St. Paul's Hospital, and how stories like James' keep him moving forward.

Watch this heartwarming story by scanning the QR code.



(L-R) Frances Dowdeswell, whose late husband, Ian, was a patient at St. Paul's Hospital's Geriatrics Clinic; and Dr. Martha Spencer, division head of Geriatric Medicine at Providence Health Care

# A COMPASSIONATE REVOLUTION IN EARLY DEMENTIA CARE

Imagine you or a loved one are starting to lose your memory. You may be scared or embarrassed or both. There's a good chance you're trying to hide it. Now imagine a team of specialists is there to help you understand what's happening, mitigate your symptoms, calm your anxiety, and even slow down the progression of your disease. How life-changing would that be?

BY MELISSA EDWARDS AND KRIS WALLACE » PHOTOGRAPHY BY JEFF TOPHAM



At first, it was the small things. Ian Dowdeswell had trouble remembering the steps at the dance classes he and his wife, Frances, loved. Sometimes, he'd leave his wallet at home, or forget the name of a close friend.

"Ian was so well spoken. It was hard to believe anything was wrong. Everyone said it was just aging, and not to worry about it," says Frances.

Eight years later, during a routine follow-up at St. Paul's Hospital, the couple relayed their concerns to their doctor. He listened and recommended they visit a geriatric clinic near their home in West Vancouver.

When the appointment finally took place – a year later – Ian was told he had mild cognitive impairment (MCI). He was put in line for a brain scan, which took another year. Finally, the couple received a diagnosis: Alzheimer's disease.

"When we asked them what we should do, they suggested puzzles and drop-in groups, and told us to come back in another year," Frances remembers.

Frances calls it "diagnose and dismiss." And a team of physicians and health professionals at St. Paul's wants to put an end to the practice.

## TIME IS OF THE ESSENCE

At least 70,000 British Columbians are currently living with dementia. And while cognitive changes are not uncommon over age 65, people often delay getting help. When they do finally reach out, they often struggle to find meaningful assistance.

That's where St. Paul's is looking to move the dial.

"Many people are already in the moderate stages of dementia when we see them. By then, we've lost a lot of time," says Dr. Martha Spencer, head of Geriatric Medicine at St. Paul's.

Dr. Spencer and her team want to create an Early Intervention Memory Clinic (EIMC) to close gaps in care and bolster research into the early stages of cognitive impairment. Looking ahead, she envisions the clinic as an integral part of the Shinozaki Family Centre for

“We want to have people coming to us as early as possible with their memory changes, and to be able to wrap services around them as robustly as possible with a multidisciplinary team.”

– Dr. Martha Spencer

Healthy Aging, slated to open with the new St. Paul's Hospital in 2027.

"We want people to come to us as early as possible," explains Dr. Spencer.

"We can wrap our services around them with a holistic team including physicians, occupational therapists, physiotherapists, and social workers. This way, patients and care partners can learn how to manage their new normal and do what they can to maintain quality of life and stave off further decline."

Caring for caregivers is a unique and absolutely essential part of Dr. Spencer's vision. The overwhelming majority of dementia caregivers are spouses and adult children. With little support or training, they spend some 26 hours a week caring for their loved one, navigating appointments, making medical decisions, and managing daily care. Of course, they're also scrambling to manage their own lives and to assume the tasks their loved one once handled, like finances, grocery shopping and food prep, and household repairs.

It's a lot. People who care for spouses with dementia are at higher risk for developing depression and are even more likely to develop dementia themselves.

For Frances, that threat felt very real. "You're trying so hard to keep track of so many things," she says. "I often feared I had Alzheimer's, too."



Frances Dowdeswell and her late husband, Ian

## EARLY INTERVENTION IS A BEACON OF HOPE

In the early stages of cognitive decline, people often feel angry, hopeless, and even ashamed. People need a safe and welcoming place to turn for education and coping strategies before they reach a point of crisis.

"If you have MCI, there's a 10% to 15% chance you will later develop dementia. We want to work with that early group with an ambitious goal of preventing that," says Dr. Spencer.

The EIMC would see people as soon as they start to notice signs of impairment. It would provide guidance on lifestyle changes to reduce the risk of further decline, such as exercise, diet, and social

connections. And it would offer tools to reduce anxiety, improve sleep, and plan ahead for later stages of the disease.

