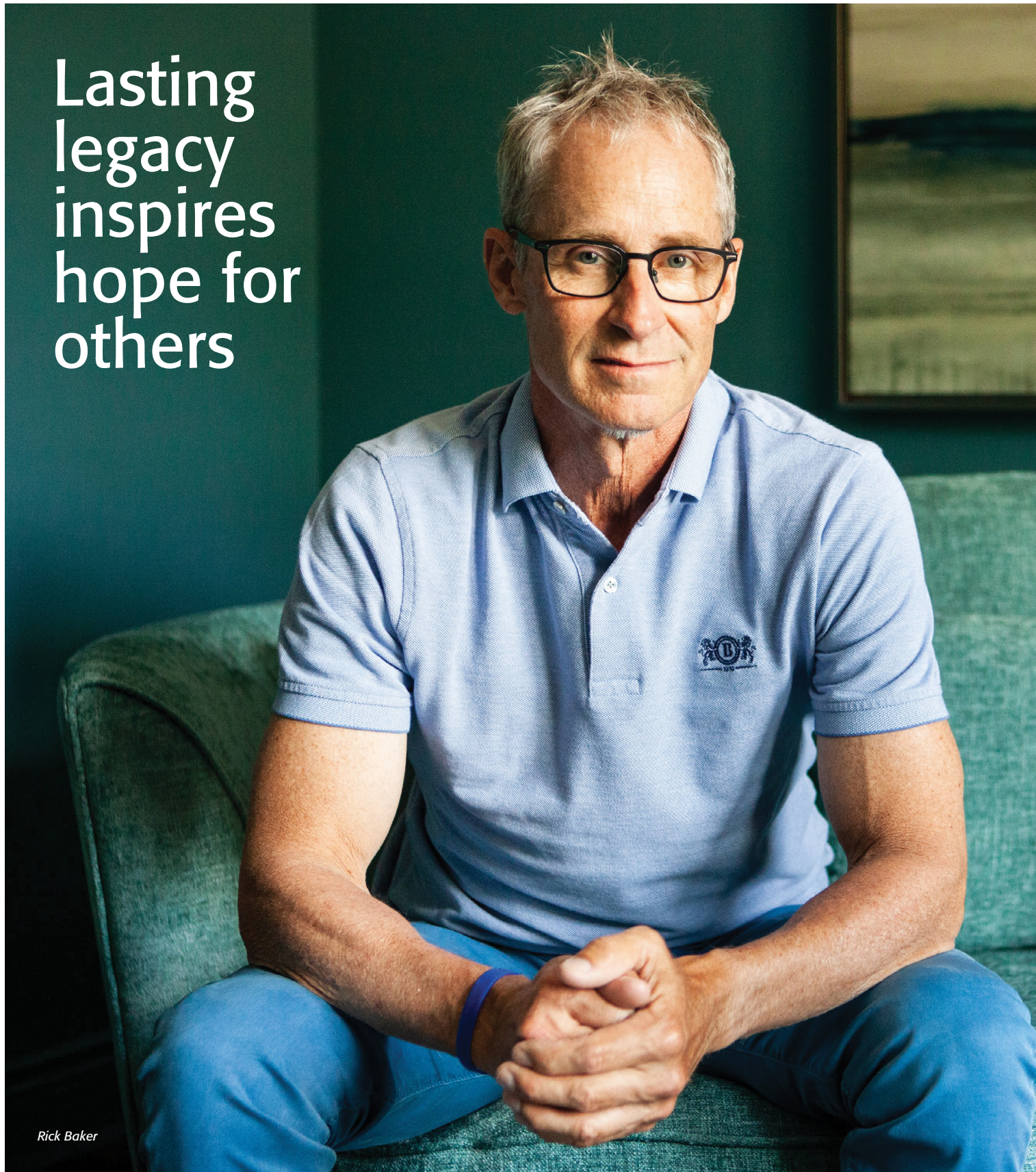


Lasting legacy inspires hope for others

Rick Baker



Your

Welcome to the 2020 Winter issue of Your IMPACT magazine. Throughout these difficult times, our community and donors have stood behind us at the foundation to make a difference for the patients and families cared for at London Health Sciences Centre (LHSC).

All of the items and projects featured in this magazine are generously supported by you, our donors. Your continuous support plays a vital role in pushing the frontiers of medicine with state-of-the-art technology, enhanced patient care and innovative research. Your contributions put LHSC at the forefront of medicine and help provide life-saving care.

Quite simply, you are making an incredible difference to the patients and families LHSC cares for each and every day.

Thank you.

