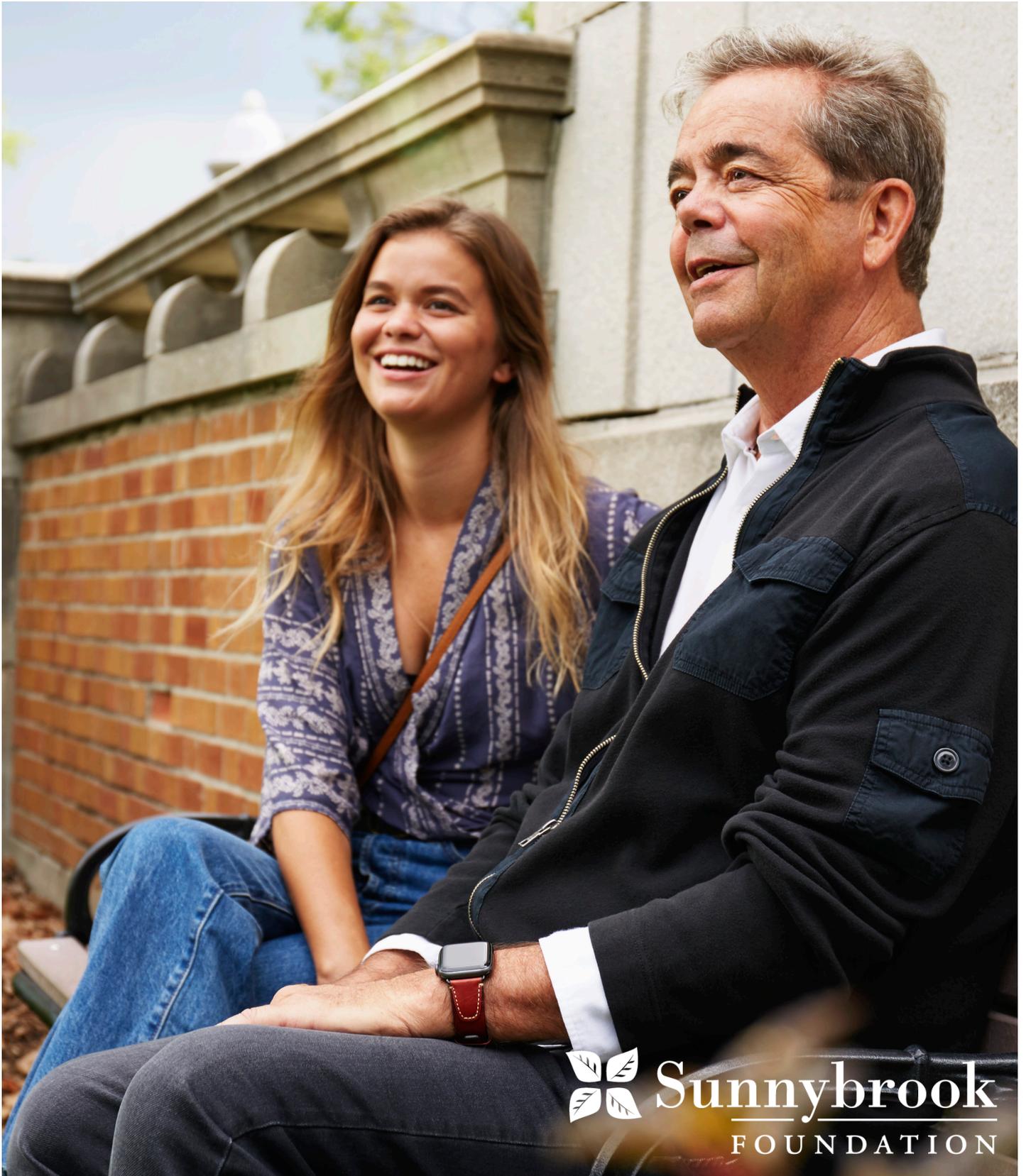


YOUR IMPACT

SCHULICH HEART PROGRAM



Sunnybrook
FOUNDATION

WINTER 2021

**Every one of us
Envisions a future.
It might start as a wish. A hope.
That things will be better tomorrow.
That something extraordinary will come.
That one day we might triumph
Over the obstacles in our way.**

**And then it happens.
The extraordinary arrives.
A breakthrough that changes everything.
Visionaries who help us make
What seemed impossible yesterday
Only a matter of time.**

**Every one of us
Envisions a future.
And thanks to your generosity
The future is here.**

What's Inside

05

*A message from
Dr. Bradley Strauss*

07

*On the front lines of
the pandemic*

08

*Innovation in
minimally invasive
devices*

10

*A roadmap
into the heart*

12

*Changing practice
and patient outcomes*

13

*Medventions scales up
its innovation model*

15

*Donor-supported
database accelerates
vascular research*

16

*Advances in care
for type B aortic
dissections*

18

*Celebrating
Dr. Bradley Strauss*

On the cover: Jim Ruse sits with his daughter Hannah at Sunnybrook. The cardiac ablation he received at the Schulich Heart Program changed his life. Read more on page 9.