Early cognitive changes can be subtle and make people question themselves or their partner. Lack of understanding can lead to more arguments. EIMC would help to reduce distress and optimize coping and communication. Care partners would be included in early education.

"We could also reduce vascular risk factors," Dr. Spencer says. "Helping people control their high blood pressure and cholesterol with the right medications at the right dose makes a difference for brain health."

The team's vision also includes

incorporating a robust research program into the clinic. For example, there aren't any approved medications for early cognitive decline. Dr. Spencer wants to change that.

"Our model is unique and, from the get-go, we'll start collecting data to share with other clinics in the province and around the country," she says. "We'll be able to provide virtual resources to patients and caregivers in remote and rural communities across BC. So no matter where you are, you will be able to benefit from this early intervention approach."

## THE SILVER LINING

Ian passed away in 2021. Today, Frances looks back with joy on their life

together. "We were so lucky. We had a lot of magic in our lives." And while she still remembers the frustration they experienced in the early days of Ian's memory loss, she's hopeful.

With the EIMC, families will have tools and strategies to help slow the pace of their disease. Patients and caregivers will feel confident and empowered right from the start. ✦



We met up with Frances and Dr. Spencer to hear more about the vision for the Early Intervention Memory Clinic and what this will mean for British Columbians. Scan the QR code, to give this video a watch.



(L-R) Michelle Carter, clinical nurse specialist at St. Paul's Hospital; Dr. Sandra Lauck, PhD, RN, inaugural holder of the St. Paul's Hospital and Heart & Stroke Professorship in Cardiovascular Nursing; and Kate Davies, speech-language pathologist at St. Paul's



# BRIDGING THE GAP BETWEEN **CARING** AND **CURING**

It's the definition of a game changer. A first-in-Canada research initiative.  
An opportunity to engage and retain our amazing nurses and allied health professionals.  
And another compelling way to involve our patients as partners in care and research.

BY LEAH BJORNSON » PHOTOGRAPHY BY JEFF TOPHAM

**W**hen Angela Steining learned she needed a life-sustaining cardiac procedure, her first thought wasn't about having the treatment. Rather, it was how she could schedule her medical appointments around her active lifestyle. "I said, 'Can we have our call before 10:30? That way I can still ski at 10:30,'" Steining recalls with a laugh.

“CREST won't just encourage new research, it's going to encourage creative, ambitious clinician-scientists to come into the field.”

- Michelle Carter

Her priorities might have raised eyebrows on her health care team, but they wouldn't surprise anyone who has spent even five minutes with Steining. As a grandmother of four and an avid sailor, kayaker, and skier, Steining puts caring for her loved ones and spending time outdoors at the top of her priority list.

But as her procedure approached, Steining was busier than ever. "I really wasn't focusing too much on myself," she says.

That's where the nurses at St. Paul's Hospital stepped in — not only to put Steining first, but to create a compassionate care plan that meshed with her lifestyle. They provided over-the-phone advice when she couldn't come to the hospital and they kept her spirits high during tense moments.

"I received such personalized service. I felt that I was someone of genuine significance," says Steining.

Steining's story is part of a long line of remarkable experiences between patients and nurses at St. Paul's. Indeed, it's fair to say that the hospital's 130-year tradition of nursing leadership continues to attract the best and brightest to its halls.

"Nurses occupy that incredibly vulnerable space between the stretcher and the curtain: in the clinic, in the emergency department, even on the

streets," says Dr. Sandra Lauck, who is both an RN and a PhD. "No one spends more hours with patients and clients than nurses."

Now, in a bold move to leverage the expertise of our nurses, Providence Health Care is creating CREST: the Centre for Research Training for nurses and allied health professionals. CREST is an exciting initiative that will provide training, infrastructure, and funding to support and encourage staff as they advance their clinical and research careers.

Not only will CREST help ambitious nursing and allied health scholars to excel, it promises to narrow the gap from the researcher's bench to the patient's bedside.

## MINING THE UNTAPPED POTENTIAL OF CLINICIAN- SCIENTISTS

As a clinical nurse specialist at St. Paul's, Michelle Carter is already engaged in research to improve patient outcomes. Carter is using her in-hospital experience and her master's degree to improve systems related to reproductive psychiatry.

"I facilitate cognitive behavioural therapy groups with perinatal patients. I help develop new programs for our clinical teams, for example, setting up virtual outpatient clinics during the pandemic. And I collaborate with researchers on a variety of studies," she explains. "No two days are the same, and that's part of why I like it."