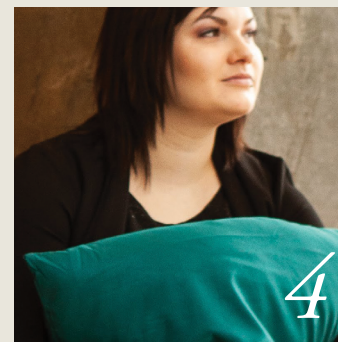
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Message from the foundation CEO



MESSAGE FROM JOHN MACFARLANE

Since the onset of the global pandemic, I continue to be humbled by the generosity our community and donors have shown. There has been unwavering support for many COVID-19 initiatives including, world-leading research and life-saving equipment, and the ongoing support for our highest priority needs at LHSC has also remained steadfast. I want to say thank you – to you our donors – for standing behind the foundation. Your continued support has provided hope when it does not seem likely. It has not been easy, but it has been made possible because you choose to care, and for that I am grateful.

It is with the help of you, our donors, that LHSC is able to be on the global stage for COVID-19 research. Researchers and scientists from our hospital have taken part in multiple studies and clinical trials that will have an impact on treatment options for patients not only here in London, but around the world. Your donations and commitment are part of the larger effort to save lives and improve patient outcomes.

While we have had a hyper focus on COVID-19 for the past eight months, we have not lost sight of the priorities and unmet needs of the hospital. We continue to work tirelessly to fulfil your optimism as a donor to help enhance patient care, purchase state-of-the-art equipment and enable ground-breaking research. Your support is making a true impact on the patients and families at our hospital every day.

In this report we will share the legacy of Rick Baker and what his vision meant for pancreatic cancer patients and the Baker Centre for Pancreatic Cancer. We will also share how the vision of others has created a warm, comfortable and bright environment for patients receiving chemotherapy, has enabled the expansion of life-saving services for young people in need of mental health support, and facilitated the purchase of cutting-edge technologies to help improve care throughout multiple medical disciplines.

We are truly grateful for the continued support, generosity and commitment from our donors and volunteers. It is our commitment to keep you informed, honour your kindness, fulfill your vision and celebrate your generosity. It is because of you, that making a difference is possible. Thank you.

John H. MacFarlane, BBA, LL.B, MPA
President & CEO
London Health Sciences Foundation

Life-saving program is expanding its services to support more youth in our community

The First Episode Mood and Anxiety Program (FEMAP) has reached a defining moment in the program's history:

The program is splitting at the seams and well beyond capacity in the current space. To solve the problem, the completely donor-funded program is embarking on a \$4 million fundraising campaign to desperately expand the treatment space and services offered to the youth in our community. The expansion will reduce wait times and allow more youth in need to receive the treatment that they need and deserve.

For over a decade, FEMAP has been a leader in adolescent mental health care and is one of the only programs in North America that is specifically designed to treat young people struggling and living with destructive mood and anxiety disorders. Youth, aged 16-25, can freely access services from psychologists, psychiatrists, social workers, addictions counsellors and participate in family therapy, group therapy and one-on-one treatments. All of these services are funded by generous community supporters who have recognized the need for a better model of care tailored to our youth.

Dr. Elizabeth Osuch, FEMAP Founder and Physician Lead/Psychiatrist, has developed this model of early intervention and preventative care that is changing the way youth are treated in a moment of crisis. However, current wait times for intake appointments and ongoing treatment can vary from weeks up to ten months after the initial call for help; lowering the chances for a positive outcome. Dr. Osuch's research highlights the importance of supporting and treating youth in the early stages of mood and/or anxiety disorders, before irreparable harm occurs. An expansion of space and services is vital in order to support and treat all the youth who are seeking help from FEMAP before it's too late.

For youth struggling with untreated disorders, finding the help and care they need can be a challenge. Since the age of 12, Tandra Lepine, now 27, has struggled with mental health issues and suicidal thoughts. Tandra credits her positive life outcome to the treatment and resources available to her at FEMAP.

Simply put, "Without FEMAP, I don't know if I would be here today," says Tandra. "It helped me find my voice and it helped me find hope when I thought there wasn't any."

One of the greatest needs for FEMAP is an increased treatment space for patients once they are accepted into the program. In early 2021 the necessary second location, provided by London Health Sciences Centre (LHSC), will open at 54 Riverview Avenue. This new facility will accommodate a comprehensive group therapy program, individual treatment space and additional on-site youth programs. Through generous donors and proceeds from the annual fundraiser Country Classic Auction, the program is nearly two-thirds of the way to the fundraising goal. Closing the fundraising gap will support the expanded services over the next five years.