Dr. Bradley Strauss and Dr. Harindra Wijeyesundera perform an angioplasty. Right: Dr. Harindra Wijeyesundera.

While I did not imagine my second and final five-year term as Chief of the Schulich Heart Program would come to a close amid a global pandemic, I am proud to share several highlights from 2020 and to reflect back on the past decade.

Our program has had the unique opportunity to influence the scope and delivery of care at a world-class institution, thanks in large part to donor support. With a team of extremely talented physicians, nurses, allied health workers, hospital administrative staff and more, we built a globally recognized program. We share all our achievements with you.

When I started in this position in the summer of 2010, I had several important objectives. I wanted to develop an international centre of cardiac innovation that provided leading-edge therapies, but always in an environment that valued kind, compassionate care. I wanted to renew parts of our infrastructure. I wanted to expand our staff with the brightest minds and most capable physicians. I think you'll agree that we delivered on these objectives and more.

We have renewed three catheterization laboratories, our coronary intensive care unit, short stay unit, non-invasive echocardiography laboratory, non-invasive arterial ultrasound-doppler laboratory and cardiovascular seminar room. Our research in cardiac imaging with cardiac MRI and health outcomes is closely linked to our clinical program activities.

Our researchers were sought to guide decision-making with the provincial government when the pandemic first hit.

These efforts would not be possible without the incredibly generous support of donors like you. You have made our dreams into reality, and many patients owe their lives to your support.

I will continue in my role as Reichmann Chair of Cardiovascular Research. I hope you will join me in welcoming our new Chief, Dr. Harindra Wijeyesundera. He began his career at Sunnybrook in 2008 as staff in the Department of Medicine. He has since established himself as an expert in the field of cardiology, evidenced by national and international awards, successful peer-reviewed funding, a high degree of research productivity, and leadership roles in research and health policy. He is also a prolific researcher, having published more than 200 peer-reviewed journal articles. I look forward to seeing the program thrive under his leadership.

On behalf of the Schulich Heart Program and our patients, thank you for your support.

A handwritten signature in black ink that reads 'Bradley Strauss'.

Bradley Strauss, MD, PhD

The Schulich Heart Program at Sunnybrook is a place of extraordinary promise. Within our walls and at the hands of our gifted health-care providers and researchers, we are inventing the future of cardiac care for Ontario and beyond. We couldn't do it without you. Thank you.



Spotlight on: transcatheter aortic valve implants (TAVI)

300-325
TAVIs
performed
each year

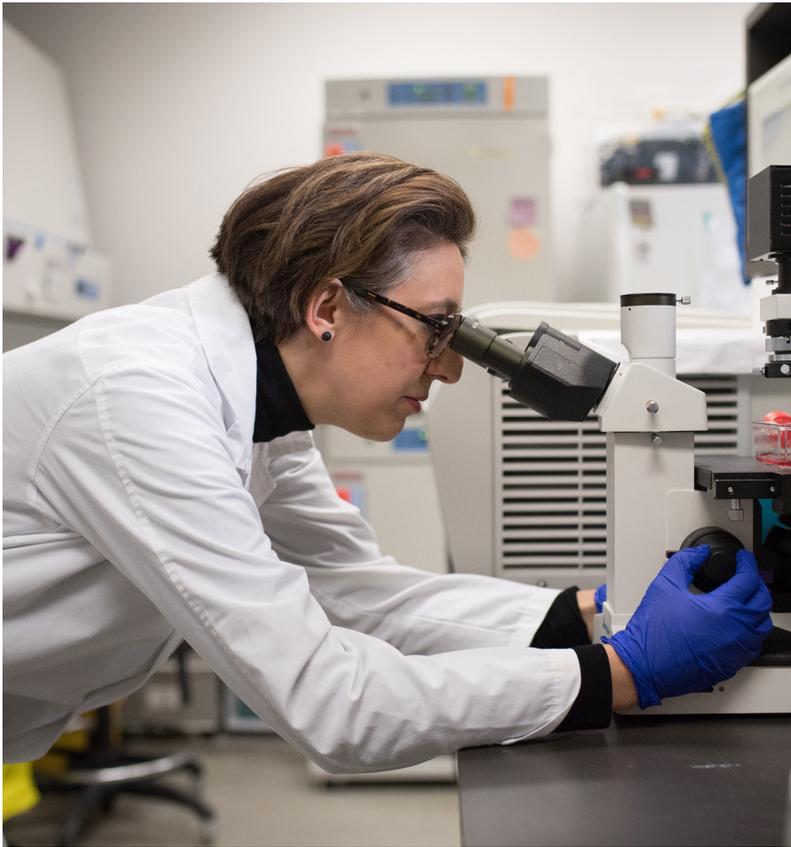
285
TAVIs
provincially
funded in 2020

120
TAVIs
performed
between
May and
September 2020

“This is all the result of the steady generosity of Sunnybrook Foundation donors. Thank you.”