Because Carter interacts directly with patients, her work is already bringing valuable patient experiences into her research (which is often done outside of the hospital environment).

Speech-language pathologist Kate Davies says this is the same gap she hopes to bridge. Her research centres on analyzing dementia-related impairments to identify patients' communication challenges and develop solutions.



“A lot of health care research, especially in the early stages of the study, is done by people who may not have direct – or recent – clinical experience,” Davies explains. “So a lot of the treatments they’re working on, while interesting and promising, are extremely difficult for clinicians to actually implement with patients.”

She hopes CREST will support researchers like her who want to improve patient outcomes and health system effectiveness. “CREST will create an environment between a university and a hospital. In other words, a bridge between research and care,” she says.

Carter is similarly optimistic. “CREST won’t just encourage new research, it’s going to encourage creative, ambitious clinician-scientists to come into the field.”

**FILLING THE “MISSING MIDDLE”**

Davies and Carter are among hundreds of nurses and allied health professionals who have undertaken research to improve care for patients, long-term care residents, and families at Providence over the last decade.

“When our nurses walk the halls of St. Paul’s Hospital, they have a strong sense that this is their clinical home. I hope CREST will help them feel like this is also their scientific home.”

– Dr. Sandra Lauck

Of course, research takes time, training, and support. Lauck is confident CREST will provide the resources and unique mentorship for researchers like Davies and Carter to thrive and to remain engaged in the profession.

“This is a really sensitive issue right now because we’re facing a nursing shortage,” says Lauck. “But part of the reason nurses are leaving the profession is because opportunities for professional development, particularly in research, are not always available.” This is what Lauck refers to as the “missing middle.” That is, master’s, PhD, and post-doctoral level professionals who want to further their careers as research-intensive

clinicians, but who don’t currently see a path forward.

With mentorship, collaboration, and support with other research essentials (things like grant writing and teaching), CREST will keep talented professionals engaged and anchored not just at Providence, but within the health care system.

As Lauck says, “We are not trying to take people away from the bedside. We’re trying to create opportunities to bring more people to the bedside.”

**HOME IS WHERE THE SCIENCE IS**

As for Steinger, after her stay at St. Paul’s, she has a renewed appreciation for the unique and irreplaceable role of nurses. And she’s now on a mission to give back as a patient partner in nurse-led research.

“Nurses as researchers make so much sense,” says Steinger. “There are so many things that only nurses do and that only nurses will notice.”

With the advent of CREST and the support of patient partners like Steinger, Lauck sees a very bright future for passionate nursing and allied health researchers – and for patients across British Columbia.

“When our nurses walk the halls of St. Paul’s, they have a strong sense that this is their clinical home. I hope CREST will help them feel like this is also their scientific home.” ♦



We spoke with Sandra Lauck and Kate Davies to see what CREST means for St. Paul’s Hospital, for patients, nurses, and allied health professionals.

Scan the QR code to give this video a watch.



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# A SOFT PLACE TO LAND FOR YOUTH

A kinder, gentler approach for youth with complex medical needs as they “graduate” from pediatrics to adult care

BY MARY FRANCES HILL AND KRIS WALLACE  
PHOTOGRAPHY BY JEFF TOPHAM

**S**ophia Draper was born with a complex heart condition and had the first of her many surgeries while still a baby. She spent her first 18 years under the care of specialists at BC Children’s Hospital, establishing relationships with doctors and nurses at the hospital, as well as friendships through the BC Children’s Heart Network with kids who shared similar medical experiences. The cocoon came to feel like family.

Then she turned 19. And even though her condition would require lifelong treatment, she aged out of the only care she had ever known.

“I had to leave Children’s behind and transfer to the congenital heart clinic at St. Paul’s,” Draper remembers. “At my last appointment at Children’s, everyone gathered to say their goodbyes.” It was an overwhelming experience.

## A LIFELINE FOR HUNDREDS OF YOUTH EACH YEAR

This is a truly significant time in the lives of these young people. Not only are they testing the waters of adulthood with jobs, college, and relationships, they’re also transitioning from the protective world of pediatric care into the adult system.

For many, it can be so intimidating that even something as minor as parking or transit fares can be barriers to care. And with young patients coming to St. Paul’s from across BC, travel can become another roadblock. If it starts to feel overwhelming, there’s a serious risk they’ll skip their appointments, neglect their medications, or pretend their condition is less serious than it is.

