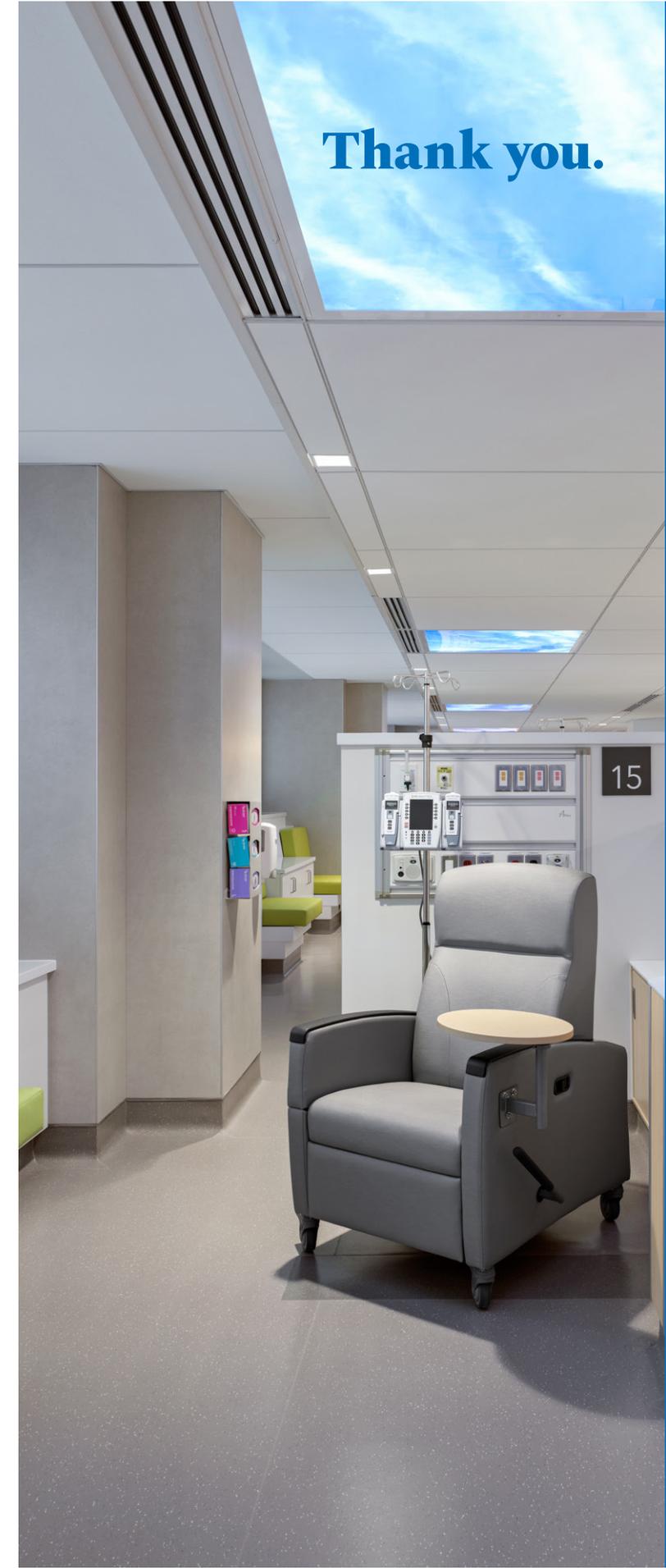




Your Impact
in Action

CANCER CARE
AND RESEARCH

See what care can do
to transform lives



Thank you.

Over the past few years, it has been a privilege to witness the incredible advancements across Sinai Health's Cancer Program. And I have you to thank. In this report, we detail important innovations and programs made possible by you.

Our footprint is large — and it continues to grow, with two new oncologists who recently joined our team, complemented by teams of specialized nurses, social workers, psychiatrists, genetic counselors and more. They are the driving force behind our integrated model that fosters important collaborations and projects.