- Dr. Sheldon Singh, who celebrated the news that Sunnybrook received government funding to implant 20 Watchman devices in patients with atrial fibrillation who can't take blood thinners. The treatment was previously only available to patients through donor support.

Read more on page 8.



Dr. Samira Mubareka.

ON THE FRONT LINES OF THE PANDEMIC

On March 10, 2020, Sunnybrook microbiologists Dr. Samira Mubareka and Dr. Robert Kozak were part of the team that isolated severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the agent responsible for COVID-19. The isolated virus will help researchers around the world develop better diagnostic testing, treatments and vaccines. The globally significant discovery has also inspired other research, including five new studies at the Schulich Heart Program. Each of the projects, including two highlighted here, was awarded a \$15,000 seed grant.

Long-term impact on the heart

Between 12 and 20 per cent of the patients hospitalized with COVID-19 at Sunnybrook showed some cardiac involvement, but it's not

known how those complications resolve over time or if it affects the heart muscle for the long term.

This startling finding led Dr. Idan Roifman, a staff cardiologist who oversees the Schulich Heart Program's echocardiography lab, to launch a timely new study exploring patient outcomes over time. Supported by the Schulich Heart Program and a \$100,000 Sunnybrook Research Institute grant, Dr. Roifman plans to follow Sunnybrook patients who were diagnosed with COVID-19 and some degree of cardiac abnormality, ranging from higher than average cardiac enzyme levels in the blood with no overt symptoms to myocarditis — a dramatic inflammation of the heart muscle. Heart health will be tracked for six months using magnetic resonance imaging (MRI). The project began this past summer.

Shielding patients and staff

Technicians in the echocardiography lab have spent the past several months testing a shield custom-designed to protect patients and staff during the pandemic.

Made of a polycarbonate material, the shield is mounted on an IV pole so it can be raised and lowered to fit over the neck and face of patients undergoing an echocardiogram (ECHO), a diagnostic test that uses high-frequency sound waves to take pictures of the heart muscle and valves. Patients lie on their backs during the test while the technician moves the ECHO probe over the upper chest.

“We were concerned about the close contact between patients and techs,” says Dr. Strauss, who co-led the design of the shield with a local company. The prototype was unveiled this past spring, trialled in the ECHO lab and fine-tuned with staff and patient feedback. The final product is expected to be ready for delivery shortly. The shield may also have applications to other viruses, including influenza. Dr. Strauss eventually hopes to make the technology available across Sunnybrook.



A close-up of the transcatheter aortic valve implant (TAVI).

MINIMALLY INVASIVE, LIFE-SAVING CARE

Innovative devices and research at the Schulich Heart Program

Donor investment continues to power much of Sunnybrook's pioneering research into minimally invasive cardiac care for patients who have no other treatment options. By proving what's possible with philanthropic support, we're opening the door to government funding for innovative devices that can treat the heart and damaged blood vessels without the need for open-heart surgery.

Donor support leverages government funding for Watchman device

A donor-funded device used by Sunnybrook to reduce stroke risk in patients with atrial fibrillation and who can't take blood thinners has just been approved for Ministry of Health funding.

The Schulich Heart Program was the first in Ontario and the second in Canada to use the latest Watchman device to seal the opening of a pouch near the heart,

where blood clots can develop in patients with an irregular heartbeat. If left untreated, the clots can enter the bloodstream, travel to the brain and cause a stroke. With the Watchman, the patient's risk of stroke is reduced by at least two-thirds.

In the five years since Sunnybrook first introduced the minimally invasive treatment, approximately 40 patients have received the device — all thanks to donor support.

The Ministry of Health announced in March 2020 their decision to fund 20 Watchman cases at Sunnybrook. Six Ontario centres in total were approved to deliver the Watchman device in 2020.

"It's been a long time coming," says cardiac electrophysiologist Dr. Sheldon Singh. "The Ministry wanted to know that we have a systematic approach to screening and preparing patients, completing the procedure safely, and some long-term follow-up."

The Schulich Heart Program's five-year record of success "was only possible because of philanthropic support," says Dr. Singh.

That track record also allowed the program to shine in the eyes of industry experts.

The Schulich Heart Program was recently selected as one of three Canadian centres to participate in a clinical trial evaluating the Watchman technology.

