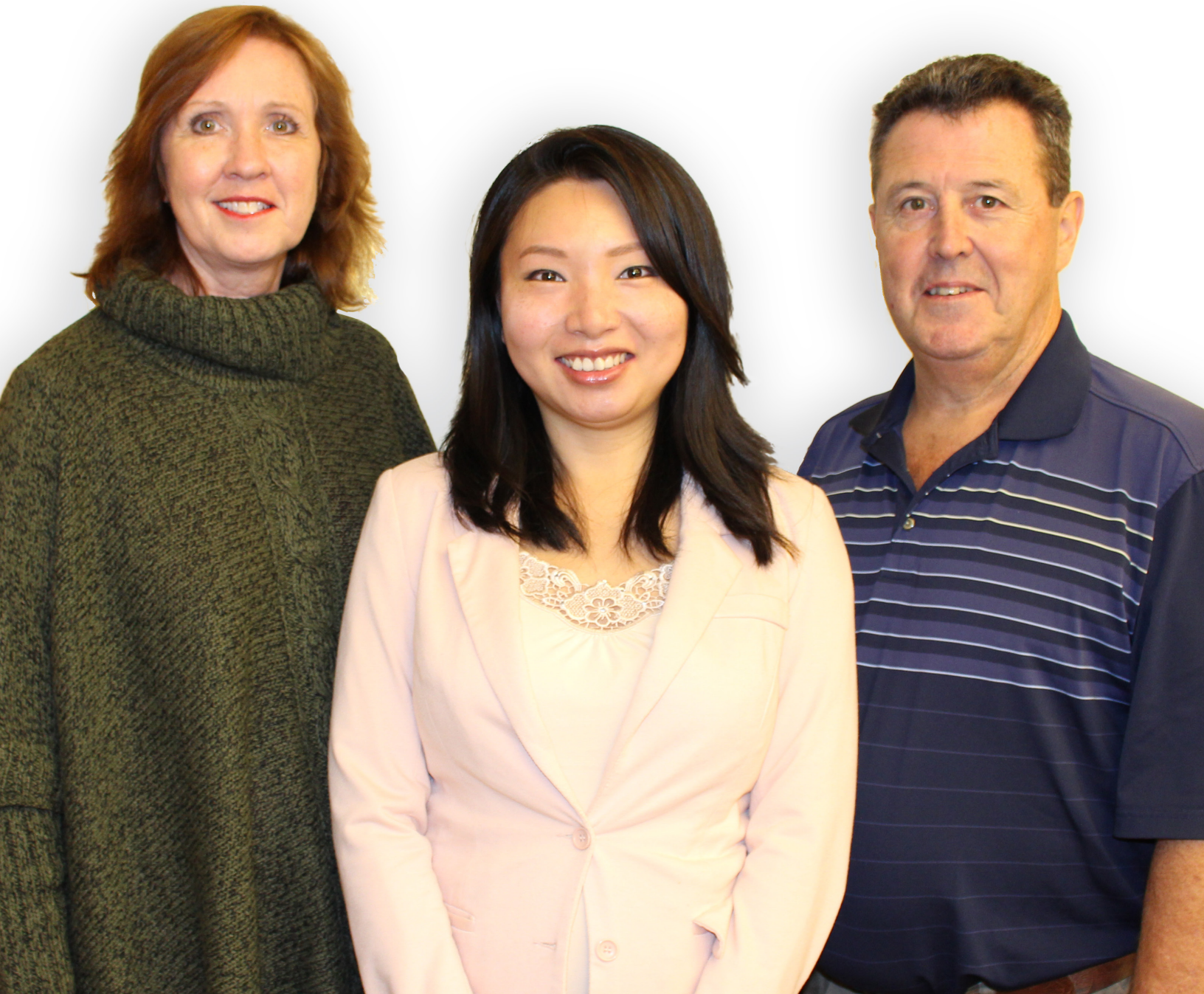
CancerCare Manitoba
ActionCancerManitoba

Improving Outcomes for Manitobans with Cancer

2017-2018 Annual Progress Report



Our Vision

A world free of cancer.

Our Mission

To reduce and, where possible, eliminate the burden of cancer on the people of Manitoba through exemplary programs of prevention, diagnosis, treatment, rehabilitation, continuing care, research and education.

Our Values

RESPECT FOR PEOPLE
Dignity, fairness, openness, equity, collaboration, cooperation, sensitivity to cultural diversity and identity, compassion, privacy, confidentiality.

INTEGRITY
Honesty, objectivity, reliability, responsibility, fidelity, transparency.

EXCELLENCE
Timeliness, efficiency, effectiveness, relevance, diligence, creativity, initiative.

STEWARDSHIP
Prudence, sensitivity to risks, opportunities and sustainability of human and material resources and the natural and built environment, accountability.

Message from

The Chair of the Board and The President & CEO

On behalf of the Board of Directors of CancerCare Manitoba (CCMB) and the physicians and staff at CCMB, we are proud to present the 2017-2018 Annual Progress Report for CancerCare Manitoba. This Report has been prepared in accordance with The Regional Health Authorities Act, and with guidance from Manitoba Health, Seniors and Active Living (Manitoba Health). These pages offer highlights of the second year of progress on the strategic priorities set out in CancerCare Manitoba's five-year strategic plan: Delivering Excellence: 2016-2021 Manitoba Cancer Plan. The Manitoba government's transformation of our health care system continues, requiring CCMB, along with other health authorities, to adjust its priorities to adapt to this new provincial environment. Notwithstanding these changing times, as the title of the Report suggests, CCMB is improving outcomes for Manitobans with cancer.

The World Health Organization's recent report emphasizes the growing cancer burden is an imminent global disaster. Recent statistics show one in two Canadians will face a cancer diagnosis in their lifetime. Three out of four Canadians will survive cancer, but require continuing treatment. This means more Manitobans will need cancer treatment. CCMB is readying itself for this growing cancer surge in a sustainable way.

CCMB has a five-point strategy to meet the needs of Manitobans with cancer (See page 4). CCMB recognizes that it does not have all the answers. It is important that CCMB recognize evidence-based best practices carried out in other jurisdictions. Best practices assist cancer care providers in delivering high quality service to patients in an efficient manner. Innovations in treatments and in technology can help more people live longer with cancer or live better with cancer. CCMB is examining cancer treatments that could be delivered on an out-patient basis to avoid expensive hospital stays and improve the patients' experience. Adopting new technologies also provides better care to our patients.

Optimum care for cancer patients comes about through research and education. The Report highlights the research being done at the Research Institute at CancerCare Manitoba to help patients with advanced cancers. Ovarian and brain cancers are among the most challenging for patients. At CCMB, researchers are examining ways to make better decisions about treatments for glioblastoma multiform and to reduce the amount of radiation given to children with brain tumours. Ovarian cancer is often diagnosed at a late stage. CCMB's research team has successfully developed a

number of experimental compounds that are effective against chemotherapy-resistant ovarian cancer cells.

CCMB also recognizes its responsibility to provide value for money but with demand for cancer services going up, doing more with limited resources cannot compromise patient care.

CCMB is also building human capacity by educating the next generation of cancer care providers and researchers at many levels.

CCMB has also been working with CancerCare Manitoba Foundation and Manitoba Health on reimagining the CCMB expansion project. Meeting the growing needs of Manitobans with cancer requires additional space in all facets of the organization. Turn to page 22 for more information.

CCMB is grateful for the enormous financial support received from Manitobans through CancerCare Manitoba Foundation. Your donations make cancer research and improvements in patient care possible. Our appreciation also goes to our other financial supporters, Manitoba Health and, of course, all Manitobans, for their continued support. Thank you.

The CCMB Board of Directors is charged with the governance and direction of CCMB on behalf of all Manitobans. Thanks to our Board members, past and present, for their dedication, hard work and enthusiasm in helping carry out our mandate.

Everyone who works at CCMB is dedicated to delivering quality care to Manitobans with cancer and blood disorders. Thanks to the management, administrative, technical and support staff of CCMB for their exemplary care and compassionate support of Manitoba patients and families facing cancer.

CancerCare Manitoba has the responsibility to be prepared for the surge of new cancer cases in the years to come. We know this can only be accomplished through strong collaboration with our healthcare partners throughout the province.

If you have any feedback on this report or the services CCMB provides, please contact us at CCMBCEO@cancercare.mb.ca. We would be happy to hear from you.

Sincerely,

Gregory Tallon
Chair of the Board of Directors, CancerCare Manitoba

Dr. Sri Navaratnam
President and CEO, CancerCare Manitoba

Everyone who works at CCMB is dedicated to delivering quality care to Manitobans with cancer and blood disorders.

About Us

CancerCare Manitoba is the provincially mandated cancer agency for the province and is responsible for long-term planning and setting strategic priorities for cancer and blood disorders. CCMB provides services to both children and adults. The cancer services provided to Manitobans include prevention, early detection, outpatient cancer treatment, supportive care, and end-of-life care. CCMB is also responsible for radiation protection throughout the province. The Research Institute at CCMB investigates all aspects of cancer and blood disorders, including research to improve patient experience.

CancerCare Manitoba depends on the ongoing support of Manitoba Health, Seniors and Active Living and its close working relationships with regional health authorities to deliver quality cancer services to Manitobans. The generous donations provided by Manitobans to CancerCare Manitoba Foundation (CCMF) are vital to cancer research and providing quality care to Manitobans. CancerCare Manitoba is also supported by the University of Manitoba and Shared Health Manitoba.

CCMB has just over 1,000 staff. The organization's multidisciplinary approach to patient care attracts experts in medical and radiation oncology, the best and brightest scientists, passionate nursing staff and other dedicated healthcare professionals.

CCMB has seven locations in Winnipeg. The main site at 675 McDermot Avenue provides chemotherapy and radiation treatments, patient support services and houses the Research Institute. The second location at St. Boniface Hospital provides chemotherapy and support services to patients. The third location at Misericordia Hospital includes the three cancer screening programs and the Breast and Gyne Centre of Hope.

In 2017, four Winnipeg community oncology sites came under the CCMB umbrella at Victoria General Hospital, Concordia Hospital, Seven Oaks Hospital and Grace Hospital. These locations provide chemotherapy and follow-up care to patients.

In 2018, CCMB merged the Central Referral Office and Provincial Navigation Services into a new program called the Provincial Cancer Referral and Navigation service. This will streamline services for newly diagnosed patients.
In Brandon, in partnership with Prairie Mountain Health, the Western Manitoba Cancer Centre offers radiation therapy, chemotherapy and patient support services.

To provide services in rural Manitoba, CCMB has partnerships with Interlake-Eastern Regional Health Authority, Northern Regional Health Authority, Prairie Mountain Health and Southern Health-Santé Sud. The Community Cancer Program provides outpatient care and support services to cancer patients in 17 Manitoba rural communities.

CCMB patient representatives can be reached at:

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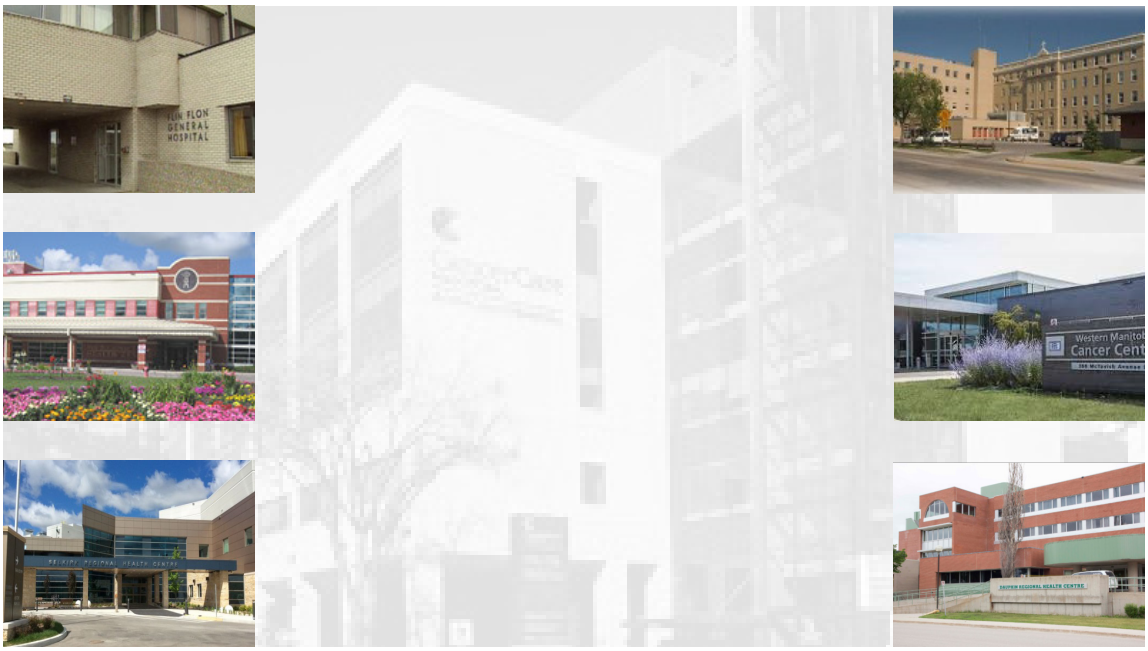
Model of Care

Bringing Patients to Quality and Quality to Patients throughout Manitoba



CancerCare Manitoba strives to provide patient-centered quality cancer care to all Manitobans, regardless of where they live. CCMB's model of care is evidence-based and aims to be fiscally sustainable.

Over the decades, the model of care for cancer has evolved. In earlier years, the treatment of cancer required patients being admitted to the hospital. Today, except for more complex treatments, care is provided on an out-patient basis.

Multidisciplinary care is at the core of CCMB's model of care. It ensures excellence in caring for cancer patients. Multidisciplinary care involves comprehensive care provided by a team of specialists from all disciplines who consult with the patient and then develop an individualized plan for the best evidence-based treatment for the patient. This multidisciplinary approach to care happens for each new patient and is accomplished through the Disease Site Groups.