Our literal footprint is growing too. Thanks to donor support, we opened our brand-new outpatient Cancer Care Clinic within the Christopher Sharp Cancer Centre. The home of the Ruth Burnett Centre for Outpatient Oncology, innovative technology solutions and more, the Clinic is bringing our multidisciplinary teams together to provide state-of-the-art, patient-centred care.

As Mount Sinai Hospital marks its 100th anniversary this year, we are honoured to have played a part in this remarkable institution's history — and thrilled to look ahead to breakthroughs to come. We have bold ambitions to expand our efforts across our key pillars of cancer clinical care, research, survivorship and education.

At Sinai Health, we put our patients first by advocating for them, treating them, and importantly, walking by their side. But we can't do it without your support. Thank you.

Dr. Christine Brezden-Masley

Medical Director, Cancer Program

Director, Marvella Koffler Breast Centre

“ Thank you: for what you’ve built, and what you’re building — the future of cancer care. „

Dr. Christine Brezden-Masley,
Medical Director, Cancer Program

40%

More than 40 per cent of the research conducted at Sinai Health’s Lunenfeld-Tanenbaum Research Institute focuses on cancer.

25+ years

The first-of-its-kind dedicated breast centre in Canada, the Marvelle Koffler Breast Centre has been providing comprehensive, holistic breast cancer treatment and support for more than 25 years.

85%

Our work in the diagnosis and treatment of sarcomas has earned us international recognition, with 85 per cent of our patients referred to us from outside Toronto.

3,000

Mount Sinai Hospital performs over 3,000 cancer surgeries a year, including the most complex cases in Toronto for patients with breast, head & neck, bladder and prostate, sarcoma, stomach, colorectal and other abdominal cancers.



Patient Jennifer McKendry celebrates her last day of chemotherapy with Cancer Care Clinic staff.

Welcome to the future of cancer care

Thanks to generous donor support of the Renew Sinai campaign, Sinai Health is now home to a state-of-the-art Cancer Care Clinic designed for faster diagnosis, more streamlined care and exceptional patient comfort. With comprehensive input from patients and their loved ones, every aspect of the space has been carefully designed to place patients firmly at the centre of their care.

Bringing cancer specialists to the patient was critical, explains Dr. Christine Brezden-Masley. "Our patients and families want an expertly integrated experience in which time isn't wasted traveling to different appointments."



Dr. Christine
Brezden-Masley



With a thoroughly integrated care model, the new space is conducive to collaboration across specialties, creating a “one-stop-shop” for patients. The clinic also boasts innovative technology solutions and increased treatment, examination and consultation spaces to help reduce wait times.

Other highlights include an innovative chemotherapy pharmacy, spacious reception and waiting area, and thoughtful details throughout – such as a skylight and murals inspired by nature.

“We wanted to create the most comforting, comprehensive and state-of-the-art Cancer Care Clinic possible. And thanks to the efforts of our community, we’ve done just that,” says Dr. Brezden-Masley. “This space is a shining example of the future of cancer care.”

From diagnosis to survivorship: transforming breast cancer care

First opening its doors in 1995, the Marvelle Koffler Breast Centre (MKBC) has evolved into a premiere facility with multidisciplinary experts specializing in breast health and disease. Here are some of the programs through which our teams go above and beyond for patients, thanks to your support.

PYNK at Sinai Health

In October 2022, Sinai Health was thrilled to launch the PYNK program: a remarkable initiative designed to meet the unique needs of women diagnosed with breast cancer at age 45 and under. Patients within this underserved but growing patient population have specific needs that include everything from preserving fertility to balancing work with treatment to navigating personal relationships.

Sunnybrook Health Sciences Centre's Odette Cancer Centre created the groundbreaking PYNK program in 2004. Thanks to the generous support of the Jesin Neuberger Charitable Foundation, it has now expanded to serve patients at the Marvelle Koffler Breast Centre and the Juravinski Cancer Centre at Hamilton Health Sciences.

PYNK's first patient at Sinai Health is a woman named Sandra, who was diagnosed with stage IV breast cancer at age 31.