Sunnybrook is also one of a few Canadian centres being considered to participate in a pivotal global trial evaluating the Watchman against blood thinners in the general population with atrial fibrillation.

Set to launch in 2021, the U.S.-run trial will involve patients who have received ablation to treat atrial fibrillation. Researchers will compare the outcomes of those who take blood thinners to those who receive the Watchman device.

Says Dr. Singh: "This is all the result of the steady generosity of Sunnybrook Foundation donors."

Two trials testing new valve devices

Building on nearly a decade of mitral valve repairs using a device called the MitraClip, Sunnybrook has been selected to participate in two clinical trials evaluating the safety and effectiveness of other heart valve devices.

In the first trial, called Summit, Sunnybrook's interventional cardiology team will assess the Tendyne device designed to treat mitral regurgitation, the leakage of blood backward into the left atrium of the heart. Where the MitraClip is used to repair the leaky mitral valve separating the left heart chambers, the Tendyne completely replaces it. If left untreated, mitral regurgitation can cause life-threatening fluid build-up in the lungs, atrial fibrillation or even heart failure.

“When the valve is too damaged to be repaired with the MitraClip device, a replacement is the only option,” explains Dr. Andrew Czarnecki, Sunnybrook's co-lead for the Summit trial, which involves more than 1,000 patients at 80 sites across Canada, the U.S. and Europe. “The Tendyne device has the potential to revolutionize care for people with complex mitral valve disease — the kinds of patients we often see at Sunnybrook.”

Dr. Czarnecki is also leading the clinical trial involving the TriClip, a device developed by the makers of the MitraClip for tricuspid valve disease. Much like the mitral valve connecting the left chambers of the heart, the tricuspid valve links the two right heart chambers. When it doesn't close properly, it can cause right-sided heart failure characterized by extreme fatigue, swelling and shortness of breath. Sunnybrook has been adapting the MitraClip to treat tricuspid valve disease for approximately four years, but its application for this purpose is not funded by the Ontario government. The patients treated to date have been supported by philanthropy. “This innovative approach has offered hope for a better quality of life,” says Dr. Czarnecki.

“Thanks to Sunnybrook donors, we've been able to offer compassionate care for this group for a number of years and with great success,” says Dr. Czarnecki. “We hope this will be the definitive study to demonstrate its utility and make the case to the Ministry for support.”

Schulich research fuels calls for government to expand TAVI program

With philanthropic support, Sunnybrook launched its transcatheter aortic valve implantation (TAVI) program in 2009. Traditionally offered to patients who could not withstand open-heart surgery, the procedure repairs the aortic valve by threading a replacement valve through an artery in the leg using a catheter. Once deployed, the TAVI opens the narrowed aortic valve. The impacts — on breathing, chest pain and dizziness — are often immediate.

After demonstrating the benefits of TAVI on moderate-risk patients, Schulich Heart Program researchers are leading the charge to expand the program to low-risk patients.

Dr. Stephen Fremes, Dr. Sam Radhakrishnan and Dr. Harindra Wijeyesundera published the results of the SURTAVI (Surgical Replacement and Transcatheter Aortic Valve Implantation) trial involving moderate-risk patients in the *New England Journal of Medicine* in May 2019. Sunnybrook was the main Canadian contributor to the trial, which showed TAVI is “non-inferior,” meaning it offers outcomes equal to surgery in this patient population at 12 months and 24 months post-procedure. The researchers plan to continue following this patient cohort for up to 10 years. A second Sunnybrook-led study, involving nearly 1,500 lower-risk patients, also supported the use of TAVI in that patient population.

Dr. Fremes is now participating in a provincial review to determine whether the Ontario government will consider expanding the government-funded TAVI program to include low-risk patients. The Ontario government has currently agreed to fund 285 Sunnybrook TAVI procedures involving moderate-risk patients. “We're optimistic that our research findings will help contribute to a positive decision for the low-risk patient population,” says Dr. Fremes.

The team completed 130 TAVI procedures between May and September 2020 alone, toward a strategic goal of performing 325 procedures in 2020. With donor support, and based on need, the team estimates they will perform upward of 375 procedures in 2021.

A ROADMAP INTO THE HEART

Three-dimensional mapping is increasing precision during arrhythmia treatments

“It’s very similar to video games: You’re operating in virtual reality. It’s a reconstruction built from imaging and from tracing equipment and from pieces of images from ultrasounds.”

- Dr. Eugene Crystal



Dr. Eugene Crystal.

An avid cyclist, John Murray figured his heart could handle anything. But when the 68-year-old’s heart rate suddenly spiked during a workout, he began to worry. A visit to his family doctor led John to Sunnybrook, where Dr. Eugene Crystal, a cardiac electrophysiologist, diagnosed him with an arrhythmia, meaning part of his heart’s electrical grid was malfunctioning.