As the program moves into its new facility, the additional funds will help double the team of healthcare professionals including psychiatrists, psychotherapists, social workers, researchers, and psychologists that will support the growing demand for services. Additional resources and trained support staff are essential to accommodate the increased number of youth seeking help from the program. The expansion will support enhanced addictions services, increased trauma treatment and provide crucial life skills to youth. It will help provide youth that are struggling with addiction and/or suffering from traumatic life events with the appropriate life-saving tools needed to navigate these intense mental health issues.



New FEMAP building

The increased, flexible work space and additional funding will create many opportunities for FEMAP. With the new facility, FEMAP will be able to offer training opportunities to medical, psychiatric, social work and psychology trainees that was not possible in the current space. This will provide first-hand experiences with clients to gain valuable skills for future practitioners.

FEMAP has changed the way youth mental health treatment is monitored through timely and appropriate questionnaires, surveys and online tools. Continued funding will support the efforts to create measurement-based treatment tools, like a youth-friendly mobile app, where clients will be able to conduct "on the go" self-assessments to share with treatment providers in real-time, allowing more accurate information to be communicated to clinicians to identify the best treatment approaches.

The First Episode Mood and Anxiety Program can only continue to be successful if timely and professional treatment is provided close to when a young person reaches out. Dr. Osuch summed up the need for additional space and resources in one powerful statement, "If we don't expand, we will implode."

Thanks to generous donors, FEMAP has been able to help thousands of youth find hope in their darkest moments, but there is still more to do. Supporting FEMAP is an investment in our youth and community. If equipped with the right tools – we can ensure a bright future for generations to come.



Donor funding provides a blanket of light for newborn

“My son Lucas was born with jaundice and it was terrifying to know that something was wrong with my little bundle of joy. The bilirubin blanket was a relief because I could still hold and comfort him while he was receiving treatment and we didn’t need to be separated. I love the fact that Lucas could stay close by for his treatment.” – Ashly Dias

Newly purchased bilirubin blankets allow parents and their

When you have a baby, joy rushes over you as you count each tiny toe and hold them tight for the first time. You’ll wonder if they are healthy, how they will grow, when they will feed, if they will sleep; if you’ll ever sleep.

Most parents though, aren’t imagining a serious medical concern when their newborn arrives. But somewhere, a niggling voice in the back of a parent’s mind, it’s there. Worrying if everything will be okay. Which is why it can be scary when in the first few days of a child’s life, panic sets in as their skin turns yellow with jaundice.

Newborn jaundice is a condition where a baby’s skin and the whites of their eyes look yellow due to an accumulation of a substance called bilirubin in the blood stream. This condition is common and is generally not serious. When it is severe, however, phototherapy treatment is required to prevent damage to the baby’s developing brain cells.

Phototherapy treatment is the use of light to help the body eliminate bilirubin. Traditionally, this treatment required the baby to be away from their parents in an incubator, under special lights wearing only a diaper and shielded goggles. That is until now.

Thanks to caring donors, phototherapy treatment can now be delivered in the arms of the baby’s parents with the purchase of two bilirubin blankets.

Bilirubin blankets are blankets woven with cloth and fiber optics, where the fiber optics transmit therapeutic light to the newborn. These blankets make it possible to treat newborn jaundice without having to place the baby in an incubator and cause undue stress and discomfort.

“Skin-to-skin contact is a powerful yet simple intervention for both mom and infant and creates a strong bond that can last a lifetime,” says Sarah Parkinson, Clinical Nurse Specialist, Women’s Care. “The contact stimulates a number of responses including but not limited to a release of hormones that promote stabilization of infant breathing, heart rate, temperature and blood sugar. In addition, it promotes infant brain development and boosts the immune system. For mom it stimulates milk production and promotes the physical healing from birth.”

When used, a blanket is draped directly against the baby’s skin to expose them to the light. This flexibility allows a parent to hold their child, change their diapers, even feed them all while receiving phototherapy treatment.

Grateful parent, Ashly Dias, experienced first-hand the benefits and flexibility the new blanket offers. “My son Lucas was born with jaundice and it was terrifying to know that something was wrong with my little bundle of joy. The bilirubin blanket was a relief because I could still hold and comfort him while he was receiving treatment and we didn’t need to be separated. I love the fact that Lucas could stay close by for his treatment.”

For parents at London Health Sciences Centre (LHSC) who are dealing with newborn jaundice, these two blankets are a game-changer, both physically and emotionally. Thanks to bilirubin blankets, and the donation that made them possible, treatment for jaundice in the Mother Baby Care Unit at LHSC has been revolutionized.