“It can be overwhelming to navigate the physical and mental impacts of cancer, and I feel so supported knowing that there’s always someone an email or phone call away to answer my questions and walk me through it,” says Sandra, who has formed a special bond with nurse clinician Linda Muraca. “Talking to Linda is like catching up with a friend. She creates a safe space where I can ask or share anything.”

Linda works closely with PYNK Social Worker, Victoria Calleja, to provide patients with invaluable support, including help navigating the complex health-care system.

“They help me follow up with surgeons, doctors, nurses and administration – there’s a lot when you’re dealing with cancer,” says Sandra. “But PYNK has my back.”

PYNK’s expanding team at Sinai now includes a nurse navigator, a social worker and research coordinator. Its life-changing impact at Sinai Health has only begun.

to one of Canada’s leading menopausal health centres – in an effort to provide new resources for patients. Ultimately, the team aims to open a nurse-led SHE-CAN clinic at MKBC as a safe space to address sexual health concerns and reduce the burden of sexual dysfunction through education and individualized interventions by our care team.

Taking Charge

Research shows that dietary changes and physical activity, in association with weight loss, may reduce the risk of breast cancer recurrence.

While breast cancer patients are often highly motivated to take charge of their health, there can be conflicting information about the best way forward. That’s why Taking Charge was formed: to educate women and provide reliable information about diet and exercise that will have a positive influence on their overall health and survivorship.

After pivoting to a virtual format due to COVID-19, the team used the opportunity to develop a standardized program that other cancer programs across Canada will soon be able to emulate.

The online program now consists of five biweekly sessions with small groups of women, who are supported by an oncologist, nurse clinician, dietitian and exercise consultant. Together, they help each patient set individualized goals and plans based on what they need. They also provide tools, including logs to keep track of eating and activity, along with guidance to make healthy behaviour changes.

“ PYNK has my back. „

Sandra, PYNK patient at Sinai Health. At age 31, she was diagnosed with Stage IV breast cancer.

SHE-CAN

A new initiative in 2022, SHE-CAN supports women with breast cancer who are on anti-estrogen therapy and have developed issues related to sexual dysfunction, body image and survivorship. The program was developed after clinicians noticed their menopausal patients frequently reporting that an important aspect of their quality of life – their sexual health – was negatively impacted.

Last year, SHE-CAN leaders partnered with experts at Women’s College Hospital – home



Cancer in pregnancy training course receives national acclaim

The Cancer in Pregnancy online course, developed with help from donor generosity, received top honours at the 2021 Canadian Association of Nurses in Oncology conference. The Education Award winner was developed after Sinai Health outpatient oncology nurses identified a learning gap and the need for concise, easily accessible educational materials that would help prepare them for this unique patient population.

While cancer in pregnancy is a rare diagnosis, its prevalence is projected to increase as more women delay child-bearing. With an abundance of complex decision-making involved, it is vital that information between obstetrics and oncology teams is accurate and consistent.

A multidisciplinary working group was formed to develop an online course for oncology and obstetrical nurses to improve patient-centred care for patients with breast cancer during pregnancy.

The group included a medical oncologist, maternal fetal medicine specialist, surgeon, radiologist, genetic counselor, psychiatrist, social worker, oncology pharmacist, and oncology and obstetrical nurses.

Bringing together the obstetrical and oncology departments – which don't commonly collaborate – was a unique experience that has proved to be effective.

Since going live in 2021, 264 nurses have enrolled in the online course with subsequent evaluations showing improved knowledge and confidence in delivering patient care.

Dr. Christine Elser and her team are currently developing additional education materials informed by extensive patient input. They are also hoping to expand the course to include other cancer types, such as cervical, ovarian and leukemia.

Clinical trials bring new treatments



Drs. Rebecca Gladdy and Albi Razak

Sinai Health is now a key partner in a rising number of clinical trials through which our cancer patients access the most promising, newest treatments. In one notable trial, called SPOTLIGHT, Sinai Health is one of only five Canadian sites to join the global study that has the potential to change how we approach stomach cancer care. Early results show that adding an antibody to chemotherapy extends the lives of patients for whom average survival is just one year.