John needed a cardiac intervention – and fast. “We don’t fool around with the heart,” Dr. Crystal told him. John had two treatment options: long-term medication or cardiac ablation. He opted to have Dr. Crystal map his heart and burn certain tissues to help block the stray electrical signals causing his abnormal heart rhythm.

Cardiac ablations are traditionally performed using catheters, electrodes and X-rays to identify and isolate the affected areas of the heart, but the advent of leading-edge technologies like three-dimensional mapping are changing how electrophysiologists operate.

Sunnybrook is one of the leading hospitals in Canada to use three-dimensional mapping during these procedures, which results in reduced exposure to potentially harmful radiation, greater precision during the procedure and fewer complications.

It’s a system Dr. Crystal compares to GPS and signal triangulation, methods used to pinpoint the location of a cellphone user. “You move a wire around the heart and it records electrical points,” explains Director of Arrhythmia Services Dr. Benedict Glover.

“We can recreate the inside structure of one of the chambers of the heart within about 15 minutes and record about 20,000 electrical points.”

As the heart’s electrical information is mapped by the diagnostic catheter, the heart’s pulses are displayed on a screen in a 3D model, allowing doctors to see any abnormalities. Then, another catheter with a specialized tip that emits heat is used to target the abnormal tissue and create tiny scars to block the electrical signals that cause the arrhythmia.



Dr. Benedict Glover speaks with Jim and his daughter Hannah.

Two years and two ablations later and John’s heart is now humming along at regular levels. He’s back on his bike and working out at the gym with short bursts of high-intensity exercise that give his heart time to rest and recover. “I feel fitter today than I did when I was 20,” he says.

“Extraordinary” results after ablation

We’d like to shine the spotlight on another patient who benefited from the team’s expertise. When Jim Ruse and his wife Anke returned home from vacation in February 2018, Jim’s poor health was unusual. His condition worsened to the point where he couldn’t climb stairs. That’s when Anke rushed her typically robust husband to the local emergency room.

Jim was diagnosed with rapid atrial fibrillation, an irregular heart rate that occurs when the two upper chambers of the heart experience chaotic electrical signals. He was told he’d need a lifelong regimen of medication to control the atrial fibrillation and get back to “a normal life.”

But Jim’s life was far from normal.

“He was feeling the side effects of the medications, and his quality of life took a great dive,” says Anke.

After some research, Anke pressed Jim’s doctor to consider cardiac ablation. Jim was referred to Dr. Glover. Anke didn’t know it then, but when she reflects back she realizes at that moment the “stars aligned” when her family met Dr. Glover.

Dr. Glover treated Jim with cardiac ablation and the results were “extraordinary,” says Anke.

“Jim returned to his former self and we crawled out of darkness, depression and despair,” says Anke, whose joy was shared by their children Jonathan, Byron and Hannah.

Plans are in motion to expand Sunnybrook’s electrophysiology lab to transform the lives of more patients like Jim.

With generous donor support, we plan to renovate the current lab space to enhance its state-of-the-art abilities and transform an existing space next door into a second treatment room to accommodate growing demand for care.

CHANGING PRACTICE

From coronary artery bypass surgery to a new smartphone app for angioplasty patients, researchers are exploring new ways of improving lives

Patients who undergo a coronary bypass or angioplasty to treat completely blocked arteries experience a 28- to 38-per-cent reduction in mortality and lower rates of hospitalization after 10 years than those treated with medication alone.

This finding is part of an ongoing study co-led by Dr. Strauss and Dr. Graham Wright, a medical biophysicist and director of the Schulich Heart Research Program to explore treatment and outcomes of hard-to-treat plaques.

Using data from 1,600 patients treated at Sunnybrook, St. Michael's Hospital in Toronto and Foothills Hospital in Calgary, Drs. Strauss and Wright tracked patient outcomes over a 10-year period. All the participating patients experienced total occlusion, meaning at least one artery leading to the heart was completely blocked with plaque lesions. Half were treated with coronary bypass or angioplasty. The balance managed their symptoms with medication.

“We found that those who underwent some form of revascularization did much better than patients who were treated with medication only,” reports Dr. Strauss.

The potentially practice-changing findings are pending publication in a high-profile journal.

Trial compares outcomes of two common coronary grafts

Close to 1,900 patients are now enrolled in Sunnybrook's seven-year, \$5.3-million international trial comparing two methods of coronary artery bypass grafting (CABG).

CABG is designed to improve blood flow to the heart in patients with a build-up of plaque in their coronary arteries. An estimated one million people undergo the procedure annually worldwide.