Today, the two main CCMB facilities, in close proximity to a tertiary healthcare facility, are the central hubs that provide the high-level multidisciplinary care to Manitoba patients. Cancer experts and programs at the central hubs provide leadership and coordination of services that are delivered throughout the province. CCMB also provides education to various disciplines and houses the Research Institute, specializing in cancer and blood disorders research.

Once a patient's treatment plan is formulated and depending on that treatment plan, the patient may receive systemic chemotherapy treatment closer to home at one of the Winnipeg CCMB sites, or at one of the 17 rural community cancer program sites across Manitoba. Through this model, quality care is delivered closer to home for patients whenever possible. If this is not possible, patients are brought to the quality care delivered in Winnipeg at the central hubs. Ensuring the quality of treatment in these peripheral sites is coordinated through the Community Oncology Program at CancerCare Manitoba. For patients requiring radiation treatment, there are two locations where this is provided, in Winnipeg at the main CCMB facility, and in Brandon at the Western Manitoba Cancer Centre.

Once patients with more common cancers have completed their treatment and follow-up care, they are transferred back to their primary care provider with very detailed instructions created by the oncology specialists as to follow-up schedules and referral back to CCMB when and if required. The Transitioning Program at CCMB ensures a smooth changeover for patients referred back to their primary care provider, cancer rehabilitation programs, and in some cases to palliative care services.

CancerCare Manitoba is a provincial agency with a provincial mandate that is planned centrally and delivered locally throughout the province in partnership with other regions. CCMB's current model of care will evolve further as CCMB plans for the future and for the sustainability of cancer services.

Delivering Excellence

Progress Report: Year Two - 2017 to 2018

The Manitoba Cancer Plan 2016-2021, Delivering Excellence, completed its second year in 2017-2018. This chart shows the progress made over two years.

STRATEGIC DIRECTION 1 - TOWARD STATE-OF-THE-ART PATIENT CARE

1. Enhanced access to advances in radiation therapy
2. Ready access to and delivery of novel systemic therapy
3. Increased availability of genetic testing to support personalized treatment
4. Achievement of province-wide leadership in cancer surgery
5. Increased opportunity for patients to participate in clinical trials
6. Established leadership in the broad communication of current, evidence-based knowledge on prevention of cancer and in the conduct of specific prevention programs in selected areas
7. Introduction of new and improved screening methods for early detection of cancer and increased rates of public participation

STRATEGIC DIRECTION 2 - TOWARD TIMELY ACCESS TO MULTIDISCIPLINARY CARE

1. Significant reduction in the time patients wait from when a suspicion of cancer first arises until treatment is initiated
2. Efficient, expedited patient flow within the CancerCare Manitoba system
3. Timely access to quality clinical services close to home
4. Multidisciplinary organization of care
5. Expanded access to specialized urgent care services
6. Provide coordinated and efficient in-patient cancer care in host hospitals
7. Improved planning and broaden options for continuing care

STRATEGIC DIRECTION 3 - TOWARD ENHANCED REPORTING ON PERFORMANCE, QUALITY AND SAFETY

1. Development of a comprehensive and integrated set of performance indicators regarding quality, patient safety, and clinical outcomes
2. Sustained engagement in quality improvement projects, including Medication Reconciliation
3. Advanced methods established for assessing and reporting on the level of patient satisfaction

STRATEGIC DIRECTION 4 - TOWARD BUILDING CAPACITY TO MEET GROWING NEEDS

1. Establishment of a comprehensive Health Information Systems Program
2. Introduction of new and improved operational practices
3. Enhanced process for encouraging high performance of staff
4. Provision of expanded facilities to accommodate increased patient volume, improve operating systems, and enhance the patient experience

STRATEGIC DIRECTION 5 - TOWARD IMPROVED CARE FOR UNDERSERVED POPULATIONS

1. Provision of new and enhanced access to services for First Nations, Métis, and Inuit with special attention to newcomers, the elderly and residents of geographically-isolated areas
2. Development of a new multidisciplinary care program for adolescents and young adults

STRATEGIC DIRECTION 6 - TOWARD BROADENED SCOPE AND ENHANCED STRENGTH OF RESEARCH

1. Expanded scope and strength of research
2. Provision of state-of-the-art laboratories and research technology platforms
3. Greater collaborations to enhance cancer and blood disorders research
4. Increased complement of highly-qualified researchers

- On Track
- Some Progress
- Slow Progress

Vision for Patient Care at CancerCare Manitoba

Dr. Piotr Czaykowski, Chief Medical Officer

In 2015, Dr. Piotr Czaykowski was appointed as the first Chief Medical Officer for CancerCare Manitoba. He has a central role in ensuring excellence in clinical services through a multidisciplinary care model organized by disease site groups. Working with clinical department heads at CCMB, he is responsible for medical standards and the performance of physicians. He plays leading role in provincial clinical and preventative service planning for oncology and palliative care.

When patients and their families raise concerns with CCMB's patient representatives, Dr. Czaykowski works to resolve the issue. He helps determine what drugs and treatments will be offered at CCMB. He ensures physicians have written guidelines on the diagnosis and treatment of many different cancers. And, to keep himself grounded, he still sees patients with genitourinary cancers.

Dr. Czaykowski brings a unique perspective to CCMB, "I have experienced cancer pretty much in every possible way. I have had my own personal experience with it. I have provided care for cancer patients now for 25 years. My dad died of cancer. I think I've seen every face of it. And I think sometimes maybe I understand cancer and its impact better than most other people just because of the life experiences I've had."

When he was 16, Dr. Czaykowski was diagnosed with testicular cancer and went through surgery and chemotherapy. He readily admits he had a tough time, "Being a 16-year-old without hair was unthinkable, so I bought a white tennis hat and they let me wear this tennis hat at school, no matter how dirty it looked. I still remember how exhausted I was trying to get to class on the third floor of the school. I had to stop on every landing. It was quite the experience."

Throughout his treatment he was fascinated by the process he went through and the team that looked after him. "I really liked the way oncology teams worked and the way care in oncology seemed to be so integrated."

After medical school in British Columbia where he grew up, Dr. Czaykowski studied internal medicine in Calgary.

A prominent influence was medical oncologist Dr. Scott Ernst who looked after testis cancer at the Tom Baker Cancer Centre. "He was very good with patients. Seeing the patients reminded me of what I had gone through. I thought this is what I would like to do - to look after patients like the kind of patient I had been. He was a very good role model and I decided that was the route I wanted to go."

Dr. Czaykowski's father, who lived in BC, was a smoker all his life. He was 74 when he became hoarse and started having trouble typing. A CT scan showed lung cancer had spread to his brain. He survived eight months, "I was back and forth with him over that time. Although I greatly appreciated the excellent care he received, it struck me during those eight months that our model of care in Manitoba, particularly our primary nurse model, was more patient and family centered. "

Care that really focuses on the patient requires some key elements. First and foremost there needs to be high quality communication. "When I think about medical oncology I think the most important thing we do is communicate. We communicate the important clinical information: diagnosis, prognosis, treatment plan. But the most important communication comes when we have run out of treatment options. It is incredibly important to be able to communicate to someone bad news in a way that is somehow tolerable to them and those around them, and helps them come to terms with their new reality," says Dr. Czaykowski.

High quality care also requires a system staffed by clinicians who are up-to-date, evidence-based, and, increasingly, work in multidisciplinary teams. Excellent care reflects the compassion and dedication of the clinical team.

The pharmacy is an integral part of the services provided at CCMB. The CMO is involved in the process of evaluating, selecting and introducing new drug therapies into the clinic. One aspect of this involves active participation in the national strategy of assessing the value of new treatments through the Pan-Canadian Oncology Drug Review process. "The introduction of new drugs has changed dramatically in the last five to 10 years. At the moment there seems to be a plethora of new drugs. There is always something coming out, and unfortunately we often have to worry not only about the effectiveness but also the cost of the new agents" says Dr. Czaykowski.

In the last decade, there has been a very strong movement towards assessing the value of new oncology drugs on a national level. This puts all the provinces on the same page. In the past, larger provinces could typically introduce new drugs more quickly; smaller provinces were not so lucky. So now there is national consensus and a national strategy on bringing new drugs on board and Manitoba is in a better position because of that.

CCMB has also been fortunate in its ability to keep up with the evolving treatments employing radiation. "We have been able to provide these treatments because of the willingness of clinicians to learn new skills and because of the tremendous support they get from the whole team providing these complex treatments".

With the current transformation of Manitoba's health care system, the CMO is also examining which cancer patients require hospital stays and whether more treatments can be provided on an out-patient basis. Dr. Czaykowski believes, "we have an opportunity to affect change in the other institutions that will be good for patients."

GLOBAL STRATEGY FOR SUSTAINABILITY OF CANCERCARE

By 2030, it is expected the number of Manitobans diagnosed with cancer will increase by 50 per cent. CCMB has developed a five-point strategy to prepare for this surge which is forward thinking and uses resources efficiently without compromising patient care.

1. **Benchmarking best practices** CCMB participates in global studies comparing cancer treatments and patient outcomes with other provinces and nations. By participating in these studies CCMB adopts the best practices from other organizations to ensure CCMB patients get the best care while ensuring the sustainability of the healthcare system.
2. **Incorporating innovation** in cancer service delivery means changing the way services are delivered. For example, CCMB hopes to establish an outpatient bone marrow transplant clinic. That way patients would avoid a hospital stay and hospital beds will be opened-up for more complex cases. CCMB is also changing its practices to ensure it accommodates the special needs of older patients.
3. **Research and Education** The expanded scope of the Research Institute at CCMB means more made-in-Manitoba research that has an immediate effect on Manitobans with cancer.
4. **Value for money** While demand for cancer services continues to grow, CCMB is working to efficiently provide care to patients without impacting the quality of cancer care Manitobans have come to expect.
5. **Building capacity** CCMB is working to build both human and physical capacity. CCMB trains medical, radiation, pediatric and surgical oncologists, medical physicists and radiation therapists at its facilities. In addition, CCMB has continued to work on reimagining the expansion of the CancerCare Manitoba facility (See page 22).

Providing Cancer Care in all Winnipeg Hospitals

Nurses on the front lines

The primary focus of the department of nursing is to deliver holistic cancer services to our patients. Following the CancerCare Manitoba Cancer Plan 2016-2021 six strategic directions, the Department of Nursing has explored and integrated these directions to optimize patient care, build organizational capacity to meet growing patient volumes, and meet accreditation standards. The team is diverse in its work and responsibilities. The work encompasses medical oncology, surgical and pediatrics, hematology, radiation, blood disorder clinics and treatment, infection prevention and control.

CCMB operates out of the six Winnipeg ambulatory oncology sites: McDermot, St. Boniface Hospital, Concordia Hospital, Seven Oaks Hospital, Victoria General Hospital and Grace Hospital. In this rapidly changing healthcare environment with advanced technology and new research, nurses are challenged to maintain high professional standards and effective care. CancerCare Manitoba continues to strive to provide team members with evidence-based and progressive knowledge. This enables them to optimize their practice in order to provide patients with the necessary education and care needed to successfully manage their disease.

Electronic patient record

In 2017-18, CCMB moved to a paperless system for patient records. The current hybrid system of paper and electronic files is being phased out. The goal is that all information about CCMB patients including demographics, scheduling and test results will be easily accessible electronically. Electronic records save time and resources, allow information to be shared across the CCMB sites and improve patient flow in CCMB clinics. As has been the case with paper records, CCMB is ensuring that it complies with The Personal Health Information Act of Manitoba to protect the health information and privacy of cancer patients.

Oral dispensing of anti-cancer agents

Approximately 50 per cent of new anti-cancer medications are available in tablet or capsule and are taken at home by patients. Many of the newest medications are associated with unique toxicities and require careful dosing and monitoring by oncology pharmacists.

Effective August 2018, a select list of oral cancer drugs will be dispensed through CancerCare Manitoba. This helps ensure patient safety. These select drugs are sometimes taken in combination with other treatments, such as intravenous drugs prescribed and administered at CCMB sites.

Pharmacists at CancerCare Manitoba have access to the most recent and detailed patient records. CancerCare Manitoba pharmacists can contact the prescribing physician quickly in case of questions or concerns. CancerCare Manitoba will also be able to dispense the appropriate quantities to reduce waste.

Quality Cancer Surgery for Manitobans

Provincial Cancer Surgery

One of CancerCare Manitoba's key strategies for 2016-2021 is to provide province-wide leadership in cancer surgery and to report on cancer surgery quality indicators. Dr. Helmut Unruh has been the driving force to move these two strategies forward. Tremendous progress has been made. At the end of 2018 CCMB will be publishing a surgical report on quality indicators of major cancers for the province.

Dr. Helmut Unruh brings 30 years of experience as a thoracic surgeon to the role of establishing provincial leadership in cancer surgery at CancerCare Manitoba. He acknowledges this role has presented some jurisdictional challenges, but he has looked beyond them, "The public thinks if they have a cancer operation there must be some sort of involvement of CCMB. That CCMB is aware of what goes on and CCMB has established some standards that surgeons have to adhere to."

As the surgical lead at CCMB, Dr. Unruh is working towards strengthening connections between those who perform cancer surgeries and CancerCare Manitoba.

Synoptic reporting and quality indicators

Synoptic reporting is a checklist-description of a surgery. It is the only concurrent audit of what takes place in the operating room. Everything else occurs afterwards. Synoptic reporting captures critical data during an operation that could be used to determine quality. These are called key performance indicators or KPIs. This data is electronic, easily retrievable and can be used to generate reports.

For example, in colorectal surgery the surgeon should harvest 12 lymph nodes. If the pathologist received a colon specimen and there were two or three lymph nodes then that was unsatisfactory.

