

healthy together



2012 - 2013

Report to the Community
and a Year in Review

Interventional
Radiology
"Great
Benefit to
Our Patients"

Improving
Aboriginal
Health
Starts with
Engagement

Moving
towards
Personalized
Cancer
Care

Prenatal Care
for Pregnant
Women
Overcoming
Addiction

Contents

- 1 Mission, Vision, Values
Introduction to Strategic
Plan Status Updates
- 2 Report from the Co-Chair, Patient
Family Advisory Council
- 3 Report from the Chair of the
Board of Directors
- 4 Report from the President & CEO
- 5 Strategic Direction: Aboriginal Health
- 7 Strategic Direction: Chronic Disease
Prevention and Management
- 9 Strategic Direction: Comprehensive
Clinical Services
- 11 Strategic Direction: Mental Health and
Addictions
- 13 Facing the Challenges
- 14 Cardiovascular and Stroke Program
- 14 Chronic Disease Prevention and
Management Program and Medicine
Services
- 15 Mental Health Program
- 15 Regional Cancer Care Northwest
- 16 Women and Children's Program
- 16 Trauma Program, Emergency, Base
Hospital and Critical Care Services
- 17 Prevention and Screening Services
- 17 Diagnostic Services
- 18 Surgical, Ambulatory Services and
Rehabilitative Services
- 18 Supportive & Palliative Care and
Telemedicine Services
- 19 Support Services
- 20 Financial Statements
- 21 TBRHSC by the Numbers 2012 -2013



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Responses to this report are encouraged.
Please address your comments to the Senior
Director of Communications and Engagement.

OUR VISION

healthy
together

VALUES

Patients First
Accountability
Respect
Excellence

OUR MISSION

To advance world-class
Patient and Family
Centred Care in an
academic, research-based,
acute care environment.

Academic Health Sciences Centre

With patients and families at the centre of everything we do, Thunder Bay Regional Health Sciences Centre (TBRHSC) is finding innovative ways to contribute to a healthier Ontario.

Our patient-centred research, enabled by the Thunder Bay Regional Research Institute, including a study to increase cervical cancer screening among First Nations women, has generated thousands of jobs, many of them directly related to research, garnered about \$100 million in economic development for the region, and, with

over 2,600 employees, made us the largest employer in Thunder Bay.

Advancing world-class care in an academic, research-based, acute care environment creates a strong demand for skills, which has led to the development of new education programs at our partnering academic institutions and has made ours the teaching hospital of choice for over 1,500 learners from nearly every healthcare discipline including medical graduates and research students and trainees from around the globe.

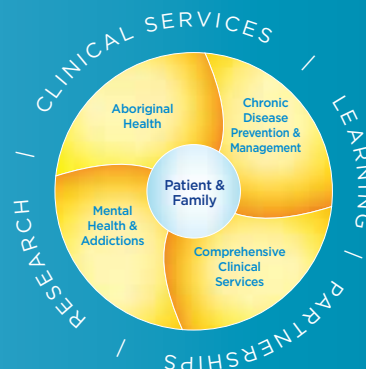
Introduction to Strategic Plan Status Updates

Our Strategic Plan 2015 is built on Patient and Family Centred Care that respects and responds to patient and family preferences, needs and values, and ensures that patient values guide all clinical decisions.

The Plan was developed through measured examination of the environment and health status of the residents of Northwestern Ontario, a review of our past successes and broad partner engagement about how to achieve our vision: healthy together. Guided by four strategic directions, each with its own set of

objectives and desired outcomes, the Plan served to inform the activities at TBRHSC over the last year. Through the combined energy and efforts of management, employees, professional staff, volunteers, Patient Family Advisors and learners and donors, we have seen significant progress in the advancement in all four directions.

What follows are just a few examples of the success and the status of the goals under each strategic direction. A status bar below each goal indicates the progress to date towards completion in 2015.



Report from the Co-Chair, Patient Family Advisory Council



In life we need to know where we have been in order to know where we are going. This holds true when it comes to our journey with Patient and Family Centred Care (PFCC). I think of how our new model of care has improved the overall well-being and satisfaction of our patients. I reflect on TBRHSC being the first and only organization to be recognized

for leading practice in PFCC by Accreditation Canada. They told us that we are leaders in the way we involve our patients in all aspects of our hospital business. Even Deb Matthews, the Honourable Minister of Health and Long-Term Care, offered her congratulations on the important role PFCC has played in achieving healthy outcomes and greater staff satisfaction at our hospital.

Our reputation as a leader in PFCC is spreading across the globe and we are getting more and more requests from other hospitals asking us to assist them in their own journey toward patient and family centred care. They all say they want to learn from a leader and this alone is reason enough for us to be proud. Our Patient and Family Advisory Council has grown to over 90 volunteer advisors who work on dozens of committees to improve the patient experience at TBRHSC. Our council is committed to ensuring we have a diverse group that represents all patients in our region.