But the reality is, the choices these young adults make during this crucial time will define their health and wellness for the rest of their lives.

Enter the Scotiabank Youth Transition Program (SYTP). Founded in 2019, the SYTP provides a safety net – unique in Western Canada – to help newly-minted adults with complex medical conditions begin managing their own health care.

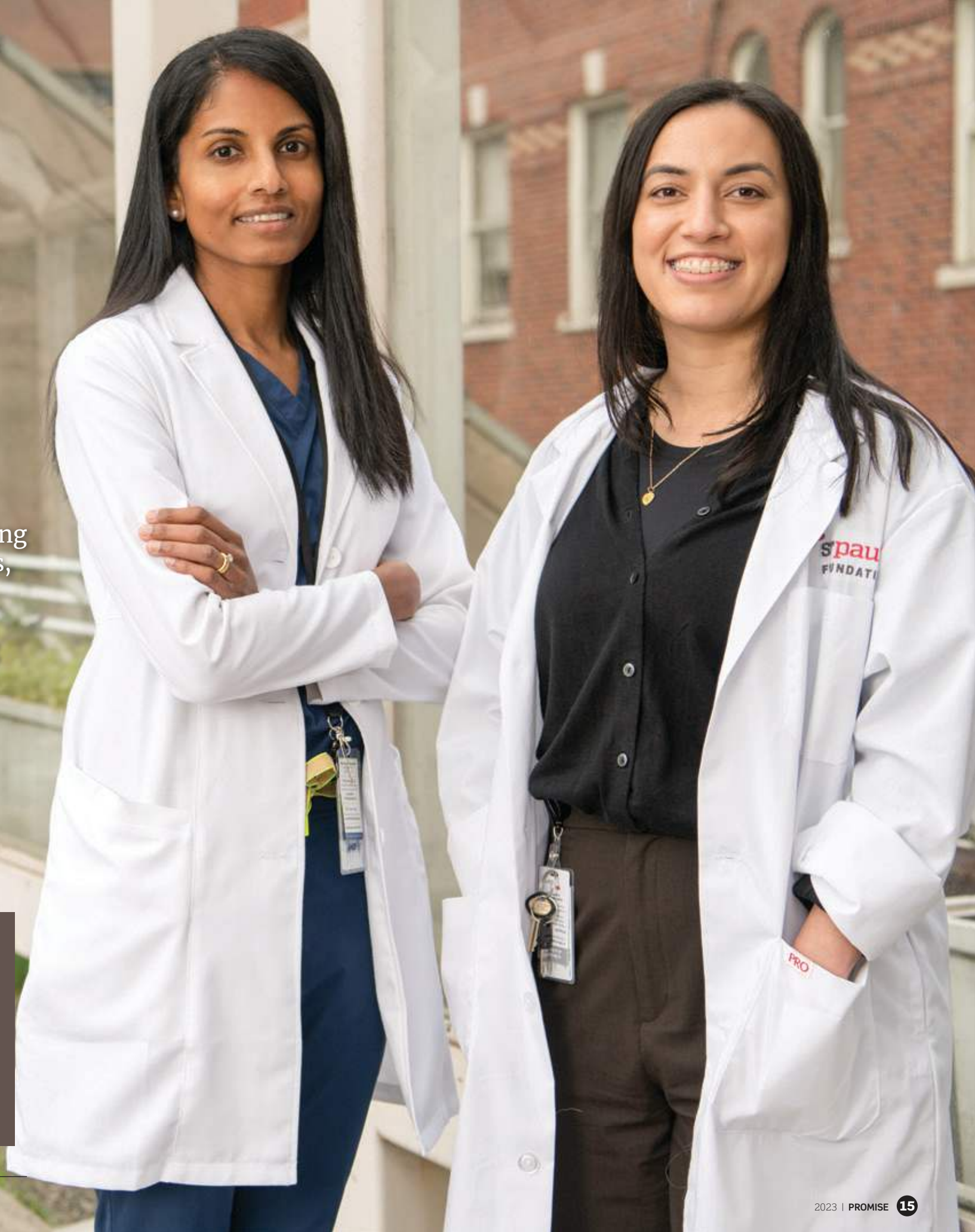
For young people accustomed to the colourful child-centred approach of pediatrics, the adult world can seem cold and even unfeeling.