For the past 15 years, surgeons in Manitoba have been involved with the synoptic reporting initiative through the Canadian Partnership Against Cancer. Over this decade and a half, the KPIs have matured and now provide a better picture of cancer surgery in Manitoba.

This year, for the first time, CCMB will publish a report using this surgical quality indicator data. The KPIs will be analyzed according to socio-economic status, place of residence of the patient, as well as other factors.

For the past two years, individual surgeons who participate in synoptic reporting have been receiving a personalized report on how they are doing in the KPIs compared to other surgeons in Manitoba and surgeons in two other provinces. This project has been funded by CCMF for the past two years.

"The surgeons are very responsive. If they see they are an outlier on one or two of the indicators they call our staff right away and they want to discuss it and make sure we got it right. This drives improvement. One thing surgeons respond to is information. You give them information about how they're doing and they'll respond to it," says Dr. Unruh.

Currently about 20 Winnipeg surgeons are participating in synoptic reporting on a voluntary basis in Manitoba. Dr. Unruh says, "The next step is to engage surgeons in the other health regions. That's where the next big growth is going to be."

> **"The next step is to engage surgeons in the other health regions. That's where the next big growth is going to be."**
>
> **Dr. Helmut Unruh**
> *Provincial Cancer Surgery Lead*

Role of Medical Physics

Using new technology to treat cancer

CancerCare Manitoba is establishing itself as a world leader in the treatment of early-stage lung tumours. Medical experts at CCMB and the Health Sciences Centre's Kleysen Institute for Advanced Medicine are conducting a study that will benefit patients with lung tumours smaller than five centimetres, including those who are usually too elderly or sick to undergo regular, scalpel-based surgery.

This has been facilitated by new technology that allows the position of small beacons, implanted at the lung tumour, to be tracked in real-time. This position information is then used to control the radiation beam, delivering radiation to the tumour only when it is in an exact, known position.

Known as the Calypso Guided High Precision Stereotactic ablative radiosurgery, it is the first Phase II lung trial in the world to open using this technology.

The tracking technology is based on unique radio frequencies emitted by the implanted beacons, which are then used to triangulate their position. This equipment, was the first available in Canada and was installed by medical physicists from CCMB.

Thoracic surgeons at HSC implant three beacons, each the size of a grain of rice, into the small airways around the tumour. It's a solution to a tricky problem encountered when treating lung tumours, which move up and down when a patient breathes, sometimes by several centimetres.

Common practice in stereotactic ablative body radiosurgery (SABR) had been to deliver radiation to where the tumour could be in time. The new technology allows the treatment margins to be reduced and focus the radiation more tightly on the tumour when it is in a specific location. This significantly reduces the volume of normal or healthy tissue exposed to radiation, especially if the tumour motion is large.

"We are hoping to reduce the collateral damage to the normal lung tissue around the tumours and increase quality-of-life benefits and tolerability for our patients who undergo it", says Dr. Julian Kim, radiation oncologist at CCMB and lead investigator on the trial.

The Calypso system is also flexible in terms of treating various disease sites. It is used for implantation in prostate, liver and surface affixation in breast and lung patients. This flexibility is beneficial for both routine clinical use and research applications. With the support from CancerCare Manitoba Foundation the Radiation Oncology Program at CCMB is extending use of Calypso in breast and prostate cancer by next year.

The Calypso system also treats other disease sites. It is usable for implantation in the prostate and liver to directly reveal the tumour location and for breast and lung patients where its position correlates with internal tumour motion. This flexibility is beneficial for both clinical use and research applications.

Before treatment, some breast and lung cancer patients will undergo a simple outpatient procedure where a transponder is affixed on the patient's chest. For prostate cancer patients, the transponders would be inserted directly into the prostate via small needles under ultrasound guidance. Once situated, the transponder positions are monitored in real-time with external equipment during the radiation treatment. If the tumour moves out of its planned position, the X-ray beam is automatically stopped. When the tumour moves back into position, the beam is quickly switched on again. By monitoring the tumour motion in real-time, the radiation beam is focused accurately and precisely on moving tumours and therefore reduces radiation exposure to nearby normal tissues.

The use of SABR as a scalpel-less surgery option to treat primary or metastatic tumours (tumours that have spread from where it started to another part of the body) has been growing internationally for many years. Manitoba established its SABR program four years ago.

L to R: Dr. Lawrence Ryner , Dr. Boyd McCurdy

Personalized Medicine

Chimeric Antigen Receptor-T cell (CAR-T) therapy

Thanks to a recently opened clinical trial at CCMB, Manitoba patients will benefit from a novel form of personalized immune cell treatment, CAR-T therapy. For the treatment, immune cells are removed from the patient and sent to a centralized facility to be genetically modified. When the immune cells are given back they are designed to specifically attack the patient's cancer.

CAR-T therapy may be used in patients with certain relapsed aggressive blood disorders like lymphoma and acute lymphoblastic leukemia. CCMB and its regional partners have been working aggressively to open trials using CAR-T therapy to develop the expertise to administer this type of therapy within Manitoba.

In his role as a hematologist at CancerCare Manitoba and Director of the Manitoba Blood and Marrow Transplant Program, Dr. David Szwajcer is excited about CCMB's ability to participate in this clinical trial. 'We feel it is important for Manitobans to access this type of therapy locally rather travelling elsewhere for it,' says Dr. Szwajcer. 'We anticipate there will be five to seven patients a year with relapsed Diffuse Large B Cell Lymphoma (DLBCL) that would be eligible to participate in the trial that our center has opened.' Patients will be randomized to receive the standard approach to treating a relapsed lymphoma versus receiving this newer therapy.

"Based on published studies only 30 to 40 per cent of patients with relapsed DLBCL will have long term survival. We hope that by exploring novel treatments like CAR-T therapy we will be able to improve the outcomes of people living with this disease," says Dr. Szwajcer.

The conditions that we are able to treat with personalized immunotherapy will likely continue to expand. Getting familiar with how to administer this type of therapy is an important objective for CCMB.

> **We feel it is important for Manitobans to access this type of therapy locally rather than travelling elsewhere for it,**
>
> **Dr. David Szwajcer**
> *Director, Manitoba Blood and Marrow Transplant Program*

Blood Disorders Treatment and Research

Putting Manitoba on the map

L to R: Dr. Donald Houston, Dr. Ryan Zarychanski

Blood disorders are common and can be immensely complicated. It's fortunate that, at CancerCare Manitoba, patients have access to one of 14 hematologists who diagnose and treat common and rare blood disorders. CancerCare Manitoba is unique among the provinces in that all blood disorders are looked after under one roof. The hematologists at CCMB diagnose and treat the malignant hematologic disorders (such as leukemia, lymphoma or myeloma), and all other blood disorders as well.

"One of the defining characteristics of the practice of hematology is the enormous diversity of disorders we diagnose and care for," says Dr. Donald Houston, hematologist at CCMB. "In contrast to the majority of patients referred to CCMB, patients with suspected blood disorders are referred to us to get a diagnosis. They might be anemic, have a blood clot, or have abnormal bleeding. We work them up to arrive at a diagnosis and institute a treatment plan. That's quite different from medical oncology where most patients have already been diagnosed with cancer before they are referred. While a substantial proportion of the patients we see might be ultimately diagnosed with a blood cancer, many will not. By providing hematologic services under one roof, we provide more seamless continuity of care for patients with blood disorders."

In addition to diagnosing and treating blood disorders at CCMB, the hematologists are engaged in leading-edge research, funded by CCMF, to help improve survival and quality of life for patients with blood disorders. Dr. Ryan Zarychanski is one of CCMBs leading clinician-scientists who chairs the Acute Care Hematology Research Cluster, an interdisciplinary research team that conducts clinical trials in patients who require blood transfusion or anticoagulation, or may be severely bleeding. In addition to defining best practice for patients with blood disorders, the cluster is providing opportunities and mentorship to train the next generation of academic hematologists in Manitoba.

"We are fortunate to have an enthusiastic stream of trainees seeking mentorship and teaching so that they can become scientists in Manitoba. Just 10 years ago such training opportunities did not exist in Manitoba or at CCMB," says Dr. Zarychanski.

Dr. Zarychanski and the hematologists are putting CCMB on the map with national and international clinical trials they are leading. Currently Dr. Zarychanski and team are conducting an international trial evaluating the use of a simple blood thinner in patients with organ failure – the only research team in Manitoba leading multi-site, multi-country clinical trials. He and the team are currently preparing to launch a 5800-patient trial to evaluate the ability of an inexpensive drug to reduce bleeding and the need for transfusion in major surgery. The research has the potential to save up to 10 per cent of Canada's blood supply and is expected to define best practice in Manitoba and around the world.

Adolescents and Young Adults with Cancer

Psychosocial oncology

L to R: Karen, Ian, Desirae, Jason

Approximately 120 new cases of invasive cancers are diagnosed each year in the adolescent and young adult (AYA) population (15-29 years of age) in Manitoba. This population is often lost in the cancer care continuum. CCMB is working to improve psychosocial, educational and vocational support during and after cancer therapy for this population.

In 2018, CCMB hosted a one-day information and support event for young adults with cancer. Sexuality and information about fertility was one of the presentations. Dr. Anne Katz PhD, sexuality counsellor at CCMB talked frankly about: '*Everything you wanted to know about sex after cancer, but were afraid to ask.*' She discussed the difference between sexuality and intimacy, and how physical changes such as hair loss and neuropathy feel worse for young people. "Cancer removes the certainty in our lives, as humans we don't like living with uncertainty. It affects our ability to feel confident," says Dr. Katz. She encouraged the young people who attended to forgive their bodies.

She also suggested that participants ask their oncologist about their fertility status and provided information on fertility preservation, which is expensive and not covered by Manitoba Health.

Ian Scott, psychosocial oncology clinician at CCMB is a social worker who counsels cancer patients. In his experience the first challenge for AYA cancer patients is often delayed diagnosis. The assumption is it isn't cancer. Another issue is social isolation. Peers are concerned about saying the wrong thing so they say nothing at all.

Receiving a cancer diagnosis is a threat to independence for AYAs. Many young adults with cancer have to move back home. School is interrupted and there is often brain fog when they return. Some are parents and patients at the same time.

At the event, Ian emphasized the importance of self-compassion, and advised the participants that CCMB's psycho-social oncology department is available to them and their families.

Three AYA cancer patients provided their perspective on living with cancer. Jason, 33, a labour lawyer said, "It's almost like living with someone you don't like for your entire life." He advised others to put those thoughts away from time to time in order to cope.

Also participating were Karen, 30, with soft tissue sarcoma that went undiagnosed for seven years and Desirae, 24, with a blood disorder called aplastic anemia who talked about being grateful.

Although about four per cent of all cancer patients are under 29, only 0.4 per cent of research dollars go to AYA cancer research. Evidence suggests that some cancers in adolescents and young adults may have unique genetic and biological features. Researchers are working to learn more about the biology of cancers in young adults so they can identify molecularly-targeted therapies that may be effective in these cancers.

Funding for CCMB's AYA program is provided by CCMF.

Caring for Children with Cancer

Expansion of psychosocial oncology to pediatrics

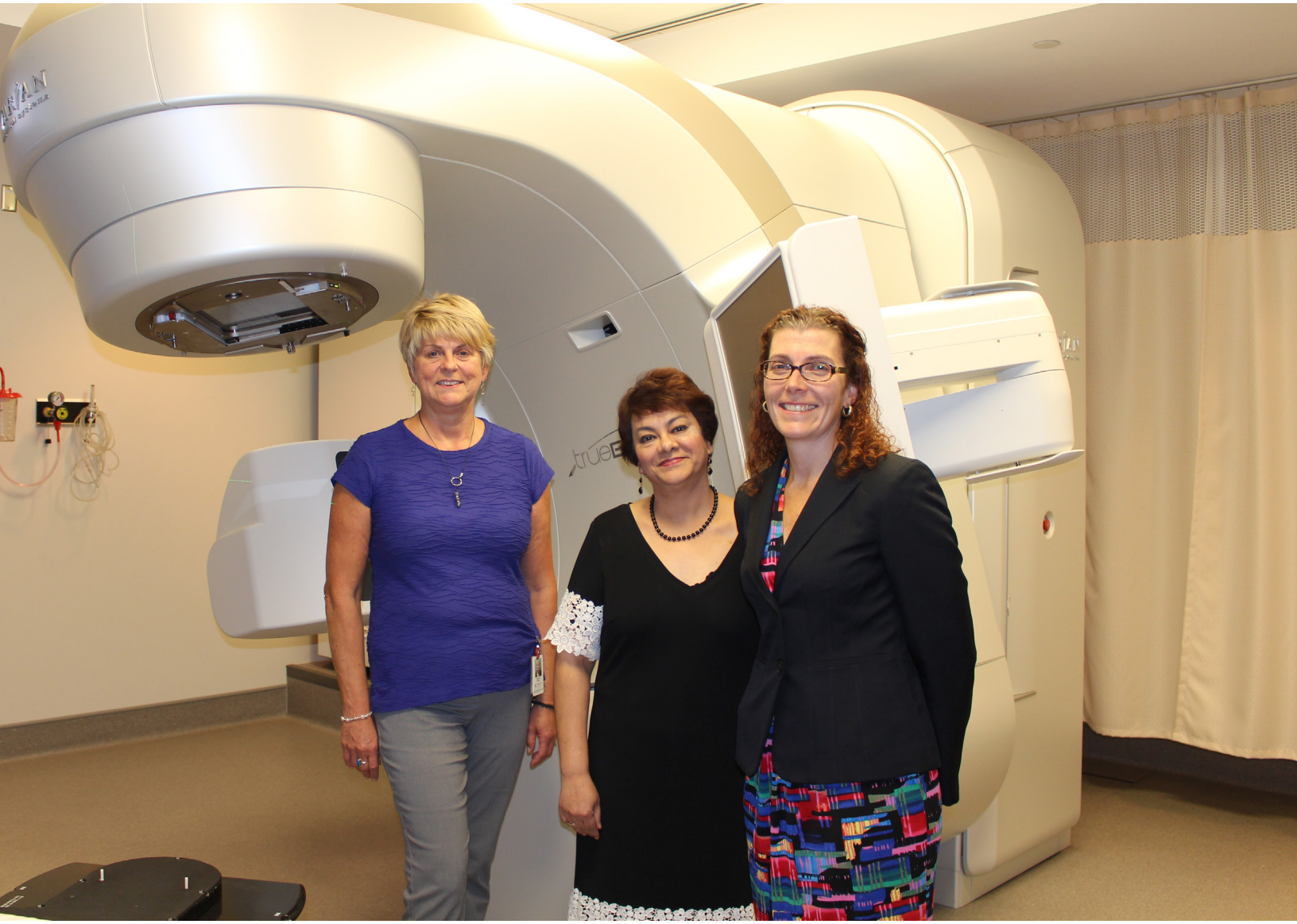
Each year about 50 children are diagnosed with cancer in Manitoba. This diagnosis causes significant distress for parents and siblings and is a huge interruption in the family life cycle. In the past, families have advocated for the same scope of services that are currently available for adults receiving treatment at CCMB. This year CCMB will expand its psychosocial oncology services to include children and their families.