Innovation, inspiration and determination

The lasting legacy of Rick Baker

Rick and Shelley Baker

Imagine the shock of learning you have cancer. Now imagine that cancer had the lowest survival rate.

That was the blow Rick Baker and his wife Shelley were dealt in 2016, when Rick was diagnosed with stage IV pancreatic cancer. Given only six months to a year left to live, the Bakers were overwhelmed with emotion; they had so many questions. Mortality has an interesting way of putting everything into perspective. But if you were one of the lucky ones to have known Rick, you would have known a relentless determination bent on inspiring hope and change. And so, that's exactly what he did.

Because treatment options were limited here in Canada, Rick and Shelley looked beyond our borders for alternative methods of combatting the disease which had already spread into his liver. He underwent standard chemotherapy treatment all the while doing the research and legwork to gain access to newer, less available therapies. Experimental treatments he received abroad combined with the care from local doctors suddenly found Rick on the other side of his initial estimate for survival. For three-and-a-half more years he kept going—every month, every week, every day another victory, until September 22, 2020, Rick Baker passed away.

The funny thing about inspiration and hope, though, is that they're never really gone. A year before Rick's passing, he and Shelley made the magnanimous decision to donate \$1.5 million to London Health Sciences Foundation (LHSF), helping to launch the Baker Centre for Pancreatic Cancer at London Health Sciences Centre (LHSC). Focusing on the care and research of pancreatic cancer, the Baker Centre aims to improve access to experimental treatments, as well as offer faster, more accurate diagnoses.

"The Bakers' generous gift and support of the program is truly inspirational; without them the Baker Centre for Pancreatic Cancer would not exist," said Dr. Stephen Welch, Division Chair for Medical Oncology at LHSC. "Through enhanced care, technology and research, this centre will have a major impact on the lives of patients with pancreatic cancer in London and around the globe."

Indeed, as Rick and Shelley discovered in 2016, one of the reasons pancreatic cancer is so difficult to treat is because it's often not detected until later stages, when it's already moved into other areas of the body. But thanks to advancements in genetic testing, doctors were able to target specific anomalies in his tumour's DNA, which slowed the cancer's growth. The problem was, this treatment was only available in the United States, where the Bakers had to pay out-of-pocket.

From the onset, Rick saw that the dearth of cutting-edge technology and experimental treatment options for patients with pancreatic cancer was causing serious setbacks in Canada's ability to help those afflicted. But this wasn't for lack of trying. Dr. Welch and his team of oncologists at LHSC were doing their best to champion and implement innovative care solutions, however the funding simply wasn't there.

Now, a truly transformational shift is well underway. Just over a year after the Bakers' donation in July 2019, the centre has reached \$4.5 million of its \$5 million fundraising target. Because of this outpouring of generosity from donors, the

team at the Baker Centre has already been hard at work running a number of clinical trials intent on producing new diagnostic and treatment options for patients with pancreatic cancer.

Such trials include the development of a database that will measure the effectiveness of treatments often accompanied by surgery, and another that is using a form of radiation therapy to precisely target cancer cells while minimizing damage to surrounding tissue. Currently, the Baker Centre team is awaiting the arrival of an endoscopic ultrasound, an imaging device that represents one of the best methods of making a definitive pancreatic cancer diagnosis. State-of-the-art advancements like these will continue to allow LHSC to provide leading pancreatic cancer care, eliminating the need for patients to look elsewhere for treatment options.



We are deeply saddened by the passing of Rick Baker after his long battle with pancreatic cancer. He was an incredible man with a remarkable vision to change care for patients with pancreatic cancer everywhere. Rick's passion and generosity inspired us all and we are incredibly grateful for his philanthropic zeal over the past four years. And while our thoughts are with the Baker family during this difficult time, it's comforting to know that his legacy will endure through the lives he will undoubtedly change because of his ability to recognize an opportunity and stop at nothing to see it realized.

The gift of art gives renewed hope to cancer patients at London

Exceptional patient care comes in many forms, and in this particular instance, many colours too. In order to brighten the lives of patients undergoing cancer treatment, members of the London Regional Cancer Program (LRCP) at London Health Sciences Centre (LHSC) came together to create a meaningful reminder that, even when we are overcome by fear, we can

With the support of a generous donor and the talent of a local artist, Aulora Plommer, LRCP's Chemotherapy Unit nursing team was able to realize their transformative vision for the clinic.

It started with a coffee break conversation. Nurses, Liliana Di Cicco and Dawn MacKinnon, talked about how they could enhance the sense of welcome for patients entering the chemo treatment room. The room, which had a pillar with the likeness of a tree, had their imaginations running wild alongside their unyielding dedication to deliver holistic, heart-felt patient care.