“Young people transitioning to the adult program can find it an extremely isolating and daunting process; however, both the pediatric and adult care services recognize the importance of making this process seamless and are invested in helping grow the transition program,” says Dr. Gnalini Sathananthan, a congenital

“This is a time in life when they’re developing socially and experiencing transitions related to school and entering adult life as well. Combined with dealing with a chronic illness, it definitely makes it a more vulnerable time for these young patients.”

– Vanessa Lewis

(L-R) Dr. Gnalini Sathananthan, a St. Paul’s congenital heart disease specialist with the Yasmin & Amir Virani Provincial Adult Congenital Heart Program, and Vanessa Lewis, former leader of Program Development of the Scotiabank Youth Transition Program







Dr. Gnalini Sathananthan

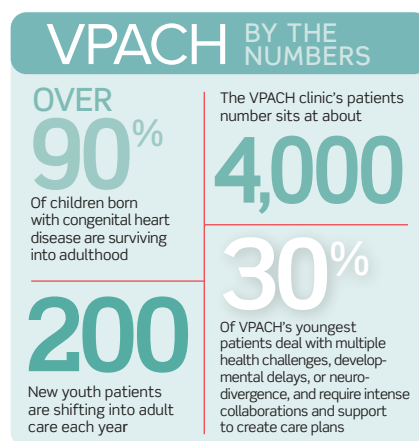
heart specialist with the Yasmin & Amir Virani Provincial Adult Congenital Heart Program (VPACH) at St. Paul's Hospital.

Sixty years ago, fewer than 20% of babies born with congenital heart defects reached adulthood. Today, it's more than 90%. Each year, VPACH adds about 200 new youth patients to its 4,000-patient roster.

The sheer number of patients and their complex needs present the team with some unique challenges.

"Approximately 30% of patients seen in the VPACH clinic have intellectual and developmental disabilities," says Dr. Sathananthan. "Their care requires intense collaboration and multidisciplinary support."

It's not just those with congenital heart disease needing meticulous, personalized care. The same is true for youth with any serious chronic health concern. Thankfully, the SYTP helps empower young adult patients to truly feel like they're supported by their



caregivers, in control of their health, and invested in their own care.

### BUILDING CONFIDENCE WITH COMPASSION

Emma Iacoe, leader of Program Development for the SYTP, with the help of stakeholders, developed five pillars the team uses as their north star. To wit: youths need to feel welcome; they need access to supportive services that

address their physical and emotional well-being; they need to be monitored regularly to gauge how they're feeling and ensure they're following their care plan; and they need to create strong connections with peers going through similar experiences.

Eager to bring this wrap-around care to young people with heart disease across BC, the SYTP is piloting programs in VPACH and the Hemoglobinopathy program at St. Paul's. Once the pilots are complete, the hope is to expand to other programs and clinics at Providence Health Care that have youth transitioning. The team is also hoping it will lead to workshops, a youth-friendly website, handbooks, videos, and social media tools to create an even more robust program.

Dr. Sathananthan stresses that a successful transition into adult care must embrace and start the process early, several years before these adolescents actually transition to adult care. "We've done so much to advance the medicine in congenital heart. The next big step to wellness is providing psychosocial and educational guidance so that these young adults can support themselves through their adult lives."

### SETTING UP FOR SUCCESS

What does a successful transition from pediatric to adult care look like?


The SYTP leaders have developed a framework to set up their new patients for success from the get-go. Of course, patients' conditions are monitored and treated, but they are also provided with a network of resources to learn about self-management until they're ready to take on the mantle of their ongoing care.

Draper, who's now a graduate student in speech and language pathology at McGill University, recalls her early days at St. Paul's as a time of growth. "I had to learn a lot in a short time! I'm glad I didn't have to do it alone." ♦



We spoke with Dr. Sathananthan and Vanessa Lewis about their hopes for the program. To watch this video, scan the QR code.



A photograph of three women walking away from the camera on a wide, paved city sidewalk. The woman on the left is wearing a long tan coat over a black turtleneck and dark pants. The woman in the middle is wearing a dark blue double-breasted jacket over a black turtleneck and light-colored trousers. The woman on the right is wearing a dark coat over a black turtleneck and light-colored trousers, with a grey scarf. They are all smiling and looking towards the camera. In the background, there are modern buildings, including one with a glass facade and another with a blue facade. The scene is brightly lit, suggesting a sunny day.