The clinician will have training and expertise in working with children and families. In addition to psychological and emotional issues, the counsellor will also assist families with practical issues, such as a parent's need to take leave from work and school interruptions for children. The expectation is that a lot of the work will be with parents.

"Cancer happens in the middle of lives. All families have cracks and flaws and very often when serious illness strikes it's not like a made-for-TV movie where everybody comes together and goes 'this is really bad, we have to all love each other and be kind.' Very often the difficulties experienced previously become amplified. These are the kinds of things we work with," says Elizabeth Payne, Supportive Care Coordinator at CCMB.

Rapid Access Clinic

Radiation care when needed



L to R: Sandra Iftody, Dr. Rashmi Koul, Jennifer Moyer

CancerCare Manitoba's Rapid Access Clinic provides radiation therapy in a timely fashion for new cancer patients with terminal disease, palliative care patients, and patients with metastatic disease of the bone (cancer spread from primary site to another part of the body). The goal for rapid access radiation therapy is same-day treatment. This will improve a cancer patient's quality of life and help manage their pain and symptoms while they wait to see a medical, radiation, or surgical oncologist in their cancer journey.

The Rapid Access Clinic includes a health care team of experts. Patients can connect with a nurse practitioner or registered clinical radiation therapist assistant who can help with follow-up questions. Providing rapid access will help decrease patient anxiety, improve access to care and patient outcomes.

Report on Cancer System Performance

Current status of cancer care

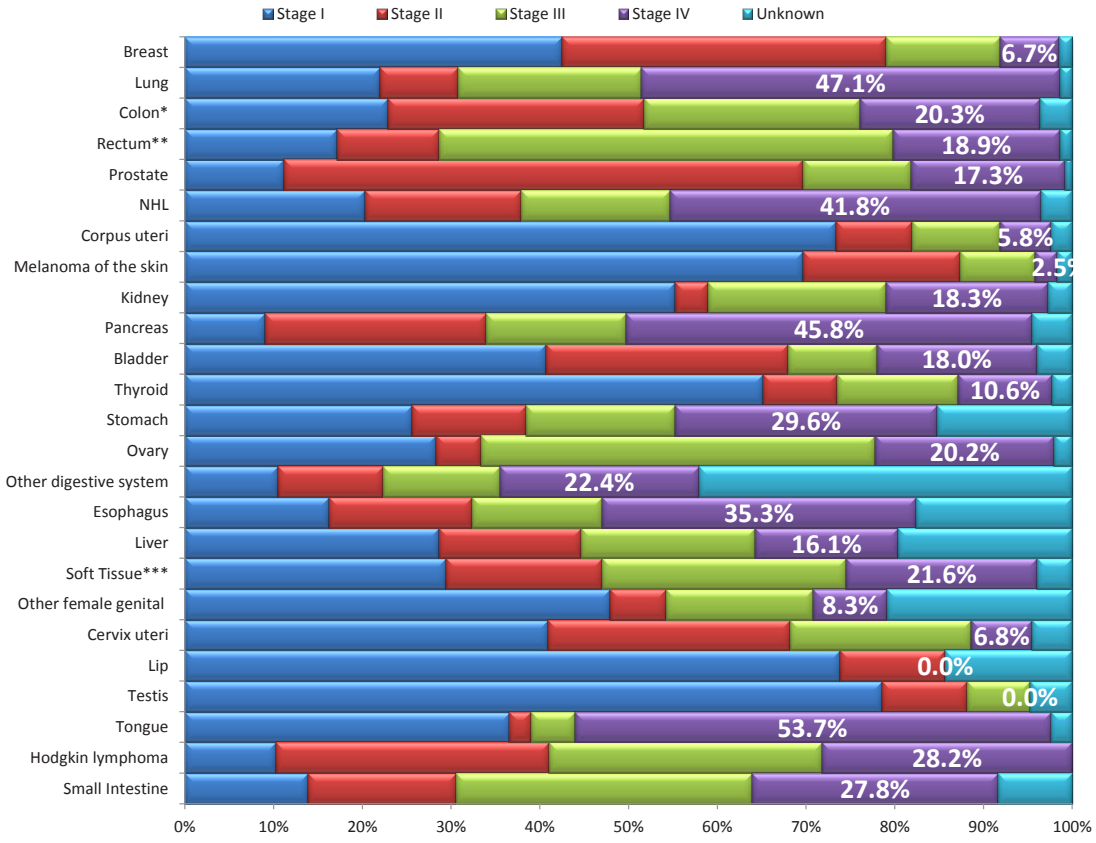
In 2019, CancerCare Manitoba will be releasing the Manitoba Cancer System Performance Report. This report will contain a comprehensive set of performance and quality indicators. CancerCare Manitoba collects this information in order to monitor and measure its performance, analyze trends, compare its performance to targets and benchmarks and improve system efficiencies and quality of care.

Reporting this information to the public, patients and other stakeholders promotes a system of accountability and contributes to a culture of transparency. As the provincial leader for cancer care in Manitoba, patients and partners look to CCMB for this information.

The 2019 Cancer System Performance report will provide Manitobans with information on these topics:

- Cancer prevention and risk factors
- Early detection
- Diagnosis
- Wait times
- Treatment
- Cancer outcomes
- Clinical trials
- Patient satisfaction
- Costing
- Projections for the future

For many cancers, finding it early can result in more effective treatment and positive outcomes. Often individuals who are diagnosed with a later-stage cancer do not have the same chances of a cure. The chart below is an example of the type of data that will be included in the Manitoba Cancer System Performance Report. It describes cancer diagnosis by stage. The chart shows only 6.7 per cent of breast cancers are diagnosed at Stage IV. Contrast that with lung cancer, where 47.1 per cent of patients are diagnosed with Stage IV cancer. The full report will be released in 2019 and posted on cancercare.mb.ca



Joining Forces to Improve Patient Care

Building a team for the future

Dr. James Johnston is one of our senior clinician scientists who has been a mentor for oncologists and scientists over the years. He has facilitated the successful career path for many researchers. Dr. Johnston played a key role in my decision to specialize in oncology and continues to be a mentor.

Dr. S. Navaratnam
President and CEO, CancerCare Manitoba

Dr. James Johnston is a clinician scientist at CancerCare Manitoba. He works with fellow hematologists Dr. Versha Banerji, Dr. Dhali Dhaliwal, and Dr. Lin Yang in the Chronic Lymphocytic Leukemia clinic and a multidisciplinary team of clinicians, scientists and researchers throughout CCMB to improve the health outcomes for Manitobans diagnosed with CLL. His studies include the basic science and epidemiology of CLL, in addition to clinical trials.

"Building upon CancerCare Manitoba's mandate to provide specialized oncology services across the province, we are the only province-wide CLL centre in Canada. Team members bring expertise from basic science, epidemiology, nursing, immunology and clinical trials to our patient-centered program," says Dr. Johnston. "We believe it is important to engage the patients and their family members in our team approach, teach them about their disease and how we approach treatment."

The CLL program provides annual education sessions and research updates for patients and their family members that are tele-linked to rural sites and always well attended. "We also started the Canadian CLL meeting 12 years ago which brings clinicians, scientists and trainees from across Canada and the United States to Manitoba to share findings and promote future collaboration."

The CLL program at CCMB is unique because it is always evolving and incorporating new discoveries into clinical care. Local research found that CLL patients have a high risk of skin cancer and secondary cancers, so the team now includes Dr. Marni Wiseman, a dermatologist, and promotes cancer screening and early detection. Regardless of where patients live in Manitoba, their care is supervised by the CLL clinical team ensuring everyone has access to optimum care.

Current research being conducted by the Manitoba CLL Research Network is looking at the biology of CLL, overcoming drug resistance, examining new treatments, and the impact immunizations against pneumonia and shingles may have for CLL patients.

The CLL team also includes a clinical nurse specialist, Erin Streu, who leads a program studying the value of subcutaneous gamma globulin to protect patients from infection. She teaches patients how to give themselves treatments at home to boost their immune systems rather than coming into CCMB for a treatment once a month.

In the past, the only treatment for CLL was chemotherapy. In the last two or three years new drugs have completely changed the treatment landscape. Translational research nurses Donna Hewitt and Linda Davidson work to inform patients about the CLL team's research projects and enlist their participation. They are also involved in a local project that looks at how Ibrutinib, a new targeted therapy, impacts patient's everyday health and functioning in addition to treating CLL. "There are exercises that measure frailty, such as the ability to walk short distances, measuring hand grip strength, and the ability to sit down and stand up repeatedly. We watch the progress before they start the drug Ibrutinib, and after," says Ms. Hewitt. "Sometimes, you really see a difference."

Dr. Johnston says the real backbone of the CLL research program is the tumour bank and clinical database. "That is a vital part of what we do. Almost all patients who come to us will donate their blood samples to the bank. These samples are collected and stored in freezers. We have over 1000 samples which can be used to answer future research questions. We work closely with the Mayo Clinic in Rochester and have collaborators and partnering requests from across the world who access the bank."

With the patient samples that are collected, the CCMB team can follow the patient's progress through the whole cancer journey. "Winnipeg is a small centre but we have the strength of being a provincial agency. With a population of 1.3 million, the specialized clinic can follow all Manitobans diagnosed with CLL and give them access to not only optimum care but also benefit in real time from the latest research findings," says Dr. Johnston.

CCMF has been providing support for the CLL team and its activities for many years.

Front Row, L to R: Shannon Kornelsen, Monroe chan, Nicole Wozny, Charlene Bergen, Mary Natividad, Yun Li, Darlene Zwarych
Back Row, L to R: Dr. Leigh Murphy, Andrea Fristensky, Michelle Parisien, Mandy Squires, Dr. Carla Penner

Reimagining the CancerCare Manitoba Expansion

Ongoing dialogue at a critical time

CancerCare Manitoba Expansion

In order to accommodate the growing number of Manitobans with cancer, advanced treatment options and new technologies, the need for an expanded CCMB facility is undeniable.

In February 2017, Manitoba Health asked CCMB to reimagine the building of a new facility connected to the existing facility on McDermot Avenue. Compared to the initial proposal submitted, CCMB has reduced the footprint of the expanded facility by 30 per cent and the scope of the renovations required in the existing building by 40 per cent.

CCMB has also reviewed alternative finance and funding models to ensure the building will be constructed in a cost-efficient manner. This was Phase I of the reimaging project.

Phase II includes examining short and medium-term strategies to mitigate the growing patient volumes at the current CCMB McDermot site. CCMB is developing a cost estimate for the project that includes a financing strategy and a value-for-money study. CCMB is continuing to work with CancerCare Manitoba Foundation on these plans. In 2015, the Foundation purchased the land for the location of the expanded facility.

EMPLOYEE ENGAGEMENT

Staff from CCMB participated in the Manitoba Dragon Boat Festival in September, 2018 to benefit children's cancers.

Staff Appreciation BBQ for CCMB employees was held on August 29, 2018.

Building Human Capacity

New physicians at CancerCare Manitoba

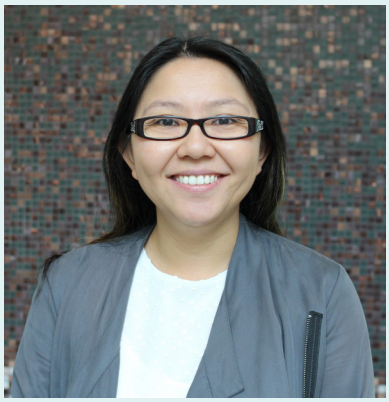
Dr. Danielle Desautels

Dr. Desautels is a medical oncologist. She graduated from medical school at the University of Manitoba and went on to complete her residency training in internal medicine followed by subspecialty training in medical oncology. She then pursued a clinical fellowship in breast cancer at the Sunnybrook Health Sciences Centre and a Master's Program in Clinical Epidemiology and Health Care Research through the Institute of Health Policy, Management and Evaluation in Toronto. Dr. Desautels treats breast cancer.

Dr. Craig Speziali

Dr. Speziali is a hematologist and bone marrow transplanter. He has his BSc (Hons) and MSc degrees in Microbiology and Immunology from Western University. He completed his Medical Degree at the University of Toronto, and a residency in Internal Medicine at the University of Calgary before coming to Winnipeg for specialty training in adult hematology at the University of Manitoba. Most recently, he completed a fellowship in Blood and Marrow Transplant at CancerCare Manitoba. He is interested in clinical outcomes research in leukemia and blood and marrow transplantation. Dr. Speziali treats blood disorders and works with the Manitoba Blood and Marrow Transplant Program.

Dr. Lin Yang



Dr. Yang is a hematologist. She completed her medical degree at McMaster University and trained in Internal Medicine and Hematology at the University of Manitoba. Prior to her medical training, she completed her PhD at the University of Toronto, with a focus on molecular genesis in acute leukemia. During her residency training, she focused on translational and clinical research in CLL. Dr. Yang treats blood disorders.