Building on the existing outdoor concept, a dedicated group of LRCP staff, patient advisors and an artist came together to adorn the walls with a field of bright yellow sunflowers, a farm, beach and city skyline. The once sterile walls were transformed into beautiful murals to enliven the cancer clinic. Patient advisors contributed significantly to the process, ensuring this end result would uplift, encourage and resonate with patients.

Aulora Plommer



Beyond the aesthetic elevation of the space, the murals act as a source of hope and lively conversation. “You can hear patients chatting about the special memories that the images bring to mind,” shares Dawn. “This is a far and happy cry away from the conversations you may expect to hear in, what can otherwise be, a very solemn place.”

Compassion, courage and determination are rays of sunshine during patients’ darkest days

It’s difficult to imagine what a diagnosis of this magnitude would feel like, but the staff at LRCP have come to know that the beginning of treatment is the scariest time for their patients. Now, when they take that first step across the threshold to treatment, instead of walking into a sterile environment, they are greeted with the brightness of each mural, which provide a ray of hope. “Each day, we are trying to reduce the stress of our patients and make them more comfortable,” said Liliana. “These murals help us do that and allows conversation to flourish within those walls.”

We want to thank and celebrate all the caring hearts and creative minds who prioritized the production of these murals. Without donor funding of this project, each sunflower, building and tree would not be possible. These murals will create a happier treatment environment for countless patients during the years to come; and for that, we are grateful. A heart-felt thank you goes to Liliana and Dawn for bringing this project to light and caring so deeply to want to make a difference. Liliana and Dawn’s willingness to go above and beyond for their patients is perfectly articulated by Jackie Brindle, Clinical Manager, LRCP Systemic Treatments. “The chemo nurses are a beautiful balance of compassion and skill. I’m so proud of Liliana and Dawn for bringing this idea to the table.”

Embracing updated technology with their whole heart



Dr. Michael Ward



Cardiac Catheterization Lab

In the world of technology, 10 years is a long time. Looking back a decade ago, cell phones were mainly used for text and email, tablets were just invented and Blockbuster was still a storefront.

Technology is constantly evolving, helping us become more efficient and communicate better. In health care, it could improve or even save a patient's life.

For Faisal Khan, Operations Manager of the Cardiac Care Program and Cardiac Information Technology (CCP) at London Health Sciences Centre (LHSC), embracing technology isn't an option – it's essential for cardiac patients.

This was evident by the use of a 10-year-old, depreciating system used for various heart diagnostic and interventional procedures. The system's application crashes were frequent, image quality was declining and patient records were not integrated into LHSC's current hospital information system; making communication between health care providers difficult. The unreliability of the system often meant procedures were cancelled resulting in longer wait times for treatments. To repair the system, CCP needed a \$1.6 million upgrade, and fast.

"We had to rush for this upgrade because the previous system was almost dying," Faisal described.

Thanks to the vision and kindness of donors, the CCP began replacement of the old technology with eight new Mac-Lab™/CardioLab/ComboLab systems in September 2019. With staged rollout occurring through the year, the upgraded software along with new monitors and screens, allows cardiologists to take more accurate, invasive measurements of a patient's heart, as well as record details of each procedure, and enable shared reporting with the patient's whole care team.

The Cardiac Catheterization Lab within the CCP, where cardiologists place catheters into a patient's heart to do various measurements, requires the Mac-Lab™ system. This records clear images and data to assist physicians in measuring oxygen saturation and blood pressure as well as blockages in the arteries.

The Arrhythmia Lab in the CCP, which measures and records electrical pathways within the patient's heart, uses the CardioLab application.

ComboLab is an integrated system that allows cardiologists to see all types of cardiac measurements in one seamless, powerful recording system.

"This new technology will help physicians with acquiring better, more accurate measurements which will in the end help them make stronger, better clinical decisions," Faisal said.

In the Catheterization Lab, LHSC cardiologist and Lawson scientist, Dr. Michael Ward, believes the system is depended upon to help provide high-quality care on a daily basis. "[The system] integrates the whole room and tracks everything that's done. We wouldn't have a Catheterization Lab without the Mac-Lab™. It's just part of it," Dr. Ward said. "Having the foundation to help fund this is extremely helpful."

Faisal is currently working on the next vital steps – the implementation of electronic reporting of invasive procedures and integration with the hospital system. He is leading a project which will link the new Mac-Lab™/CardioLab/ComboLab systems with the hospital's existing electronic health record platform by creating an electronic orders and report distribution process. The goal is to have this completed by early 2021.