Cardiovascular surgeon Dr. Stephen Fremes, the Dr. Bernard S. Goldman Chair in Cardiovascular Surgery at Sunnybrook, and Dr. Mario Gaudino of Weill Cornell Medicine in New York City were awarded the Canadian Institutes of Health Research (CIHR) grant in January 2019 after a pilot study showed that radial artery grafts resulted in fewer blockages. **Patients who were treated for coronary heart disease using grafts involving an artery from the arm were 40 to 50 per cent less likely to experience a blockage in the first seven years after the surgery than those who had a graft using a vein from the leg.**

The researchers are now expanding on this groundbreaking pilot study with a multicentre trial involving 4,300 patients under the age of 70. “We’ve enrolled about 40 per cent of our target patient population to date,” says Dr. Fremes. Recruitment had reduced substantially since March 2020 as a result of the COVID-19 pandemic, but has since resumed in many centres, including Sunnybrook.

A random sub-group of 2,000 patients in the study are also participating in a second study led by Dr. Fremes to explore the impact of the procedure on patients' quality of life for up to five years following surgery. Cardiac patients typically report a decline in their quality of life immediately following surgery and then a rebound at three to 12 months post-surgery to levels even higher than before their treatment. Says Dr. Fremes: “Our goal is to test this hypothesis to help inform post-surgical care.”

New patient care application poised for expansion

A web-based application designed to track information on discharged angioplasty patients is the focus of a new grant application to help patients change behaviours and improve health outcomes.

Dr. Strauss collaborated with the MyChart eHealth service at Sunnybrook (the hospital's service for accessing and sharing health record information) to develop the technology in 2019.

Using web access on a patient's computer, tablet or smartphone, the application sends out a series of questions to patients who underwent a percutaneous coronary intervention (PCI), but have since been discharged from the hospital. Known as "angioplasty with a stent," PCI is a non-surgical procedure that uses a catheter to deploy a stent to open up blood vessels in the heart that have been narrowed by plaque. Sunnybrook performs approximately 1,900 of the potentially life-saving procedures each year.

The technology enables the Schulich Heart Program team to conduct virtual follow-up appointments with PCI patients at regular intervals to assess for complications, medication compliance, relief of symptoms and clinical improvements.

After a pilot project involving 110 patients confirmed the potential of the technology, Dr. Strauss is planning to develop and test an expanded version of the application in a larger multicentre clinical trial.

"The next phase will include opportunities for increased communication between health providers and patients based on the patients' responses to the questionnaire," Dr. Strauss explains. "We'd like to be able to use the application to send reminders to the patients about behaviours that could impact their recovery and long-term health."

The grant will also allow for the introduction of multiple language options and expand the communication portal to include family doctors, who can play a critical role in medication adherence and more.

MEDVENTIONS MADE POSSIBLE BY DONORS

Seven new technologies have been developed by Sunnybrook fellows

Fostering the next generation of medtech entrepreneurs and ensuring more made-in-Canada medical devices make it to market are priorities of the Schulich Heart Program. In 2016, Dr. Strauss and his colleagues Dr. Wright and Dr. Brian Courtney launched the Medventions Program exclusively with generous donor support.

"Dr. Strauss has a vision of enabling clinicians, engineers and other scientists to collaborate in uncommon ways to develop tools and save as many lives as possible," says Dr. Ahmed Nasef, Medventions program manager.

The program has since brought together a total of 34 medical fellows and 44 undergraduate and graduate students to work with academic and industry advisors.

Together, they identify an unmet clinical need, develop and prototype a solution and then commercialize the product. Seven new technologies have been developed by the Medventions team.

Scaling up Medventions and its innovation model Canada-wide

In 2019, Medventions entered a brand-new chapter of growth and advancement leveraged by donor gifts. The federal government announced a \$1.2-million investment (\$245,000 a year for five years) for Sunnybrook Medventions to establish a multi-provincial network of medical technology, image-guided therapy and artificial intelligence (AI) skills training.

In January 2020, Dr. Strauss and his team scaled up the Medventions fellowship to the University of Calgary, where the first four fellows focused on innovation in radiation oncology.



Three recent cohorts of Medventions fellows.

In September 2020, two engineers and an orthopaedic resident joined the Sunnybrook Medventions Program. Working virtually alongside experts in the Holland Bone & Joint Program, they are tackling projects related to image-guided therapy, big data and machine learning.

As of January 2021, Sunnybrook will partner with the University of Toronto and the Vector Institute for Artificial Intelligence on a lecture series in AI and machine learning.

Led by Dr. Anne Martel, a Sunnybrook Research Institute senior scientist specializing in the development of novel medical image analysis techniques, the series will be attended by the Medventions fellows and other interested scientists.

Plans are also underway to establish Medventions at Dalhousie University in Nova Scotia.

Growth since 2016

38

Medventions fellows

44

University of Toronto students

8

invention disclosures

7

patents

Donor-supported database accelerating research

The rate of wound infections among Sunnybrook vascular patients has plummeted from 29 per cent to 2 per cent, and the hospital's head of vascular surgery is crediting the growing expertise of his team and a new international quality initiative.