Dr. Raymond Mak, clinical instructor, Immunology and a physician at MedSafe; Dr. Shazhan Amed, a MedSafe Clinic patient and a survivor of a severe adverse drug reaction; and Dr. Sheila Au, former division head of Dermatology at St. Paul's Hospital and a physician at MedSafe

# IT'S A DEADLY ALLERGY, BUT TO MEDICINE. YOU DON'T KNOW YOU HAVE IT UNTIL IT'S TOO LATE

Imagine you get a prescription for a new medication. You take it exactly as directed. You are quickly engulfed in a rapidly-escalating health emergency. Severe adverse drug reactions (ADRs) happen to more than 200,000 Canadians each year. A small team at St. Paul's Hospital is leading a mission to help people cope with the devastating damage ADRs can leave behind and to identify those most at risk.

BY MICHELLE HOPKINS AND KRIS WALLACE  
PHOTOGRAPHY BY DAVID TAM – THE COCONUT CREATIVE





While still in her 20s, Dr. Shazhan Amed was diagnosed with a rare autoimmune disorder that causes excessive bruising and bleeding. In 2019, to ease the complications of her condition, Dr. Amed had her spleen removed. That's when everything went sideways.

"After the operation, I ran a high fever and was put on antibiotics," she says.

As a pediatric endocrinologist and an investigator with BC Children's Hospital Research Institute, Dr. Amed was no stranger to prescription medicines and their potential side effects. Still, she was caught off guard when she developed an aggressive rash that quickly began

to blister the skin all over her body, even in her eyes.

Dr. Amed was having a toxic reaction to the new antibiotic. "Within two days, I was admitted to the burn unit at St. Paul's. I was there for a full month, in excruciating pain." She lost both her corneas and suffered extensive damage across much of her body that still affects her today.

"I know how fortunate I am," she says, her voice filled with gratitude. "My skin grew back and my vision returned. And with the help of my family, my community, and the MedSafe Clinic at St. Paul's Hospital, I found my way back to my life."

### NO ORDINARY ALLERGY. NO ORDINARY CLINIC.

Chances are, you don't think twice when you fill a prescription or take an over-the-counter pain reliever. After all, most drugs are safe and effective. But, for some of us, taking a new medication can cause severe, often lethal, complications.

ADRs from medications taken as directed are the fourth leading cause of death in Canada. Like Dr. Amed, most people don't know they're at risk until they're in crisis. With the clock ticking, doctors must scramble to identify the root cause of the reaction and to stop the patient's cascading symptoms.

The MedSafe Clinic is the first of its kind in Canada specifically caring for people who've survived severe skin-related ADRs. They're offering patients a unique model of care that provides access to an interdisciplinary team of specialists from allergy, immunology, dermatology, and clinical pharmacology.

Dr. Raymond Mak launched the clinic in partnership with the Department of Dermatology at St. Paul's.

As an allergist with a special interest in drug allergies, Dr. Mak saw many patients coping with the disabling after-effects of a severe ADR. He explains that surviving such an ADR

“Patients come to us with permanent skin, hair, and organ damage, with blindness, memory and brain impairment, loss of their sexual health, and very often with mental health issues and PTSD.”

- Dr. Raymond Mak

is typically just the beginning of a lifelong process of recovery. People are often left with catastrophic damage to their organs and their body's mucous membranes including eyes, mouth, lungs, and genitals.

"Patients come to us with permanent skin, hair, and organ damage, with blindness, memory and brain impairment, loss of their sexual health, and very often with mental health issues and PTSD," he says.

In addition to providing comprehensive post-crisis care in the clinic – often on their own time – the team shares an overarching goal to research and develop testing protocols to identify people at risk of ADRs.

According to Dr. Mak, if Dr. Amed had been tested, "she would not have been given that prescription. And her frightening ordeal would never have happened."

Dr. Sheila Au, former division head of Dermatology at St. Paul's, is another

key member of the MedSafe team. She shares Dr. Mak's drive and compassion.

"Our goal is to prevent ADRs and eliminate the terrifying fear and trauma that come with them," she says. "When our team found compelling evidence that severe skin-related reactions could be prevented with testing, we moved quickly to put those findings into practice." The clinic now provides a variety of tests, including genetic testing, to patients and their families to identify the drugs most likely to cause dire reactions.

This points to another unique aspect of MedSafe's holistic, patient-centric approach: inter-hospital collaboration. The MedSafe team works closely with BC Children's Hospital to provide the highly-specialized genetic tests needed to assess severe skin reactions. Dr. Mak singles out Dr. Bruce Carleton as a "truly vital bridge" between research and patient care.