"Once everything is installed in the invasive labs, the information will flow directly between the hospital information systems and the Mac-Lab™/CardioLab/ComboLab systems, and physicians can report the results of patient's studies within the Mac-Lab™/CardioLab/ComboLab," Faisal described.

With clearer images and a reliable, integrated system, cardiac patients can have confidence knowing their health care teams are diagnosing more accurately.

The new systems demonstrate how technology can improve patient care. However, it's only possible because of generous donors like you.

"This was a huge help for us in moving into a more reliable infrastructure. We were able to move forward quickly with the help of the donors," says Faisal.

Seeing is relieving with Fowler Kennedy's new donor-funded ultrasound

When you're in pain, waiting on treatment for weeks or months can feel like a lifetime.

But that's the reality many patients have faced in recent years due to overwhelming demand for ultrasound-guided injections; used to relieve conditions such as joint pain, arthritis and inflammation.

At Fowler Kennedy Sport Medicine Clinic, the only ultrasound unit available was purchased more than a decade ago. Although in good-working condition, its resolution capabilities are limited and one of the probes needed replacing. At the same time, demand for the machine, which is currently shared by six physicians, is rapidly growing, as are wait times to use it.

From left to right:
Dr. Tarek El-Chabib,
Dr. Steven Joseph,
Dr. Darryl Putzer



Thankfully, the generosity of donors has changed the situation for the better. Recently, Fowler Kennedy was able to use donor funds to purchase a brand-new ultrasound unit as well as a replacement probe for the existing unit. Not only does the device feature cutting-edge technology, but it's availability at Fowler Kennedy means patients won't have to wait months to travel to the hospital to undergo similar procedures. This is beneficial for two reasons: first, it limits the pain, discomfort, and inconvenience experienced by patients, and second, it helps reduce demands on the hospital.

The new ultrasound unit is already being put to good use by Fowler Kennedy physicians, including Dr. Steven Joseph, Dr. Darryl Putzer, Dr. Tarek El-Chabib as well as orthopaedic surgeon Dr. Ryan Degen (not pictured).

Dr. Joseph is excited to use the new device – as well as the old one, which will remain in use for appropriate procedures – to treat more patients in less time. “Having a second machine, given that we’re seeing an increase in volumes related to technology like this, we’re able to book more patients and use it more often,” Dr. Joseph says. “In the end, it’s just better for patient care.”

Dr. Putzer agrees, pointing to what he expects will be drastic reductions in wait times to undergo ultrasound procedures. “I can send all my patients to the hospital and it would be a 6 to 8 month wait,” Dr. Putzer says. “But with this [ultrasound], if you showed up in my clinic tomorrow and I didn’t have time to do it then, I could probably see you within a week or two.”



Doctors compare new ultrasound, left, with old ultrasound, right.

For his part, Dr. El-Chabib has already seen the new device in action. “I had a patient with chronic shoulder pain,” Dr. El-Chabib said. Using the new ultrasound unit, “I performed a bicep tendon sheath injection. I left a follow-up appointment open ended and he made one just to call me and say ‘you did a great job, thank you so much for fixing my shoulder.’”

Looking ahead, the Fowler Kennedy doctors expect the new donor-funded ultrasound unit to further help Fellows become acquainted with relevant procedures. “Educating the Fellows to become adept at this is going to be easier ... because we have a second machine,” Dr. Joseph said. “As we look at trying to include a certification or module for ultrasound guided teaching in our program, without this it would be a lot harder for us to do.”

These outcomes for patients living with chronic pain wouldn't be possible without the help of donors who care.

Artistic celebration leads

Donors help purchase state-of-the-art equipment

For Doug Ferguson, receiving a new liver meant getting to be a part of his granddaughter's life. For Heather Fisher, it meant being able to pursue a career in nursing with grace and compassion. And for Ryley Mitchell, a new heart at only two-months old gave her the chance to grow up and explore her artistic dreams. These are the stories of success that highlight the importance of organ donation as well as the dogged perseverance of the human spirit.

Thanks to the help of donations raised by last year's New Canvas of Life event – where artists auction their work – the Multi-Organ Transplant Program (MOTP) at London Health Sciences Centre (LHSC) was able to purchase a safe, innovative organ monitoring device known as the FibroScan.

"Donor funding plays a huge role in helping support innovative and necessary

technologies which allows the transplant program to provide excellent care to all patients throughout Southwestern Ontario," says Dr. Anouar Teriaky, Medical Director of Liver Transplant and Assistant Professor of Medicine at Western University, Division of Gastroenterology and Hepatology. "This funding was integral in allowing us to purchase a new FibroScan to support our care of thousands of patients with liver disease."