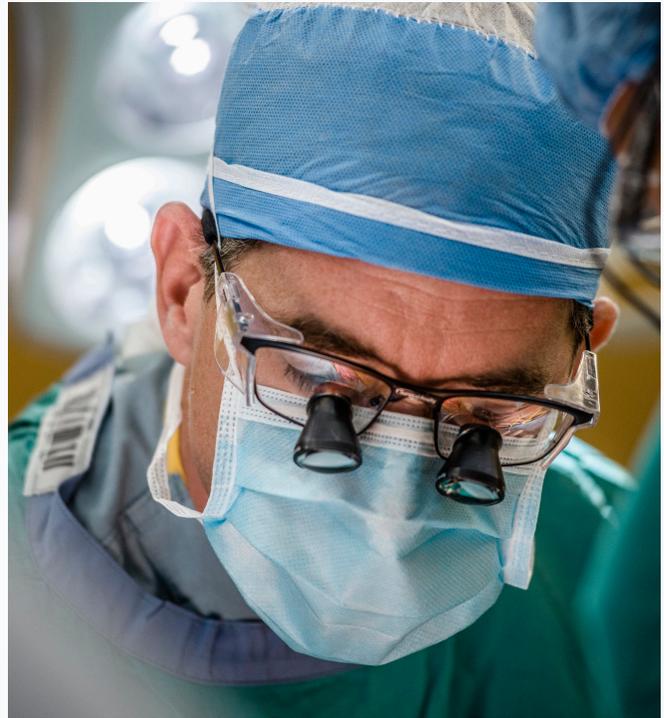
Dr. Andrew Dueck has leveraged funds from the Maggisano Family Chair in Vascular Surgery, which he has held since 2016, to manage the Vascular Quality Initiative (VQI), a clinical database designed by vascular surgeons to track and improve the quality, safety, effectiveness and cost of vascular health care. Sunnybrook joined the VQI in early 2020, along with a growing number of academic medical centres, teaching hospitals, community hospitals, vein centres, office-based labs and individual practices in Canada, the United States and Europe.

“The database includes hundreds of permutations of things that vascular surgeons care about,” explains Dr. Dueck. He cites the example of a simple aneurysm repair. A typical database might classify this as an aneurysm, where the VQI includes details such as the type of graft, how it was bypassed and how the resulting wound was preserved.

Having a wealth of data from vascular surgeons around the world “allows us to benchmark our results against everyone else and identify areas where we need to improve,” Dr. Dueck says.

Wound preservation is one important area of focus for the division. Dr. Dueck recently recruited vascular surgeon Dr. Ahmed Kayssi, a limb preservation and wound care specialist.

In addition to providing patient care, Dr. Kayssi oversees Sunnybrook's limb preservation fellowship program, the only comprehensive fellowship of its kind in North America.



Dr. Andrew Dueck

The team is also leveraging the VQI database as part of a Sunnybrook-led trial — the first time the Division of Vascular Surgery has led such a study — to improve ulcer care. Often the result of poor venous circulation, in which the veins don't effectively move blood back to the heart, ulcers can take months to heal, and patients in poor vascular health are at high risk for recurrence.

Dr. Dueck and his colleagues are studying the effectiveness of a new product that glues superficial veins shut. Fifteen of the 20 study patients have already been enrolled, and the results are “astonishing,” says Dr. Dueck. “We're seeing patients completely healed after just three or four weeks — even for some patients who had their ulcer for years.” Every step in the project is being tracked in the VQI database so others can benefit from Sunnybrook's findings.

“It's exciting because, for the first time, vascular research and care are coming together on a global scale,” says Dr. Dueck. “We have Sunnybrook's donors to thank for helping to make it happen.”



“The data suddenly has power to communicate how even small changes in the way we treat with patients can have a substantial impact on their recovery and outcomes.”

- Dr. Daryl Kucey

TYPE B AORTIC DISSECTIONS: HOW BIG DATA IS ADVANCING CARE

Vascular surgeon Dr. Daryl Kucey is in the final stages of developing and validating an algorithm to help determine the most effective treatment protocols for type B aortic dissection.

An aortic dissection is a tear in the inner lining of the artery that carries blood away from the heart to the rest of the body. It can take two forms.

Type B affects the descending aorta and, while often treated with medication to lower blood pressure, more than 50 per cent of patients will ultimately require a complex and high-risk surgery. It's unknown why the tear occurs and there is no standardized protocol for treating type B aortic dissection.

Dr. Kucey is working to change that with support from generous donors.

Treatment algorithm in final stages of validation

Using 10 years of data from Ontario's Institute for Clinical Evaluative Sciences (ICES), Dr. Kucey developed a standard timeline between the presentation of initial symptoms and surgical intervention for type B aortic dissection.