### PROVINCE-WIDE PEACE OF MIND

In the same way that blue eyes or an increased risk of heart disease can run in families, so can the risk of a severe ADR. Prevention can be almost guaranteed with widespread testing.

That core belief underpins MedSafe's ambitious vision to expand the scope of their work. "We know that testing is effective. We want to create a province-wide infrastructure so all British Columbians have access to critical drug allergy tests," says Dr. Au.

It's remarkable that this grassroots project, started a scant two years ago by a group of physicians working mostly on their own time, is already scaling up. But this is Providence Health Care: innovation and compassion are the double helix of our DNA. ♦



We spoke with Drs. Au, Mak, and Amed about the MedSafe team's relentless pursuit of accurate, accessible testing to eliminate the lifelong trauma of adverse drug reactions. Scan the QR code to watch the video.





## MAKE AN IMPACT FOR GENERATIONS. LEAVE A LEGACY GIFT.

**JOHN AND EVELYN BELL** personified positivity and fun. From their first meeting aboard a steamship, they spent the next 70 years embracing family, friendship, and community. After marrying at Christ Church Cathedral in Vancouver, they raised two boys and a few dogs while enjoying everything from weekend camping trips to worldwide expeditions. They even became champion lawn bowlers! Truly, their time together was extraordinary.

After long lives, very well lived, their adventures in travel, lawn bowling, volunteerism, and general good cheer ended in 2021 when John and Evelyn passed away within two months of each other. Today, their legacy lives on through their family and through the generous gifts they left in their wills to both St. Paul's Hospital and another local hospital.

A gift in your will to St. Paul's Foundation of Vancouver is the gift of a lifetime. It's a legacy for the future that will stand as a meaningful tribute to the things that matter most to you: to live with purpose, to give back, and to make a difference – just as John and Evelyn did.



### I WANT TO HELP CHANGE LIVES. TELL ME MORE.

Scan the QR code or contact Karen Brown, Director, Estate Giving at 604-806-8271 or [kbrown@providencehealth.bc.ca](mailto:kbrown@providencehealth.bc.ca) for more information.

# A EUREKA MOMENT IN THE FIGHT AGAINST BREAST CANCER

An innovative new device, quickly approved by the Providence Breast Centre, is speeding up treatment, reducing pain, and improving outcomes. Not bad for a magnet the size of a sesame seed!

BY MICHELLE HOPKINS AND KRIS WALLACE » PHOTOGRAPHY BY JEFF TOPHAM



(L-R) Dr. Rebecca Warburton, head of Providence Breast Centre (PBC) at Mount Saint Joseph Hospital; breast cancer survivor, Kathy Deyell; and Dr. Amy Bazzarelli, general surgeon, breast surgical oncologist, PBC



**K**athy Deyell spent three years caring for her elderly mother. Tired and busy, it never occurred to her that something might be wrong inside her own body.

“While I was caring for mom, I didn’t take the time to care for myself,” says Deyell. “Before I knew it, I was three years behind on my mammogram.”

In 2021, she finally went for a screening mammogram. A follow-up ultrasound and biopsy confirmed her worst fear: she had stage one breast cancer. Her GP explained that surgery would be her best option and she referred Deyell to Dr. Amy Bazzarelli with the Providence Breast Centre (PBC) at Mount Saint Joseph Hospital.

“Dr. Bazzarelli gave me two options,” recalls Deyell. “I could have a guide wire inserted or take part in a trial for the Breast Centre Seed Localization Program [using the MOLLI system].”

The Breast Centre Seed Localization Program (BCSLP) is the “eureka moment” – or rather, the eureka magnet – that helps surgeons more easily locate and remove cancerous tumours.

Deyell jumped at the chance to participate and became PBC’s 12th

“Before this technology, radiologists could only perform five wire insertions a day. But, with the seeds, there are no limitations on the number of localization procedures that can happen in a day. Everything is so much more efficient now.”

– Dr. Rebecca Warburton

BCSLP patient. Ten days before her surgery, she had a tiny magnet placed deep into her breast to mark the tumour site.

“It was easy and painless,” Deyell says. “No worse than a minor dental procedure.”