Caring for Northern Manitobans with Cancer

Visiting the North

In 2017, CancerCare Manitoba began a collaborative province-wide approach to address the needs of the underserved by including the Underserved Populations Program under the umbrella of the Community Oncology Program. For over 10 years, CCMB has offered programs and services for First Nations, Inuit and Métis people with cancer or who should be screened for cancer. As a result of this consolidation, CCMB is now increasing its outreach to the elderly and newcomers in Winnipeg and in rural areas.

Visit to the north

In January 2018, a group from CCMB visited three Community Cancer Programs and pharmacies in northern Manitoba and discussed how to strengthen relationships in light of increasing cancer incidence and demands on the system. They also met with northern pharmacists to review new National Association of Pharmacy Regulatory Authorities standards. Dr. Sri Navaratnam, President and CEO of CancerCare Manitoba, is the Executive Sponsor for the provincial plan to implement the new standards by January 1, 2021.

Meetings in The Pas included the RHA leaders, the regional pharmacy director and hospital executives from The Pas health region. The Cree Nation Tribal Health also conveyed their priorities, and an action plan to improve relations was created. While in The Pas, part of the group visited the Beatrice Wilson Health Centre on the Opaskwayak Cree Nation. The staff there spoke about opportunities and challenges, gaps and barriers in the system for indigenous clients with cancer.

In Flin Flon, activities included meetings with physicians and the liaison for indigenous people at the Flin Flon hospital, tours of the pharmacy, the cancer program and the new Emergency Department.

In Thompson, discussions were with staff from the community cancer program, physicians, pharmacists, diagnostic services and breast screening. The education and liaison nurse for CCMB's Underserved Populations Program, Allison Wiens, also visited the Tataskweyak Cree Nation in Split Lake.

CCMB continues to build relationships with the First Nation communities. Next steps include identifying physician leaders for oncology at each community, developing strategies for pharmacy standards implementation and identifying opportunities for increased community engagement.

L to R: Dr. Navaratnam, Helga Bryant, Northern RHA CEO

First Nations, Métis and Inuit

In January 2018, CCMB held a one-day consultation in Winnipeg, sponsored by the Canadian Partnership Against Cancer (CPAC). Participants included indigenous partners from across the province, healthcare providers, tribal councils and representatives from RHAs, Manitoba Health and Health Canada who work with indigenous populations. During the session they shared their knowledge and expertise and identified opportunities to collaborate to better meet the needs of the FNMI peoples in Manitoba. As a result, two expressions of interest letters were submitted to CPAC for funding: to identify champions in the local communities and to develop a map for health care providers of the cancer services available in FNMI communities.

MANITOBA CANCER NAVIGATION SERVICES

Health Regions

- Northern Region
  1-855-740-9322
- Interlake Eastern RHA
  1-855-557-2273
- Prairie Mountain Health
  1-855-346-3710
- Winnipeg Regional Health Authority
  1-855-837-5400
- Southern Health/Santé Sud
  1-855-623-1533

Caring for Adolescents and Young Adults

Strategy to meet the special needs of AYAs

L-R: Dr. Brent Schacter, Dr. Geoff Cuvelier

In Manitoba, about 120 new cases of cancer are diagnosed each year in adolescents and young adults (AYAs) from 15 to 29 years of age. AYAs are a unique cancer population. They have different cancers, as well as psychosocial and fertility issues that distinguish them from children and adults with cancer.

In 2017, thanks to a grant from CancerCare Manitoba Foundation, an AYA Psychosocial Oncology clinician was hired by CCMB to provide counselling for adolescents and young adults and their families and to develop information and support programs for them. Since February 2017, 199 individuals between 15 and 35 years of age were referred to CCMB for these support services.

CCMB physicians, Dr. Brent Schacter and Dr. Geoff Cuvelier, are co-chairs of the AYA Manitoba Regional Action Partnership. The Manitoba AYA RAP committee is composed of both pediatric and adult oncologists as well as representative of nursing, social work, psychosocial oncology, palliative care, the pediatric long-term follow-up clinic, child life plus AYA patients.

This committee has developed a strategic plan for the multidisciplinary care of AYA patients. The plan addresses these needs:

- Psychosocial support
- Fertility preservation
- Clinical trials enrolment
- Development of a specific space for AYAs at CCMB

All adolescents and young adults should have the opportunity to be informed about the options for fertility preservation. Certain diagnoses require the immediate start of treatment, this situation makes fertility preservation challenging. The plan calls for the availability of urgent fertility counselling at the time of diagnosis and facilitating access to a fertility clinic. Currently in Manitoba fertility preservation is only offered at Procrea-Heartland Fertility Clinic. Preservation is expensive and is not covered by Manitoba Health, although a Manitoba tax credit is available for partial compensation.

Clinical trials are an important part of AYA care. The plan calls for increasing AYA enrolment in clinical trials in adult or pediatric disease site groups that include eligibility in the AYA age range.

A defined space at CCMB for adolescents and young adults is also being proposed as part of the CCMB expansion project. At this time, AYAs receive chemotherapy either with young children or much older adults. This does not meet AYA's need for socialization and connection with each other and adult patients frequently feel uncomfortable receiving therapy next to AYA patients and request to be moved to another area. Both groups' experience is being affected by the current situation.

The proposal also includes the addition of nutritional and occupational support at CCMB and the use of social media as a means to be more responsive to the needs of AYAs.

CancerCare Manitoba RESEARCH

The goal of the Research Institute at CancerCare Manitoba is to have a positive impact on the lives of cancer patients.

Cancer research is possible in the province thanks to the enormous support of Manitobans through their generous donations to CancerCare Manitoba Foundation. Since 2000, the Foundation has granted more than $111 million to support CancerCare Manitoba. Almost 70 per cent of those dollars are dedicated to the Research Institute.

Research drives excellence in the care of patients. Studies have demonstrated patients have better outcomes in facilities that combine education and research with patient care in one environment.

Unfortunately, the world is experiencing a surge in cancer cases. The average number of annual cancer cases ten years from now will be nearly 50 per cent higher than it is today. Globally, nationally and provincially, continuing investment in cancer research is critical to addressing this growth in cancer diagnoses.

Manitoba has a long and proud history of conducting cancer research. In 1930, The Manitoba Cancer Relief and Research Institute Act was proclaimed in this province. In 1969 the Manitoba Institute of Cell Biology was created with a research focus on cancer cells. With the expansion of scope in 2015, the Research Institute at CancerCare Manitoba is now conducting clinical research, heath services research and research about our patients' experience.

This year, the Research Institute held a one-day strategic planning session that brought together 70 Institute researchers. Dr. Stephen Robbins, co-chair of the Canadian Cancer Research Alliance and the Scientific Director of the CIHR institute of Cancer Research, was invited to provide advice on the best direction for the Research Institute in the future.

CCMB is pleased to present within its Annual Progress Report, highlights of the research currently being undertaken at the Research Institute with a special emphasis on advanced cancers.

Improving Outcomes for Patients with Breast Cancer

Dr. Leigh Murphy, Senior Scientist, Research Institute at CancerCare Manitoba
Co-Director, Manitoba Tumour Bank

Accurately predicting if tumours will respond to treatment is an important goal of personalized approaches to cancer diagnosis and treatment to ensure the best possible outcome for breast cancer patients. That is the focus of Dr. Leigh Murphy, Senior Scientist at the Research Institute at CCMB. She has been studying breast cancer since 1977.

Her work is focused on estrogen receptors (ERs), which are proteins in breast cancer cells. It was long believed there was only one kind of estrogen receptor, but another has been found. As well, there are variations of each ER, including chemical changes on each ER protein. By studying these variations and changes on the ER she hopes to uncover more accurate predictors of prognosis and treatment.

"Back in the 1960s, when it was first discovered that some breast cancers expressed estrogen receptors, the idea clicked that female hormones were driving breast cancers in some cases. That suggested the idea that stopping estrogen action through the ER could be a way to stop the growth of these cancers. Tamoxifen was found to do this. Tamoxifen changed the outcome of many breast cancer patients and has saved millions of lives," says Dr. Murphy.

Dr. Murphy is also co-director of the Manitoba Tumour Bank. Established in 1993, and by CancerCare Manitoba Foundation, the Manitoba Tumour Bank is a collection of tissue, blood and marrow and related clinical data from Manitobans with cancer. The Tumour Bank has been supported by funding from Cancercare Manitoba Foundation since the early 2000s.

Most cancer patients undergo a biopsy and blood tests as part of their diagnosis. After diagnosis and other tests have been completed, and with the consent of the patient, the Tumour Bank organizes the extra blood samples and any left-over tissue specimens and the associated clinical information. The samples are available for future research and clinical purposes. The samples are securely stored in large freezers at CancerCare Manitoba. Information is never released from the bank with any label that might allow it to be traced to an individual

patient. When it was established, the Tumour Bank only collected breast cancer tissue samples, but it now collects samples from head and neck tumours, lung, ovarian, and prostate cancers and normal breast tissue. In addition, the Tumour Bank collects blood and marrow for leukemia and other cancers.

Researchers from outside of CCMB who use the samples are charged the costs of storage and release, but no tissue or information is sold. The Bank provides an important resource both for cancer research at the Research Institute and for researchers across Canada and internationally.

According to Dr. Murphy, the Tumour Bank is a way of moving basic science information, "that's the value of tumour banks and bio specimen banks. The importance of access to that sort of research resource over the last couple of decades has gained a lot of importance. So there is increasing need and increasing desire to have access to these banks," says Dr. Murphy.

Andrea Fristensky loading samples into the Tumour Bank freezer

CANCER REGISTRY

CancerCare Manitoba is mandated under The Public Health Act to maintain information on all cancer cases in the province. The Manitoba Cancer Registry is a data system for the collection, management and analysis of that data. It includes demographic information, tumour-specific descriptions, basic treatment information and outcome.

The data is collected by Cancer Registrars who are trained and certified health information professionals who collect, classify and maintain this important information. Registrars record details on the type of cancer, place, date, method and stage at diagnosis and other details, including treatment information such as surgery, chemotherapy or radiation.

Gail Noonan has been the manager of the Manitoba Cancer Registry for 12 years. "It's almost like you're a detective trying to complete a patient's cancer journey from beginning until they're free of disease or until they pass. We record their very first diagnosis, all their treatment, if they come back and if they recur, we record extra treatment. Everybody's cancer journey is different," says Ms. Noonan, who retired this year after 38 years at CCMB.

While these details interest healthcare researchers, the Registry also plays an important role in the management and delivery of cancer services. The Registry helps CCMB answer questions arising from various aspects of cancer, including how to better prevent cancer, detect it earlier, treat it better and assist those with incurable cancers to live longer and more fully.

The Manitoba Cancer Registry has once again received Gold Certification, which is the highest standard of the American Association of Central Cancer Registries.

Treating Advanced Cancers

Brain cancer research

L to R: Dr. Marshall Pitz, Dr. Marco Essig, Dr. Harvey Chochinov, Dr. Lawrence Ryner ***Not in Picture:*** Dr. Thomas Klonisch

Glioblastoma multiforme or GBM is the cancer that killed the Tragically Hip's Gord Downie. It is the most common and most aggressive brain cancer with an average survival after diagnosis of less than 18 months. Thanks to a grant from CancerCare Manitoba Foundation, researchers at CCMB are working to improve the care Manitobans with glioblastoma receive at CCMB.

According to Dr. Marshall Pitz, who treats brain cancer patients and is leading this project, the researchers are hoping to answer three questions. The first concerns the merits of advanced MRI techniques to monitor the progression of the tumour. Currently the first treatment glioblastoma patients receive is surgery. Then they receive chemotherapy and radiation. Patients undergo intermittent MRIs to see how they are responding to the treatments. About half the time, the MRI shows the tumour has increased in size. For some of these patients this apparent progression is actually an immune response and not a growth in the tumour. This is called pseudo progression. "The trouble is you can't tell the difference between whether it is progressing cancer or it is a response to the treatment. Obviously, it is important to determine which is which. With our current MRI techniques we can't tell that," says Dr. Pitz.

The question for the CCMB research team is whether by using advanced MRI techniques they can better predict if the tumour is growing or if it is pseudo progression. As part of this project, Dr. Lawrence Ryner a physicist at CCMB will be looking at these MRIs. Using software, he will examine the imaging physics data behind the MRI picture to determine if there is some sort of signature in the data that indicates real tumour growth. The project also involves Dr. Marco Essig, the Director of Diagnostic Imaging at WRHA and an adjunct scientist at the Research Institute at CCMB.

The second question the team hopes to answer is the effect of pseudo progression on patient wellbeing. Dr. Harvey Chochinov, a psychiatrist and senior scientist at the Research Institute at CancerCare Manitoba will be looking at the quality-of-life questionnaires patients complete prior to their appointments for MRI scans. Dr. Chochinov will examine the level of distress in patients where it is unclear if the tumour growth is pseudo progression. CCMB hopes to determine if there is a better way to help patients cope with this uncertainty.

The third question the team is researching is the health economics. "The chemo that I'm giving is expensive so if I'm telling someone, 'I think this is pseudo progression, we're going to carry on with your treatment,' there is extra expense and risk for the patient with that. If I could increase the sensitivity of my test, would it be cost neutral or even save money compared to keeping someone on chemotherapy that is ineffective" says Dr. Pitz.

Treating Advanced Cancers

Using what we know in new ways

Dr. Sachin Katyal

Fifty-five thousand Canadians are living with brain tumours and because glioblastoma is the most common, the longer it takes to find a better treatment for this aggressive brain cancer, the more Canadians are going to die.