Trial proposed for new sarcoma drug

In collaboration with SickKids scientist Dr. Adam Shlien, Dr. Rebecca Gladdy has spotted a DNA damage signature that may be quite common in leiomyosarcoma (LMS). Cancers are caused by damage to the DNA in your cells, called gene mutations. To explore this promising target for new drugs, Dr. Gladdy and Dr. Albi Razak (pictured top left) have asked the Canadian Clinical Trials Group to green-light a new patient study. The team will combine chemotherapy and drugs that work against DNA damaging agents in a way that is both effective and safer for patients. The impact would be enormous, potentially allowing the treatment of LMS located anywhere in the body.

Seed funding sparks new collaboration

Early seed funding, made possible by donors, is allowing Dr. Christine Brezden-Masley to collaborate with Lunenfeld-Tanenbaum Research Institute scientist Dr. Hartland Jackson to study a specific genetic mutation (called BRCA2) that puts women at far higher risk of breast cancer. In their study, they will take live tissue and cell lines from patient participants, and then analyze the tumour's behavior in a lab setting. Merging basic science with clinical research in this way carries high potential for finding new treatment strategies for this hereditary form of breast cancer.

Donors establish the Mount Sinai 100 Dr. Pamela Goodwin Chair in Women's Cancer

Throughout her 35-year career, Dr. Pamela Goodwin has become a global leader in breast cancer research by discovering important links between breast cancer and women's lifestyles.

From her discovery that high insulin levels that commonly occur in obesity spur the growth and spread of cancer, to uncovering how the diabetes drug metformin can improve breast cancer outcomes, Dr. Goodwin's career is nothing short of remarkable.

Our community of donors have already raised \$1.3 million toward this Chair's \$3 million goal. Their support will build upon Dr. Goodwin's life-saving legacy – bolstering the next generation of leaders in women's cancer research from around the world.



Robotics program transforming surgery

Inside our state-of-the-art surgical floor is a donor-funded robotics suite that enables complex yet minimally-invasive surgeries.

Here, Dr. Chris Wallis, a rising star in his field, is one of the leaders of Sinai Health's growing robotic cancer surgery program.

Key to this advancement is a leading-edge robotic system – called daVinci Xi – which Dr. Wallis and other surgeons use to perform precision operations with their instruments linked to state-of-the-art camera and ultrasound technology.

As the surgeon uses the robot control console, a high-quality laparoscopic camera beams 3D vision with four times the standard magnification, enabling precise movements that translate into greater accuracy, less blood loss and expedited recovery for patients.

This remarkable vision is simultaneously combined with images from an intraoperative ultrasound (high-energy sound waves that are bounced off internal tissues and organs during the procedure) to guide surgery with unparalleled accuracy.

In addition, the da Vinci Xi's superior rotational range of motion means laparoscopic surgeries can be extended to additional groups of patients with specific health conditions, including women with certain types of reproductive cancers.

The result: far less invasive and disruptive procedures that are equally effective as traditional open surgery, saving patients from longer and more painful recoveries.

What it means for our patients undergoing:

PROSTATE CANCER SURGERY

- Smaller incisions bring less pain, less blood loss
- Return to regular life and activities in a few days vs. two weeks
- Recovery can be achieved at home rather than being admitted to hospital
- Possibility of going home the same day

KIDNEY CANCER SURGERY

- Surgeons able to preserve far more healthy kidney tissue, helping avoid future kidney dysfunction
- Avoiding large incisions through layers of muscle
- Far less pain in recovery, reduced need for analgesics
- In hospital one to two days vs. four to five days
- Recovery period is one to two weeks vs. four to six weeks

At the global forefront of cancer research, thanks to you

New study aims to prove the power of oncogenomics

Oncogenomics, or comprehensive genomic profiling (CGP), is the future of cancer care, promising to deliver the right treatment to the right patient at the right time. Typically, a patient's cancer type dictates the standard testing and treatment they receive – when their cancer spreads or returns, genomic profiling can uncover any remaining opportunities for promising treatment options or clinical trials.