Kathy Deyell and  
Dr. Amy Bazzarelli

## KINDER. GENTLER. MORE ACCURATE.

MOLLI stands for Magnetic Occult Lesion Localization and Imaging. It’s a long name for a simple-yet-sophisticated innovation pioneered at Toronto’s Sunnybrook Health Sciences Centre.

Tumours deep in the breast tissue, and those that aren’t palpable, can be hard for surgeons to find and fully remove.

“Before BCSLP, a radiologist would place a wire into the breast,” Dr. Rebecca Warburton, head of PBC, explains. “The surgeon would then follow the wire to the tumour.”

Unfortunately, the wires would often move around. “Obviously, that’s painful for the patient. It’s also much more difficult for the surgeon to pinpoint the lesion,” says Dr. Warburton.

With MOLLI, the radiologist uses a mammogram or ultrasound to guide a small needle to the tumour to implant the magnetic seed. Unlike a wire, which needs to be placed in the

patient the day of the surgery, the seed can be put in place up to 30 days before, streamlining the process significantly.

Once in the OR, the surgeon uses a wand that functions exactly like a handheld metal detector. The wand picks up the magnetic signal from the seed, and sends images and sounds to a screen or tablet that guides the surgeon to the tumour’s exact location. The cancerous tissue, the margins around it, and the seed itself are then removed safely and precisely.

Dr. Bazzarelli and the PBC team studied MOLLI extensively before the pilot and they were confident that it would vastly improve patient care. “And that’s exactly what happened,” Dr. Bazzarelli says.

## WIN, WIN

BCSLP offers so many advantages over the old wire system that it’s fast becoming the new gold standard in care.

“Patients who’ve had both wires and magnetic seeds tell us that their overall care and experience is significantly better with the seeds,” says Dr. Bazzarelli. “There’s less discomfort, much less angst, and there’s less time waiting for their OR to start because they don’t need to have the seeds placed on the same date.”

Dr. Warburton is equally enthusiastic. “Before this technology, radiologists could only perform five wire insertions a day. But, with the seeds, there are no limitations on the number of localization procedures that can happen in a day. Everything is so much more efficient now.”

MOLLI has also proven to be more accurate in directing surgeons to the exact location of a tumour. You don’t have to have cancer to appreciate the relief and peace of mind this news brings to patients and their families.

## HEALING WITH INNOVATION AND COMPASSION

The MOLLI pilot was fully funded by our generous donors and it’s a powerful example of how donor support directly improves patient care.

“We’re proud of our track record and we’re beyond appreciative to the donors who make it possible to bring innovation and compassion to patient care,” says Dr. Bazzarelli.

Deyell is equally grateful. “I’m so thankful I got to participate in the MOLLI study. I felt like I was more than a patient. I was part of the solution!”

These leading-edge innovations will become even more possible with the new Clinical Support and Research Centre (CSRC). Connected to the new St. Paul’s Hospital on the Jim Pattison Medical Campus by sky bridge, the CSRC will expedite collaboration between patients, researchers, clinicians, and industry partners. And it’s these interactions that will spark a transformative circle of research, discovery, and treatment, and lead to the next century of compassionate care.

## REDUCING RISK FOR FUTURE PATIENTS

Now that the BCSLP is fully funded, the PBC team is shifting their focus to women with a genetic disposition for breast cancer who haven’t been diagnosed – yet.

These women have a 70% chance of developing breast cancer and could benefit from receiving a risk reduction mastectomy with the option of reconstruction, before cancer develops. These measures can improve quality of life, prevent the need for therapy, and possibly save lives. To take this essential next step, PBC needs a registered nurse whose complete focus will be on helping these patients. ♦



We spoke with Dr. Bazzarelli, Dr. Warburton, and Kathy Deyell to learn more about compassionate care at the PBC and the exciting developments still to come. To watch this video and see just how small the magnet is, scan the QR code.

## PROVIDENCE BREAST CENTRE



The provincial referral centre for BC’s **MOST COMPLEX** breast cancer cases



The PBC team does the most breast cancer and breast reconstruction surgeries in BC and **SECOND MOST** in Canada



The team sees **5,500** patients per year



The team performs around **600** surgeries a year



· FOUNDRY ·

# Removing barriers

## BUILDING FUTURES

“To watch a young person open up and take more action toward a healthier and happier self is always encouraging to our team of service providers.”

- Stasa, Foundry Virtual BC's clinical coordinator



To learn more about Foundry and how it's transforming health care for youth across BC, scan the QR code.