Brain tumour researcher, Dr. Sachin Katyal, is trying to fast track a new treatment for GBM. He is trying to determine if there are any drugs already on pharmacy shelves that could be used. "There is such a thing as alternative usage. If we can find more alternative uses for these drugs, maybe we can have an immediate benefit especially in cases of compassionate care," says Dr. Katyal, a senior scientist at the Research Institute at CancerCare Manitoba.

Through a Terry Fox New Investigator Grant, Dr. Katyal has linked with Dr. Sheila Singh at McMaster University. She is a surgeon-scientist and one of the leading glioblastoma researchers in Canada. Dr. Singh is collecting samples from glioblastoma patients before treatment and after the brain tumour has reoccurred.

Dr. Katyal's project is using FDA-approved drugs to see whether on a patient-by-patient basis any of these drugs has an effect on recurrent tumour sample. With grant money from CancerCare Manitoba Foundation, Katyal purchased technology to test these individual tumours against hundreds of known drugs. The advantage is that these drugs have already gone through the lengthy approval process required for drugs to be used on humans.

This project will also mark the start of a pan-Canadian glioblastoma tumour bank. "Eventually through the development of the tumour bank in Manitoba we will be able to help patients in Manitoba. It is putting Manitoba patients front and centre as part of a national collective to help GBM research and GBM patients. This is a personalized approach to treat brain tumours. Nothing like this has ever been proposed, " Katyal says.

INVESTIGATOR-INITIATED CLINICAL TRIALS

An investigator-initiated clinical trial (IIT) uses a scientific rationale and protocol developed by a local investigator who wants to conduct original research. IITs are different from other clinical trials in that the scientific background for the study is based on a researcher's own hypothesis and research as opposed to that of the pharmaceutical industry. These studies can be based on novel uses for anticancer agents or technology, patient health outcomes and cancer biomarkers, to name a few. IITs advance medical science and have often resulted in breakthrough therapies. Breast cancer treatments such as trastuzumab and palbociclib, for example, began with findings in an independent investigator's lab, followed by an IIT in 20 patients.

Research Officer Mary-Ann Lindsay BSc (Pharm), PharmD, a recent addition to the Research Institute at CCMB, brings decades of experience in translational cancer research, i.e. research that takes a promising finding in the lab setting then subsequently tested it in patients. "A researcher has a finding in the lab that could potentially benefit cancer patients. The next step is to test the finding in patients in a small investigator-initiated trial with the hope of improving cancer patient outcomes. Patients who participate in research are invaluable partners in cancer research" says Dr. Lindsay.

Funding for these small studies is limited. CancerCare Manitoba Foundation provides much of the support for local IITs. "Great research is being done here. The advantages to having an IIT research platform at CCMB is that our patients benefit from the novel research, and local researchers have the opportunity to significantly impact cancer patients globally. It's about putting Manitobans and CCMB researchers on the map," says Dr. Lindsay.

CCMB has two additional research officers. Eilean J McKenzie-Matwiy PhD, who facilitates research at CCMB by seeking funding opportunities, reviewing and editing applications, developing budgets, and assisting with pre-/post-award management. Gary Annable supports clinical scientists at the Research Institute, especially in the area of patient experience.

Treating Advanced Cancers

Brain cancers in children

Treating children with brain tumours is different than treating adults. Children's brains are still growing and although radiation is one of best treatments for brain tumours, in children radiation can have enormous side effects, including deafness, vision problems and cognitive deficits. Some children also develop secondary cancers as a result of the radiation treatment.

Dr. Issai Vanan is a pediatric neuro-oncologist and a clinician-researcher at CCMB. The aim of his research is to make these brain tumours more sensitive to current treatments so that smaller doses of treatment can be used to prevent long term side effects.

"I am living my dream because not only do I see patients in the clinic and treat them, but I also can identify clinical problems and conduct basic science research in the lab. The classic mantra of Physician Scientists. From the clinic to the bench and back to clinic. This is something that has been very helpful to me and my patients. We deal with a lot of challenging patients in our clinic and hopefully we are able to do wonderful things for these patients." said Vanan.

Treating the brain is not as simple as treating other parts of the body because the brain is doubly protected. This additional layer of protection is called the blood-brain barrier. According to Dr. Vanan, "the brain has properties where it is difficult to get in and it also has properties where if something gets in there is a possibility that if it's not good for the brain, it actively gets pushed out. So it is very difficult for chemotherapy to reach the tumour."

Dr. Vanan's research lab is working in collaboration with Dr. Donald Miller from the University of Manitoba department of pharmacology on a drug to open the blood-brain barrier transiently to let the chemotherapy in to the tumour for a transient period of time in and then allow the barrier to close.

Crossing the blood-brain barrier is especially important for children with diffuse intrinsic pontine gliomas, a highly aggressive and difficult to treat brain tumour that is nearly always fatal. Finding an effective treatment for this type of tumour will involve crossing the blood-brain barrier. " We are hypothesizing the tumour secretes stuff that actually makes the blood-brain barrier tighter. We don't have effective drugs to treat this tumour, but we are getting there slowly. We are trying to inhibit those things in the tumour that are preventing treatments from working," said Dr. Vanan.

Dr. Vanan's leading-edge research project is being funded by CCMF.

"We deal with a lot of challenging patients in our clinic and hopefully, we are able to do wonderful things for these patients."

Dr. Issai Vanan
Pediatric Neuro-oncologist and Clinician-researcher

Treating Advanced Cancers

HGSOC the most lethal gynecologic cancer

Front Row, L to R: Nicole Wozny, Manisha Bungsy, Mirka Sliwowski, Zelda Lichtensztejn, Dr. Alon Altman ***Back Row, L to R:*** Michelle Parisien, Claire Morden, Pascal Lambert, Dr. Kirk McManus, Chloe Lepage, Dr. Mark Nachtigal ***Not in Picture:*** Dr. Donna Turner, Dr. Cyrille Bicamumpaka, Drs. Erin Dean, Shaundra Popowich, Christine Robinson, Sarah Kean, Stacey Engel, Shannon Kornelsen, Dr. Gilbert Arthur, Dr. Frank Schweizer, Sara Gray, Danielle Chalmers, Lori Ann Love, Gail Noonan, Katie Galloway, Mary Natividad

Ovarian cancer is an umbrella term for many different diseases. High grade serous ovarian cancer (HGSOC) is the most common and lethal type. There are no screening tests for any of the ovarian cancers, and the majority of patients are diagnosed with advanced disease. Symptoms are subtle and include bloating, feeling full quickly after eating, change in urinary or bowel habits, pain in the pelvis or abdomen. While these symptoms may be due to benign conditions, if they occur frequently or persist for a number of weeks women should consult their primary care provider.

Scientists and clinicians associated with CancerCare Manitoba have come together to study ovarian cancer; through the Manitoba Ovarian Cancer Research (MOCR) group. "We have been able to build a strong multi-disciplinary research team in Manitoba. Everyone has the same goal of improving patient outcomes," says Dr. Mark Nachtigal, University of Manitoba and a Senior Scientist at the CCMB Research Institute. Along with Dr. Alon Altman (Gynecologic Oncology) and Dr. Donna Turner (Population Oncology), they formed the Manitoba Ovarian Cancer Outcomes (MOCO) study group in 2012. Working together with the Manitoba Cancer Registry, they have begun to paint a picture of the Manitoba ovarian cancer population with respect to their diagnosis, treatment, and overall survival. Their research has shown that Manitoba women have slightly higher overall survival than the Canadian average.

One difficulty with HGSOC, is that if it recurs it is difficult to treat, often becoming resistant to chemotherapy. Drs. Nachtigal, Kirk McManus (Senior Scientist, Research Institute) and Cyrille Bicamumpaka (Pathology) are developing cellular models of HGSOC formation in order to identify new targets for drug development and treatment. Complementing these studies, Drs. Nachtigal, Gilbert Arthur (Biochemistry & Medical Genetics) and Frank Schweizer (Chemistry) are creating and testing new drugs to treat chemotherapy-resistant HGSOC. The research team has successfully developed a number of experimental compounds that are effective against chemotherapy-resistant HGSOC cells. This includes testing samples donated by ovarian cancer patients. Obtaining informed patient consent and banking HGSOC tissues is facilitated by the Manitoba Tumour Bank. The hope is to bring these new drugs forward for clinical testing; however, these are still at the experimental stage. CancerCare Manitoba Foundation has supported Dr. Nachtigal's work on lipid-based therapy for drug resistant ovarian cancer.

Collectively, the multi-disciplinary efforts and approaches employed by the MOCR team are aimed at improving the lives and outcomes for Manitoban women living with ovarian cancer.

Treating Advanced Cancers

Improving quality of life for pancreatic cancer patients

About 100 patients are diagnosed with cancer of the pancreas each year in Manitoba. Pancreatic cancer is hard to diagnose. People have vague symptoms: belly pain, lower back pain, weight loss, low energy. Unfortunately, it is usually diagnosed in the advanced stage when the prospect for survival is poor. In addition, only 50 per cent of those diagnosed are well enough for treatment.

Dr. Christina Kim, an oncologist at CCMB has a clinical and research interest in pancreatic cancer. "This is a group of patients that sometimes gets forgotten. They are not in the news as much; it is not a cancer that we hear a lot about. It is an area where we need a lot of research. We have a long ways to go," says Dr. Kim.

Dr. Kim says that five years ago there was very little in terms of treatment, but now there are new regimens. However, even with these new drugs, survival is only between 8.5 to 11 months. "I think there is a lot we can do to improve the care of these patients," says Dr. Kim.

Dr. Kim is leading a study funded by CancerCare Manitoba Foundation to assist patients with advanced pancreatic cancer by offering these patients early palliative care. Because patients with advanced pancreatic cancer experience many cancer-associated symptoms, maintaining quality of life is very important. Palliative care is a holistic approach to care for patients with terminal diagnoses, which focuses on pain and symptom management, emotional support and end of life planning. Often referral to palliative care is delayed until someone is near death or has exhausted all treatment options.

Currently in Winnipeg, enrollment in the WRHA Palliative Care Program for patients with pancreatic cancer is limited to those who have declined chemotherapy or decided to end treatment. Outside of WRHA there is a patchwork of availability of palliative care. Patients enrolled in Dr. Kim's study will be offered palliative care and treatment. They will be closely followed to manage pain and symptoms and providing emotional support.

"We are trying to see whether providing palliative care early, after diagnosis improves quality of life. We're using a number of quality of life tools to get the patient's perspective of where they are in their life at the time of diagnosis and then 16 weeks later," says Dr. Kim. "There is data in lung cancer for this sort of approach. Lung cancer is somewhat similar to pancreatic cancer in that patients may present quite late with a poor prognosis and have a lot of similar types of symptoms. The data showed that an early palliative care approach actually improves survival and improves quality of life. It minimizes hospital and emergency room visits within the last 14 days of life."

Through this study CCMB will be providing a service that pancreatic cancer patients haven't had before. If the study shows that this does improve survival and quality of life for these patients, CCMB hopes it will become the standard of practice across the province for other advanced cancers.

Treating Advanced Cancers

Caring for older cancer patients

Statistics demonstrate that from 2009 to 2014, 45 per cent of new cancers in Manitoba occurred in patients over 70 years of age. This number is anticipated to increase.

Dr. David Dawe, medical oncologist at CCMB, is spearheading the effort to get health care providers to recognize the special needs of older Manitobans with cancer. The goal is to improve the experience and outcomes of older patients.

Dr. Dawe has recently been awarded a Canadian Institute of Health Research grant for a project entitled "The impact of age on patterns of treatment among adult cancer patients in Manitoba."

Older people get more of most kinds of cancer because aging is the number one risk factor for cancer. The average age for the diagnosis of lung cancer is 71 years old, breast cancer is 62, colon cancer is mid to late sixties. Many of the common cancers are diagnosed in older people.

This population has challenges that younger patients don't have, such as pre-existing health conditions. Sometimes older patients are described as being frail. Frailty makes it difficult for the body to recover from stressors such as chemotherapy, radiation or surgery.

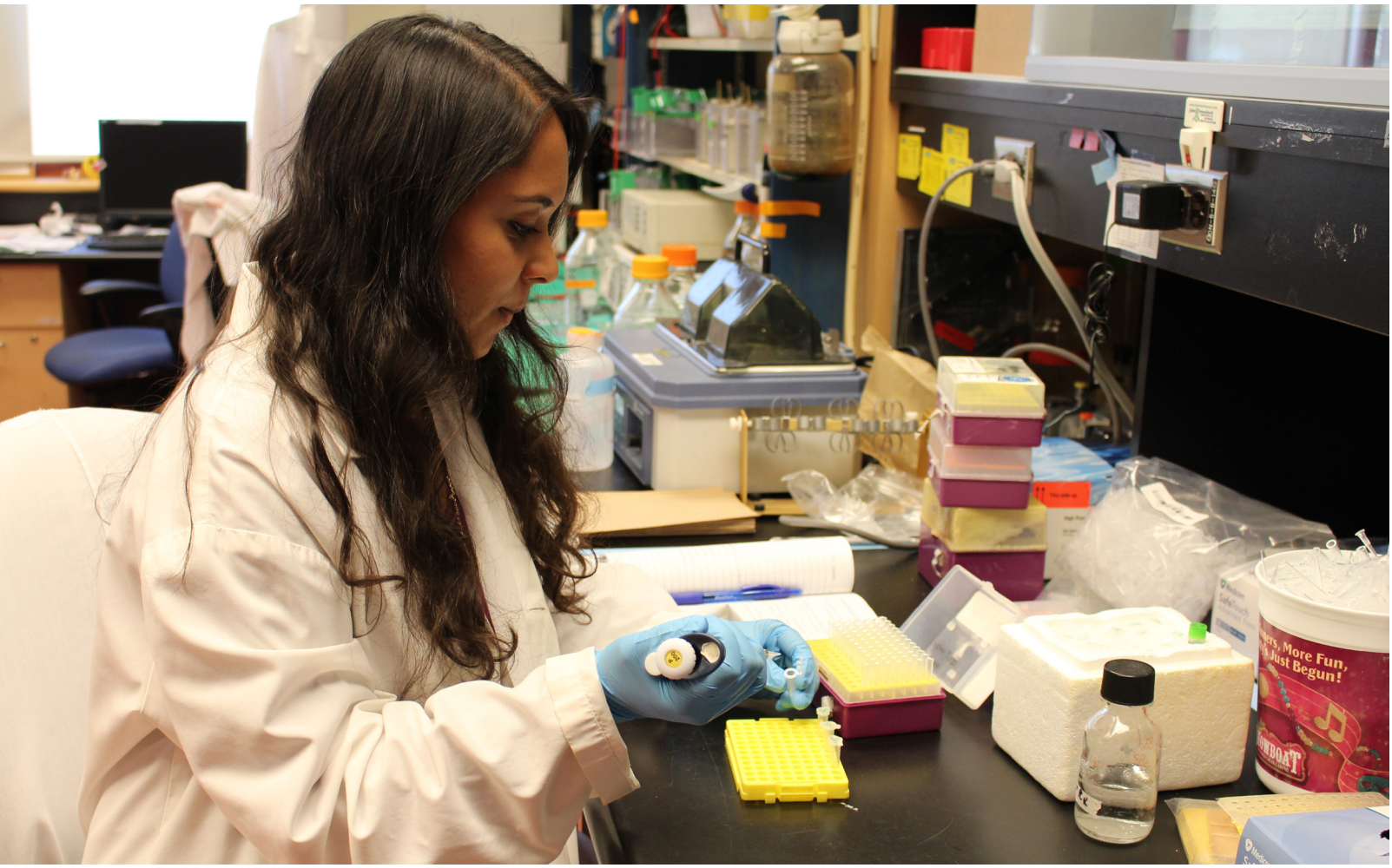
Dr. Dawe is leading CCMB's efforts to better assess and help older patients with cancer. This year he organized Geriatric Oncology Day, a one-day session for Manitoba healthcare providers on the principles of care for older people. More than 200 people attended the first-time event. A follow-up event is being planned for 2019.