Among several notable findings, the timeline showed regional variations in outcome. “How well you do may depend on where you live,” explains Dr. Kucey.

He highlighted the need for standardized care across the province in a paper presented at both the Canadian Society for Vascular Surgery annual meeting

in September 2019 and the 48th Annual VEITH Global Symposium on Vascular and Endovascular Issues (NYC) in November 2019.

Dr. Kucey is now proceeding on two fronts. He is validating his findings in collaboration with vascular surgeons at St. Michael's Hospital and Toronto General Hospital.

While delayed several months due to the pandemic, the validation – and a publication presenting the work – should be complete in early 2021.

“We’re endeavouring to show that the algorithm we created with ICES is capable of querying massive databases and identifying a cohort of patients with the right disease parameters,” explains Dr. Kucey.

If we can accomplish that, he adds, vascular surgeons will have a way of using big data to establish quick and reliable inferences about how best to treat future patients.

New standardized care protocol piloted

Dr. Kucey is also collaborating with Think Research, Canada’s leading provider of evidence-based clinical decision support tools, to establish a provincial standard of care for type B aortic dissections.

Thanks to donor support, this protocol is now being piloted at Sunnybrook, Mississauga Hospital and Brampton’s Trillium Rehab Centre.

At Sunnybrook, the standardized care model begins the moment a patient presents in the emergency department and includes both inpatient and outpatient care.

“We’ve now implemented a team-based approach where specialists support the patient through their entire journey toward a goal of promoting longevity, reducing the need for complex surgery and improving long-term outcomes,” says Dr. Kucey.

Leveraging big data

Donor support also helped fund Sunnybrook’s subscription to two important patient databases used in aortic dissection care.

Established in 1996 and coordinated by the University of Michigan, the International Registry of Acute Aortic Dissection (IRAD) includes data on more than 1,500 patients enrolled at 21 tertiary centres in six countries.

Sunnybrook is the first Canadian centre to access the database, which opens the door to learning how health providers around the world treat type B aortic dissections — and sharing what we have learned.

Dr. Kucey is also playing an important role in the Vascular Quality Initiative (VQI), a clinical database designed by vascular surgeons to track and improve the quality, safety, effectiveness and cost of vascular health care.

The VQI includes data on more than 650,000 vascular procedures, including type B dissections, shared by vascular centres across North America.

“If you have hundreds of centres submitting data on disease processes that are relatively rare, the data suddenly has power to communicate how even small changes in the way we treat with patients can have a substantial impact on their recovery and outcomes,” says Dr. Kucey.

“In this case, bigger really is better.”

“

I'm optimistic that with the continued and strong support of our community, we can look forward to even more accomplishments from the incredibly talented and committed Schulich staff.”

- Dr. Bradley Strauss



FAREWELL TO THE CHIEF

Dr. Bradley Strauss celebrates a decade as Chief of Sunnybrook's Schulich Heart Program

The power of philanthropy was on full display on September 14, 2020, when the Sunnybrook community gathered to honour the end of Dr. Bradley Strauss's second and final term as Chief of the Schulich Heart Program.

“For 10 years, our minimally invasive structural heart program was supported entirely through philanthropic contributions,” Dr. Jon S. Dellandrea told the 60-plus donors, colleagues and friends who joined in the virtual celebration via Zoom. “This means there are hundreds of people alive today who, to put it bluntly, absent of those procedures would no longer be with us.”

Developing an unparalleled structural heart program has been a major initiative during Dr. Strauss's tenure. He has prioritized developing minimally invasive treatments and procedures in order to ensure the structural heart program's success.

It was through Dr. Strauss's persistence that Sunnybrook became one of the first sites in Canada to perform transcatheter aortic valve implantation (TAVI) to open narrowed arteries. His efforts launched Sunnybrook's first TAVI program in 2009. These accomplishments were followed closely by the launch of the MitraClip Program and addition of devices like the Watchman. Dr. Strauss also launched the Medventions Program to develop and prototype more made-in-Canada medical devices.

Dr. Strauss will continue in his role as the Reichmann Family Chair in Cardiovascular Research.

“I'm humbled to have had the privilege to lead the Schulich Heart Program,” Dr. Strauss told his audience. “I'm optimistic that with the continued and strong support of our community, we can look forward to even more accomplishments from the incredibly talented and committed Schulich staff.”

OUR THANKS TO YOU

Thanks to you, Sunnybrook's Schulich Heart Program is pushing the boundaries of what is possible in cardiac treatments and care.

The team's discoveries are saving lives and turning what was once impossible into "I'm possible."

We want to thank you for your generosity, your friendship and your continuing belief in our bold vision of research and innovation.

With your support as a catalyst, we are inventing the future of cardiovascular care.



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