Indeed, with a price tag of over \$100,000, New Canvas of Life was responsible for bringing in nearly \$52,000 toward the FibroScan, further solidifying MOTP's role as one of Canada's leading transplant programs.

In the past, liver patients would have to undergo an invasive biopsy, increasing the risk of complications. However, the state-of-the-art FibroScan mitigates these risk factors by offering

a non-invasive option that is quick, painless, and can provide similar accuracy to a liver biopsy.

The process itself is relatively straightforward. A probe, positioned against a patient's right side, sends a signal to the liver. This signal, known as a shear wave, is then measured by ultrasound pulses to assess liver stiffness as well as fat content—two indicating factors of the presence of liver disease. The measurement covers 100x the area of a standard biopsy and is taken 10 times in a matter of minutes, greatly reducing instances of sample error.

Liver patients won't be the only ones to benefit from this diagnostic tool, either. Oftentimes, physicians will need to monitor the liver health of kidney patients as well as heart patients. This brings a level of versatility to the FibroScan, which will help support transplant specialists to assess and treat those under their care.

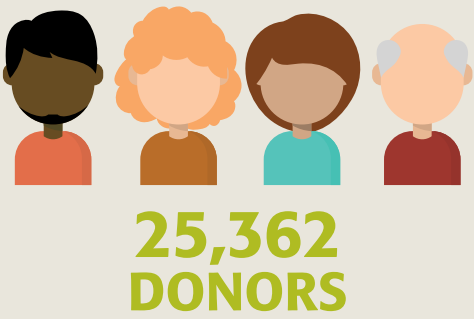
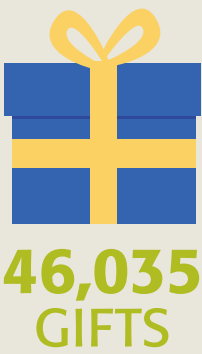
Initiatives like the New Canvas of Life are invaluable drivers of innovation and advocacy for transplant patients everywhere. Advanced monitoring techniques such as

those provided by the FibroScan will help reduce wait times by prioritizing patients based on individual needs. This will help ensure that more people like Doug Ferguson, Heather Fisher, and Ryley Mitchell are given a second chance to explore life and all its grand adventures.

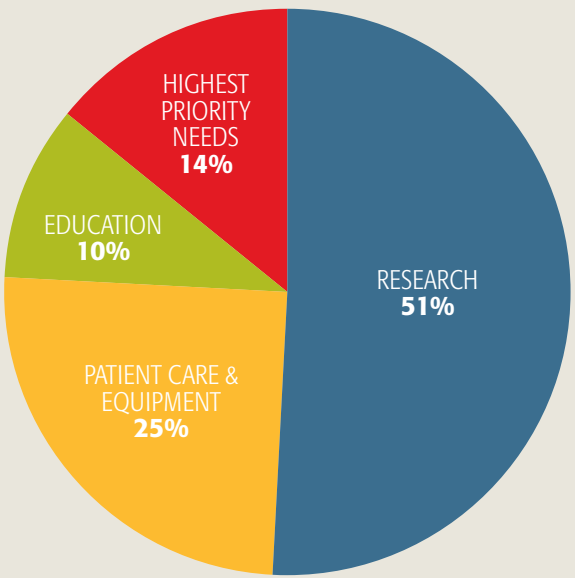


FibroScan 502 touch model

Your donations



DIRECT DONATION DESIGNATIONS



\$25 MILLION
RAISED



View the 2020 audited financial report at lhsf.ca/accountability



"I think it's important for donors to understand that making an investment in FEMAP is investing in the longevity of an individual's mental health journey. I wouldn't be where I am today if I wasn't able to access those services for free."

Grateful Patient Sidney Robertson

COVID-19

Global Trial Produces Conclusive Evidence for Targeted Therapies

For researchers around the world, it's a race against time to find a vaccine to fight COVID-19. But each day the virus exists, more people are dealing with its life-threatening effects. To bridge the gap, researchers in The Solidarity Therapeutics Trial, the world's largest randomized control trial on COVID-19 therapeutics, are generating conclusive evidence on ways to treat infected patients.

Thanks to donations to the COVID-19 response fund, after only six months, interim results have shown treatment using remdesivir, hydroxychloroquine, lopinavir/ritonavir, and interferon regimens appeared to have little or no effect among hospitalized patients. These results are now in review for publication in the New England Journal of Medicine - a prestigious peer-reviewed medical journal.

Now, newer antiviral drugs, immune regulating medications, and antibody treatments are being considered for evaluation. And with nearly 500 hospitals open as trial sites around the world, these promising new options will be evaluated even faster.