CCMB is also piloting a questionnaire in the clinics to help in the assessment of older patients with cancer before they start treatments like chemotherapy. The information gathered will help determine next steps for the patient. According to Dr. Dawe, "with any treatment, we want to have a better chance of helping than hurting. An important part is their body's ability to take the stressor of chemotherapy or radiation or surgery and then recover from it. For each of us, our body has a point in which it just can't recover. There are situations in which treating the cancer would actually cause more harm than good."

Dr. Dawe is also undertaking research into the special needs of the elderly. He is conducting focus groups of older patients and caregivers to understand their experiences in the healthcare system, as well as to identify where CCMB might be able to improve. The focus groups are being carried out in each regional health authority in collaboration with CCMB's Underserved Populations Program, with the help of Morgan Stirling, Elizabeth Huynh, and Allison Wiens.

The Next Generation

CancerCare Manitoba's best and brightest



Shavira Narrandes is in her final year as a master's student in the Department of Biochemistry and Medical Genetics at the University of Manitoba. Under the supervision of Dr. Spencer Gibson and Dr. Wayne Xu, Shavira obtained her undergraduate degree and received a B.Sc Honours degree in genetics.

Shavira's area of research is non-small-cell lung cancer (NSCLC). Her project focuses on changes in gene expression: good genes that are expressed and prevent a cell from becoming cancer and bad genes that are expressed only in cancer cells . After studying over 10,000 genes in normal and cancer cells, 10 genes were found that may determine a cell's fate. The goal of her research is to bring gene signature studies into clinical trials to aid in predicting the diagnoses and prognoses of NSCLC patients.

This year, Shavira won the Research Manitoba/CancerCare Manitoba Master's Studentship. She also has a number of papers published and is currently working on one with a focus on genomic structural variations in ground-glass nodules.

Following her Master's, Shavira would like to continue her cancer and genetics research. Her ultimate goal is to become a clinician scientist. She envisions integrating the rapidly growing field of bioinformatics/computational biology into her future research and clinical work, as she believes it is essential for advancement in medical discoveries.

CCMF funding enables CCMB to recruit and develop our province's next generation of scientists.

Events and Achievements

April 1, 2017 to March 31, 2018

Collaboration with Saskatchewan - In the spring of 2017, CCMB embarked on a benchmarking project with the Saskatchewan Cancer Agency (SCA) entitled, "Examining Best Practices in Delivering Cancer Services - CCMB and SCA." Further collaboration with SCA occurred in February 2018 with a one-day meeting where each agency shared areas of strength and advancement, and challenges.

Northern Health Region and Thompson Hospital celebrated the grand opening of the Thompson Regional Cancer Program's Chemotherapy Unit - enabling patients from the Northern Region to receive chemotherapy close to home. By working with these stakeholders, CCMB is able to fulfill its provincial responsibility for cancer services.

Following discussions between CCMB and the WRHA, the WRHA Oncology clinics in the four community hospitals were transferred to CancerCare Manitoba including administration and staff functions. Staff at the WRHA Cancer Hub and Screening Programs at Misericordia were also transferred to become CCMB staff. These changes enable CCMB to manage operations more efficiently and cost effectively and as a result improve quality of care to patients. CCMB is proud to welcome the dedicated and skilled staff at these sites as new staff members of CCMB.

CCMB invited Professor Brian Golden, an expert in leading change from Rotman School of Management, U of T, to lead a one-day workshop on Leading Change for CCMB leaders, directors and managers, providing insight into the science of leading change and the tools to implement and lead change effectively at CCMB.

CCMB's Breast and Gyne Cancer Centre of Hope celebrated its 20th anniversary in November. A formal program for staff and patients took place in the CCMB Lecture Theatre on November 1st and an open house at the Centre for Hope at 691 Wolseley Avenue was held November 7th. The Centre provides information, counselling and emotional support to women and their families. The centre is largely funded by donations to CCMF.

CCMB's Long Service Recognition event recognized employees who have served 20 years or more with CCMB. The longest standing recognition went to Dr. Brent Schacter for his 45 years of service to CCMB.

The first Geriatric Oncology Day, a one-day educational program planned by the Underserved Population Program at CCMB, led by Dr. David Dawe, medical oncologist, and co-developed with the Continuing Professional Development Medicine Program, U of M. The program was targeted for a wide audience of provincial healthcare providers who treat elderly patients with cancer with the intent of creating a geriatric oncology community of practice among Manitoba healthcare providers.

CCMB launched its new and improved website for easier access and wayfinding for patients and the public.

Annual Blood Disorders Day, a joint effort of CCMB and the U of M. A one-day educational symposium for primary care providers and allied healthcare providers to provide practical, relevant information on blood disorders and hematology primary care.

Annual Lyonel G. Israels Memorial Lecture - this year's guest speaker was Dr. Mark Minden presenting Molecular studies of the NPM1c form of acute myeloid leukemia. Dr. Minden is a clinician scientist at the Ontario Cancer Institute, University Health Network, UofToronto, and Orsino Chair in Leukemia Research.

CancerCare Manitoba
Condensed Statement of Financial Position

Year ended March 31, 2018, with comparative information for 2017

	GENERAL FUND	CAPITAL FUND	CLINICAL, BASIC RESEARCH AND SPECIAL PROJECTS FUND	2018 TOTAL	2017 TOTAL
Assets					
Current assets					
Cash	$ 7,700,343	$ -	$ 7,578	$ 7,707,921	$ 6,241,515
Restricted cash	2,284,729	-	-	2,284,729	-
Short-term investments	10,088,679	-	394,836	10,483,515	5,773,053
Due from Manitoba Health	644,996	-	-	644,996	3,504,205
Accounts receivable	6,182,002	-	14,174,189	20,356,191	15,805,400
Inter-fund accounts	1,756,200	4,066,204	(5,822,404)	-	-
Inventory	4,724,228	-	5,099	4,729,327	5,173,498
Prepaid expenses	260,487	-	-	260,487	247,783
Vacation entitlements receivable	1,730,141	-	-	1,730,141	1,730,141
	35,371,805	4,066,204	8,759,298	48,197,307	38,475,595
Restricted cash	2,507,553	-	-	2,507,553	1,445,995
Retirement entitlement obligation receivable	1,419,400	-	-	1,419,400	1,419,400
Investments	11,017,753	-	3,753,455	14,771,208	22,522,663
Capital assets	-	49,012,725	1,266,697	50,279,422	50,903,845
	$ 50,316,511	$ 53,078,929	$ 13,779,450	$ 117,174,890	$ 114,767,498
Liabilities, Deferred Contributions and Fund Balances					
Current liabilities					
Accounts payable and accrued liabilities	$ 18,743,780	$ -	$ 23,359	$ 18,767,139	$ 18,140,144
Due to Manitoba Health	11,483,899	-	-	11,483,899	15,462,870
Deferred contributions - expenses of future periods	1,561,119	-	-	1,561,119	668,431
	31,788,798	-	23,359	31,812,157	34,271,445
Deferred contributions - capital assets	-	52,918,484	-	52,918,484	50,394,181
Employee future benefits	9,607,481	-	-	9,607,481	9,072,030
	41,396,279	52,918,484	23,359	94,338,122	93,737,656
Fund balances					
Invested in capital assets	-	160,445	1,266,697	1,427,142	1,287,004
Externally restricted	-	-	11,328,368	11,328,368	10,513,581
Internally restricted	7,008,958	-	1,260,658	8,269,616	8,365,462
Unrestricted	2,153,115	-	-	2,153,115	1,225,067
	9,162,073	160,445	13,855,723	23,178,241	21,391,114
Accumulated remeasurement gains (losses)	(241,841)	-	(99,632)	(341,473)	(361,272)
	8,920,232	160,445	13,756,091	22,836,768	21,029,842
	$ 50,316,511	$ 53,078,929	$ 13,779,450	$ 117,174,890	$ 114,767,498

CancerCare Manitoba Administrative Costs

Summary of Administrative Expense	PERCENTAGE OF TOTAL 2017/18 EXPENSES	PERCENTAGE OF TOTAL 2016/17 EXPENSES
Corporate	2.5	2.9
Patient-Care Related	0.7	0.7
Human Resources and Recruitment	0.8	1.0
Total	**3.9**	**4.6**

A complete set of financial statements, Public Sector Compensation Disclosure Report, and the Auditors' report can be obtained from CancerCare Mantioba. Call (204) 787-1662

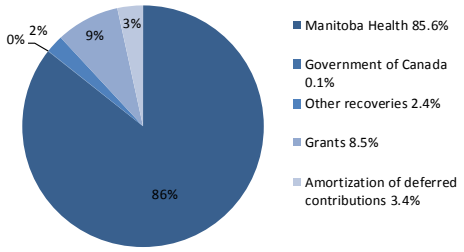
CancerCare Manitoba
Condensed Statement of Operations and Changes in Fund Balances

Year ended March 31, 2018, with comparative information for 2017

	GENERAL FUND	CAPITAL FUND	CLINICAL, BASIC RESEARCH AND SPECIAL PROJECTS FUND	2018 TOTAL	2017 TOTAL
Revenue					
Manitoba Health	$ 138,710,460	$ 216,034	$ -	$ 138,926,494	$ 133,520,253
Government of Canada	20,538	-	74,457	94,995	88,977
Other recoveries	3,865,959	-	-	3,865,959	1,885,263
Grants	-	-	13,793,403	13,793,403	14,681,437
Amortization of deferred contributions	-	5,310,798	247,329	5,558,127	6,173,042
	142,596,957	5,526,832	14,115,189	162,238,978	156,348,972
Expenses					
Compensation	59,765,615	-	8,502,945	68,268,560	67,491,673
Medical remuneration	18,035,120	-	-	18,035,120	16,611,157
Building occupancy	3,255,383	-	-	3,255,383	2,802,916
Amortization of capital assets	-	5,310,798	661,721	5,972,519	5,407,420
General administration	2,392,077	-	1,094,948	3,487,025	4,588,621
Equipment rentals and maintenance	3,016,497	-	65,834	3,082,331	3,190,413
Supplies and other departmental expenses	4,252,050	-	2,351,302	6,603,352	7,429,465
Drugs					
Provincial oncology drug program	44,610,391	-	-	44,610,391	42,103,951
Neupogen	2,620,341	-	-	2,620,341	2,568,537
Other	501,108	-	-	501,108	45,681
Referred-out services	4,283,872	-	240,369	4,524,241	5,043,723
Interest expense	-	216,034		216,034	107,270
	142,732,454	5,526,832	12,917,119	161,176,405	157,390,827
Excess (deficiency) of revenue over expenses before the undernoted	(135,497)	-	1,198,070	1,062,573	(1,041,855)
Investment income (loss)	762,162	-	(37,608)	724,554	815,644
Excess (deficiency) of revenue over expenses	626,665	-	1,160,462	1,787,127	(226,211)
Fund balances, beginning of year	8,535,408	160,445	12,695,261	21,391,114	21,617,325
Fund balances, end of year	$ 9,162,073	$ 160,445	$ 13,855,723	$ 23,178,241	$ 21,391,114

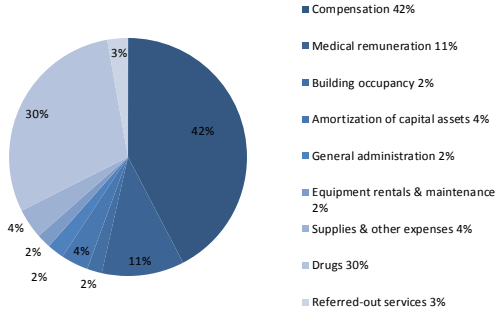
Total Revenues

FOR YEAR ENDED MARCH 31, 2018



Total Expenses

FOR YEAR ENDED MARCH 31, 2018



These condensed financial statements do not contain all of the disclosures required by Canadian public sector accounting standards. Readers are cautioned that these statements may not be appropriate for their purposes. The complete set of financial statements can be downloaded at www.cancercare.mb.ca

Board of Directors

2017/2018

Effective March 31, 2018

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VICE-CHAIR

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TREASURER

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Dr. Brent Schacter

Mr. Robert Shaffer
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MINISTER OF HEALTH

Ms. Mary Beth Taylor

EX-OFFICIO

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PRESIDENT & CEO, CCMB

GUESTS

Dr. Donald Houston,
MEDICAL STAFF ASSOCIATION, CCMB

Ms. Annitta Stenning,
PRESIDENT & CEO,
CANCERCARE MANITOBA FOUNDATION

CancerCare Manitoba wishes to thank:

Mr. Romel Dhalla

Ms. Alyson Kennedy

Mr. Don MacDonald

Dr. Arnold Naimark

Ms. Gloria Paziuk

Ms. Fern Swedlove

FOR THEIR DEDICATION AND COMMITMENT TO CANCERCARE MANITOBA AND MANITOBANS DURING THEIR TERM OF SERVICE ON THE CCMB BOARD OF DIRECTORS.