While many CGP tests examine the DNA only and are limited to fewer than 350 genes, our team has developed OncoGx500: Sinai Health's first CGP test that simultaneously examines the DNA and RNA from tumours and looks for mutations in more than 500 cancer-relevant genes. Thanks to a grant from Eli Lilly, Drs. Christine Brezden-Masley and George Charames recently launched TAPESTRY (Tumor-Agnostic PrEcision in Solid TumoR OncologY) NGS (Next-Generation Sequencing) as a feasibility study for the standard use of OncoGx500.

With help from our generous donor community, the team ultimately aim to offer tailored, targeted treatment for all our patients with cancer – and help establish CGP as the standard of care far beyond Sinai Health's walls.

Familial GI Cancer Registry explores cancer prevention

The Familial GI Cancer Registry – housed in the Zane Cohen Centre for Digestive Diseases – is a trailblazing program dedicated to the treatment and prevention of inherited gastrointestinal (GI) cancers.

Recent research highlights include extensive interviews conducted by genetic counsellors with women with Lynch Syndrome (LS), who are at higher risk for endometrial and ovarian cancers but for whom screening is limited and ineffective. We are sharing their perspectives globally and building accessible new tools to help them keep cancer at bay.

The Registry also participated in a global study measuring the long-term use of resistant starch supplements in patients with LS. Resistant starch can be found in a variety of foods, such as rice, potatoes and plantains. The exciting results showed evidence that resistant starch can lower the risk of cancers in the upper digestive tract.

Next, the Registry is contributing to a study assessing whether a unique blood test can detect circulating tumour DNA.



Dr. Alexandre Zlotta

New treatment approach for bladder cancer is discovered

AI: the future of prostate cancer care

Since most men will be diagnosed with prostate cancer as they get older, it is vital to identify which cases are potentially fatal. To decide the extent of prostate removal by surgery, clinicians have calculated factors such as age, number of biopsies, PSA markers and other data to determine the probability that the cells have spread beyond the border of the prostate. These tools have proven inaccurate in the past and made it difficult to preserve sexual function, for example.

In a new study published in *Lancet Digital Health*, a team from Sinai Health and Princess Margaret – including the talented urology resident Dr. Jethro Kwong and led by Dr. Zlotta – joined global collaborators to test whether AI could generate more accurate information. In thousands of men from diverse ethnicities and regions, the team successfully validated a new AI model that can better predict each patient’s risk of aggressive prostate cancer.

Future studies based on this exciting advancement will help reduce the reliance on measuring PSA levels and using MRI scans – to improve the prediction whether a tumour is truly harmful or not. In fact, only two to three per cent of prostate cancer cases are fatal.

“AI, which is now part of our daily lives, will be key in medicine,” says Dr. Zlotta.

Some patients with bladder cancer face aggressive tumours that penetrate deeply in the bladder muscle while others have non-aggressive tumours that remain in the first layers of the bladder lining. For decades, the approach in most cases of aggressive muscle invasive bladder cancer was the removal of the entire organ or “radical cystectomy”. Alternatively, surgeons scrape away the tumour and treat the area with radiotherapy combined with chemotherapy – thus preserving the bladder. This is called “trimodality therapy.”

With donor support, Dr. Alexandre Zlotta co-lead a study with Dr. Jason Efstathiou, from Harvard Medical School and Massachusetts General Hospital, that examined outcomes from the two methods over a 12-year period in more than 1,000 patients treated at large academic centers in Toronto, Los Angeles and Boston. Dr. Zlotta is the Director of Uro-oncology at the Murray Koffler Urologic Wellness Centre, which is led by the renowned Dr. Keith Jarvi.

The results of his study are now published in the June issue of the *Lancet Oncology* and are poised to change lives: in select patients with single tumours with similar characteristics, both radical cystectomy and trimodality therapy led to similar patient outcomes. This practice-changing evidence means that many patients with bladder cancer can avoid the full removal of this important organ and be spared the life-changing effects.



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