Principal investigator for the study, and London's city-wide Chair/Chief of Infectious Diseases and Lawson scientist, Dr. Michael Silverman states, "We at LHSC are proud to be part of this global effort to rapidly produce critical evidence to inform best treatment options for our patients and patients around the world."

Dr. Douglas Fraser, a critical care physician at LHSC and Lawson scientist, along with his team, have made several leading discoveries using blood samples from COVID-19 positive patients. Their discoveries include: determining a new diagnostic method that is relatively inexpensive and that could become widely available, the identification of six proteins that accurately determine a patient's disease severity and outcome; finding blood vessel injury as the cause for clotting, particularly in the lungs; and, locating key therapeutic targets in order to treat life-threatening hyperinflammation.

These discoveries are crucial in helping inform future COVID-19 clinical trials. "There's going to be a number of large clinical trials coming up," states Dr. Fraser. "It's very important to be able to target therapeutics based on evidence and to stratify patients into different groups... and to stratify those patients early so that we can do the best we can with those clinical trials off the bat."

To date, Dr. Fraser and his team have published five peer-reviewed papers in respected medical journals and they have four more in review. As well, four patents have been filed which will help protect intellectual property and ensure future generations and collaborations are possible.

New Non-Invasive Ventilation Mask Approved by Health Canada

Severely ill COVID-19 patients can hardly breathe. The use of traditional non-invasive ventilator masks, however, pose a risk as viral airborne droplets can seep into the air. Thanks to Dr. Tarek Loubani, an LHSC emergency physician and Lawson scientist, and a creative multi-disciplinary team of engineers, physicians, nurses and respiratory therapists, a new Aerosol-Reducing Mask (ARM) was created.

The mask, which ensures air filtration and a tight seal around the patient's face, has been approved by Health Canada and is awaiting FDA approval. ARM has been lab tested and is halfway through completing a clinical trial in London. Already, the team has confirmed a dramatic decrease in leaks and the ability to optimize the mask for existing respiratory systems.

Dr. Loubani has made the instructions for reproducing the mask available online along with data and processes to make sure it is safely used. By having readily available open source plans, he hopes to lower the barrier of production for remote communities around the world.

"Our goal is not to create a device and put it out there," says Dr. Loubani. "Our goal is to make people's lives better and make people healthier."

Sedative Shortage Sparks New Clinical Trial

As health care workers around the world grappled with the flurry of COVID-19 patients coming through their doors, they were also faced with equipment shortages required for saving them. For the Intensive Care Unit (ICU), this included a global shortage of intravenous (IV) sedating medication that are needed to allow critically ill patients tolerate mechanical ventilation. Due to extreme demand and supply chain disruption during the peak of the pandemic, researchers and medical staff needed to find a solution, and they needed to find it quickly.

Dr. Marat Slessarev, a critical care physician at LHSC, and his team, took on the task of finding a solution with the idea of using inhaled anesthesia. Used routinely in the operating room during surgery, this type of sedation is typically safe, inexpensive and readily available not just in Canada but worldwide. In addition, earlier studies have shown using inhaled anesthesia may have beneficial effects on the lungs including reducing inflammation and opening up small airways to improve oxygen levels. So, what's the drawback? ICUs currently do not have the equipment, staff or processes in place to facilitate this type of procedure.

For this reason, the idea will soon translate to clinical trials. Their goal will be to determine whether sedation with inhaled anesthetics improved survival of ventilated patients with COVID-19 pneumonia compared to standard IV sedation. Dr. Slessarev and his team will also look to prove whether inhaled anesthetics shortened the patient's time on ventilation, preserving capacity in ICUs during the pandemic and ultimately making more ventilators available.

Before delivering this intervention in a clinical trial setting, the team must first purchase appropriate equipment, create clinical processes and protocols as well as educate staff.

With the help of donor funding, the research team was able to kick-start the project with the purchase of bedside anesthesia monitors that integrate into the existing ICU monitors.

"This will essentially allow us to measure levels of inhaled sedatives to ensure we can deliver them safely both during the trial and beyond if sedation with inhaled anesthetics becomes standard of care," explains Dr. Slessarev.

If inhaled anesthetics prove to be superior to IV sedation, it could cause a paradigm shift in the way hospitals sedate patients in the ICU worldwide.

Before Canada saw its first COVID-19 case, medical minds around the world were working tirelessly to learn about the virus and join the global effort to save lives.

Your donation in hope for a better future, has given researchers and scientists at London Health Sciences Centre (LHSC) the opportunity to take part on the world stage. They are now making discoveries that will help treat patients with the virus both locally and internationally.

The following is an update to several ongoing research projects happening here in London.



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