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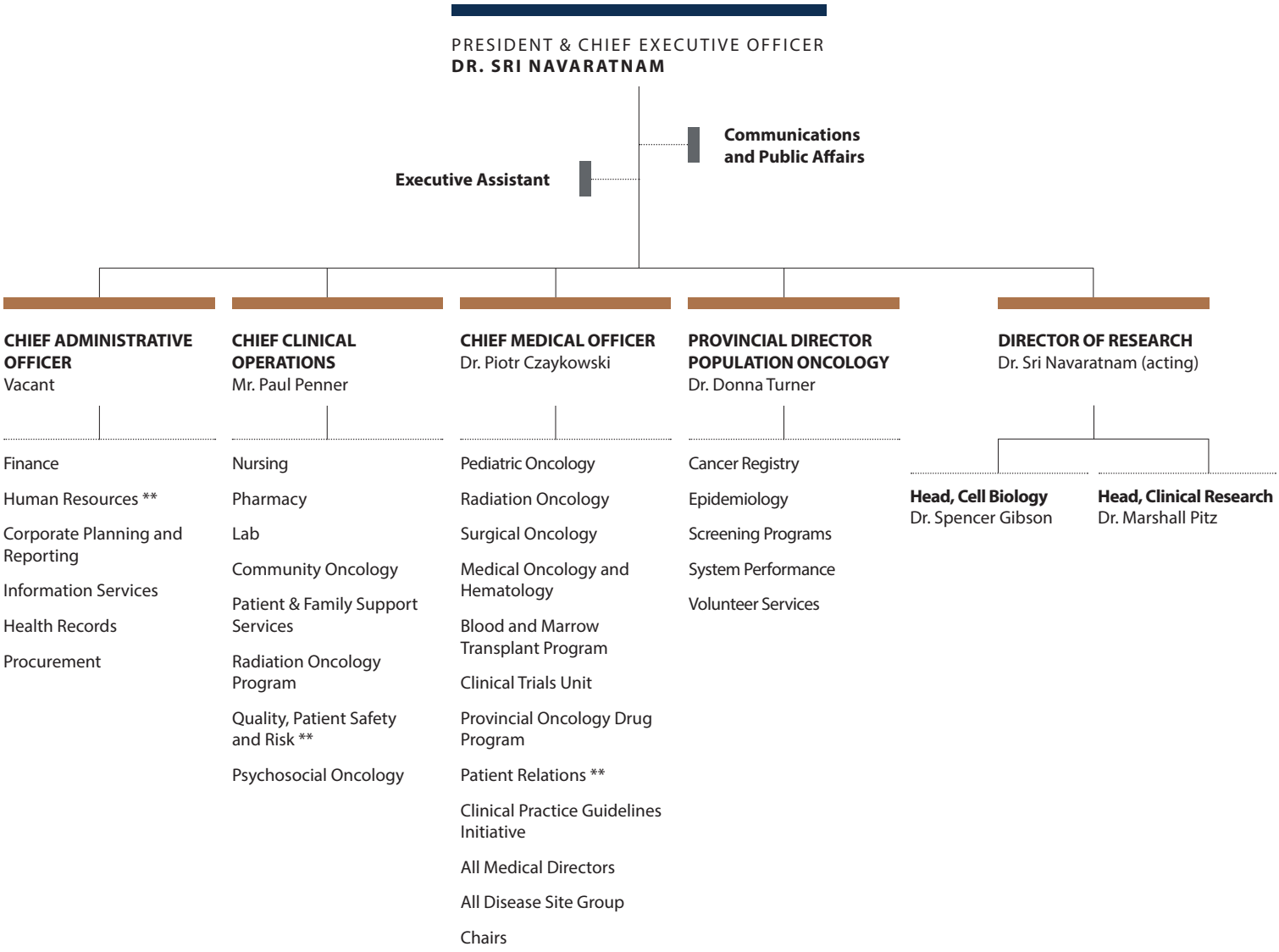
Dr. Marilyn Singer

Partner Representative:
Ms. Annitta Stenning

*DENOTES THE CHAIR AND PRESIDENT & CEO ARE MEMBERS OF EACH COMMITTEE BY VIRTUE OF THEIR POSITIONS

Organizational Chart



** DIRECT ACCESS TO CEO WHEN OPERATIONALLY REQUIRED

MARCH 31, 2018

CancerCare Manitoba FOUNDATION

All funds raised stay in Manitoba.

DONORS PROVIDE A LIFELINE TO PATIENTS WITH DIRE PROGNOSES

Precision medicine is the new generation of cancer therapy. Thanks to the tremendous generosity of donors, the Foundation has been able to provide funding to CancerCare Manitoba and partners to bring this leading-edge treatment to Manitobans since 2016. This investment is saving lives and for Kathie Kolybaba, the unwavering support is very personal.

Diagnosed in 2013 with stage IV non-small cell lung cancer, Kathie's outlook was very poor. For the first few years after her diagnosis, she endured every treatment option available. Kathie says for several years, her cancer would respond to therapy, shrink, and then come back. It was scary and she was quickly running out of options. Precision medicine changed everything.

The person sitting next to you is more than 99 per cent genetically identical to you; it's the one per cent difference that determines your hair and eye colour and if you get cancer, how you will respond to treatment. Until recently, patients with the same type and stage of cancer received a one-size-fits-all treatment, but research showed that some treatments work better for some patients than others. Precision medicine is treatment customized to each person's genes or features of their tumour. This both helps decide what drugs may work better in some patients and also avoids the inappropriate use of therapies which are less likely to benefit. This approach increases both the chance of survival and the quality of a patient's life. Because these new drugs have a very specific biologic target, they have fewer side effects and are generally less toxic to the whole body compared with traditional chemotherapies.

Donor commitment is helping Manitoba keep ahead of a rapidly changing landscape in cancer therapy. Since 2016, the Foundation has provided CancerCare Manitoba with $750,000 for precision medicine for patients starting with breast, skin, lung, colorectal and blood cancers.

In addition to the impact donor support is having, the advancement of precision medicine in our province would not be possible without our close working relationship with a committed government partner - Shared Health Manitoba. It is playing a key role in providing the appropriate testing for CancerCare Manitoba's patients and in doing so, helping to improve outcomes for Kathie and others like her.

Kathie's oncologist, Dr. Shantanu Banerji, is a clinician-scientist and Director of Precision Oncology at CancerCare Manitoba. Just over a year ago Dr. Banerji successfully lobbied for Kathie to receive a new drug through a clinical trial based on her cancer's expression of a particular protein. Kathie vividly remembers the day she received the life-changing news.

"Dr. Banerji literally came running up the stairs to tell me 'you don't have to take the drug you are on anymore. You can take Keytruda and it's so much better!'" recalls Kathie.

She has seven more treatments to go and thanks to the support of donors, Kathie feels a renewed sense of hope. The treatment has been getting rid of her cancer, and this time it hasn't been coming back.

"Kathie has completely responded to her new treatment and is just a few months from coming off treatment all together," says Dr. Banerji.

Donor support has enabled CancerCare Manitoba to establish the three pillars of a precision medicine centre – staff, equipment, and data analysis. And continued investment in the Foundation is enabling CancerCare Manitoba to be a leader in the delivery of precision medicine and provide innovative care to Kathie and other patients much faster. Prior to creating a precision medicine platform locally, multiple tests had to be performed in different provinces and some tests could only be done in the United States. Testing and receiving results which used to take eight weeks can now be done in just two, meaning patients spend less time waiting for results and are going on treatment sooner.

"If it weren't for everyone who has helped me - Dr. Banerji, Dr. Butler and my surgeons, as well as my family and Foundation supporters, I don't know where I'd be at this moment in time," Kathie says. "I am so thankful and looking forward to the future."

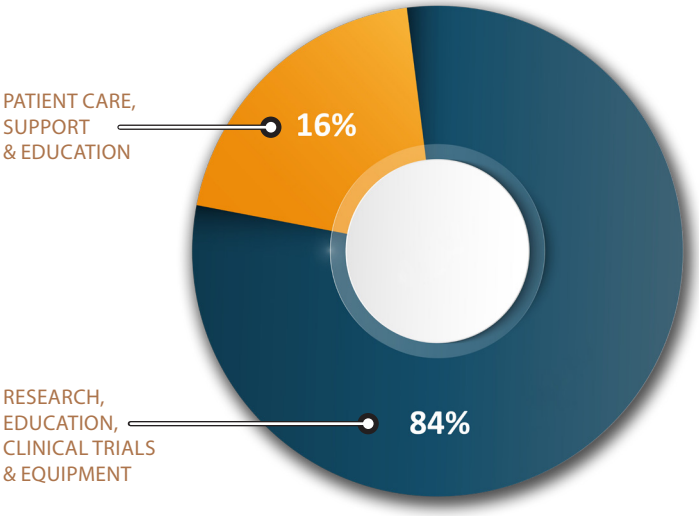
Donor Dollars

The Foundation's mandate is to support CancerCare Manitoba's strategic priorities by funding programs and services that may not be eligible for government funding or when financial resources are not available.

CancerCare Manitoba Foundation's Board of Directors takes its donor stewardship responsibilities very seriously. Annually the Board considers peer-reviewed research and program proposals submitted by CCMB that align with its strategic plan. Funding requests are thoughtfully reviewed by the Foundation's Project, Grants & Awards Committee and are recommended for approval.

This fiscal year thanks to the generosity of thousands of donors, the Foundation granted $6.9 million in funding to support CancerCare Manitoba's strategic priorities. Since 2000, the Foundation has granted over $111 million to CancerCare Manitoba.

Research into all aspects of cancer is essential to reduce the burden of this complex disease on current and future patients. The Foundation invested nearly $5.8 million into research, equipment and clinical trials in 17/18. This support to CancerCare Manitoba accounts for 84 per cent of the Foundation's grants this year. The funds were directed to many disease site research priorities, including $2.3 million in core operating support for CancerCare Manitoba's Research Institute and $1.6 million to researchers and clinicians. Funds were also provided to CancerCare Manitoba's clinical trials unit for adult and pediatric trials and to the Department of Epidemiology for core funding and the cancer registry.



The Foundation annually grants funds to CancerCare Manitoba dedicated to improving the cancer experience for patients and their families. This year $878,000 was provided for various programs, initiatives and services, including precision oncology for young people, the Patient and Family Resource Centre, a moving forward after cancer wellness program and community oncology.

In total more than 30 specific projects were funded this year. For more information on the grants, please refer to the Foundation's website http://www.cancercarefdn.mb.ca/current-grants/

CancerCare Manitoba Website Update

www.cancercare.mb.ca

In April 2018, CancerCare Manitoba was proud to launch a revamped website focusing on the needs of Manitobans with cancer and their families. Over the last two years, CCMB consulted extensively with patients, caregivers, physicians and staff to make cancercare.mb.ca more user-friendly and to ensure everyone has the information they need at their fingertips.

Some of the redevelopment efforts included: finding a new content management system to house and maintain the information; reviewing 1100+ pages of content to develop a new layout; updating content; working with CancerCare Manitoba Foundation to build cohesiveness between the two sites and incorporating the Research Institute at CancerCare Manitoba within the main website.

All of these efforts required numerous discussions with CCMB departments to ensure the site was well-organized, written in plain language, easy to navigate, and reflected the vision, mission and values of the organization. Patient advisors also had an opportunity to review the draft site and provide valuable feedback.

The Public Interest Disclosure Act

The Public Interest Disclosure (Whistleblower Protection) Act came into effect in April 2007. This law gives employees a clear process for disclosing concerns about significant and serious matters (wrongdoing) in the Manitoba public service, and strengthens protection from reprisal. The Act builds on protections already in place under other statutes, as well as collective bargaining rights, policies, practices and processes in the Manitoba public service.

Wrongdoing under the Act may be: contravention of federal or provincial legislation; an act or omission that endangers public safety, public health or the environment; gross mismanagement; or, knowingly directing or counseling a person to commit a wrongdoing. The Act is not intended to deal with routine operational or administrative/human resource matters.

A disclosure made by an employee in good faith, in accordance with the Act, and with a reasonable belief that wrongdoing has been or is about to be committed is considered to be a disclosure under the Act, whether or not the subject matter constitutes wrongdoing. All disclosures receive careful and thorough review to determine if action is required under the Act, and must be reported in the regions annual report in accordance with Section 18 of the Act.

The following is a summary of disclosures received by CancerCare Manitoba for the fiscal year 2017-2018: 0

The number of disclosures received and the number acted on and not acted on: Subsection 18(2)(a): 0

The number of investigations commenced as a result of a disclosure: Subsection 18 (2)(b): 0

In the case of an investigation that results in a finding of wrongdoing, a description of the wrongdoing and any recommendations or corrective action taken in relation to the wrongdoing, or the reasons why no corrective action was taken: Subsection 18(2) (c): 0

Questions? E-mail us at CCMBCPAffair@cancercare.mb.ca
www.cancercare.mb.ca