I am confident that TBRHSC has stayed on course and continues in the right direction when it comes to our PFCC model of care. I must commend management, all staff and all volunteers who have embraced the philosophy of PFCC which in turn has made TBRHSC a better and healthier place to be.

Keith Taylor

Co-Chair, Patient Family Advisory Council

Patient Family Advisory Council Members

Barb Agostino	Dave Johnson
Dawn Aho	Kayla Kjellman
Arlene Ahtila	Jacqui Ktytor
Brenda Allard	Roberta Lane
Alexis Anderson	Maria Lento
Wayne Anderson	Matthew Lesnick
Robert Beebe	Ingrid Lingman
Shirley Beebe	Laura Macgowan
Linda Biedrzycki	Norm McDougall
Irene Bond	Orpah McKenzie
Marga Bond	Clarke McKercher
Denise Borg	Brad McKinnon
Crystal Bottle	Jan Miller
Leo Brace	Diana Miller Harquail
Helen Bragnalo	Irene Milne
Donna Brown	Joe Minelli
Carol Ann Brumpton	Janet Morgan
Rob Cameron	Judy Mostow
Sherri Capulak-Tinnes	Marie Nelson
Paul Carr	Christopher Omara
Brad Carruthers	Richard Oullette
Linda Cavezza	Mary Louise Petersen
Liisa Clarke	Gail Pfaff
Sharon Cole-Paterson	Robert (Bob) Pfaff
Mary Anne Comuzzi	Lindsey Poulter
Diane Dixon	Dawn Powell
Eve Dowson	Barb Rickards
Verna Dubray	Roger Rickards
Greig Evans	Ian Robertshaw
Bob Fenton	Glenn Rothenburger
Connor Ferguson	Cathy Sawicki
Gary Ferguson	Maureen Scalzo
Susan Fischer	Wendy Scott
Kathy Forbes	Tanya Shute
Mary Anne Fossum	Ruth Sisak
Betty Franceschetti	Cassandra Spence
Chris Frey	Keith Taylor
Marnie Frey	Bill Tennier
Jenni Glad-Timmons	Thomas (David)
Leah Goodman	Van Wagoner
Kelli Gothard McKinnon	Denny Verdenik
Margaret Hajdinjak	Heather Woodbeck
Mona Hardy	Dawnelee Wright
Marcia Hiio	Susan Wright
Daroyln Hryciw	Don Young

BOARD OF DIRECTORS

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(Chair)

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(1st Vice-Chair)

Karen McDaid
(2nd Vice-Chair)

Sharon Cole-Paterson

Carolyn Freitag
(interim CNE for Dr. Rhonda
Crocker Ellacott)

Dr. Gordon Porter

Anita Jean

Dr. Suzanne Allain

Richard (Dick) Mannisto

Andrée Robichaud

Doug Shanks

Jay Storeshaw

Dr. Roger Strasser

Grant Walsh

Report from the Chair of the Board of Directors



Our vision – “Healthy Together” – became more and more relevant every day this past year. One important reason is our continued commitment to Patient and Family Centred Care, or PFCC.

We remain the first and only hospital to receive a PFCC Leading Practice designation from Accreditation Canada. Literally every decision made at the council level has input from a Patient and Family Advisor (PFA).

That’s important because ultimately we serve these

patients and their families – why wouldn’t we want to get guidance from them? As obvious as that strategy sounds, it is a fairly revolutionary attitude toward a bottom-up approach to healthcare planning designed to meet patient need rather than provider need. It involves co-leadership; healthcare professionals bring their medical expertise to the table while PFAs bring their knowledge and expertise about what it is like to be a patient at the TBRHSC.

This level of partnership is building a better healthcare system. Equally important to our progress are our collaborations with our other partners. That includes not only closely related institutions such as the Thunder Bay Regional Research Institute, Northern Ontario School of Medicine, the Northwest Local Health Integration Network, Lakehead University, and Confederation College, but also our community healthcare services partners. It also includes of course the Thunder Bay Regional Health Sciences Foundation, which provides funding for many of our initiatives.

The result is significant achievements made this past year as we continue our journey from a community hospital to an academic health sciences centre. I encourage you to read through this document to learn about some of them. I extend my heartfelt appreciation to the staff, healthcare professionals and volunteers at TBRHSC who worked diligently to deliver quality care to patients and families. The recognition TBRHSC receives and the successes it celebrates belong to them. I could not be more proud of our team.

Susan Fraser

Chair of the Board,
Thunder Bay Regional Health Sciences Centre



Report from the President & CEO



As we pass the halfway mark of our ambitious Strategic Plan 2015, I am extremely happy with the work we completed so far. Many of the activities have been completed on or ahead of schedule.

However there have been challenges, and overcapacity is chief among them. At one point in January we had almost 90 patients waiting in our hospital for Alternate Level of Care (ALC) in the community. Not only does this have an obvious and immediate impact on patient

care, in the long term it causes a domino effect, significantly reducing patient and staff satisfaction.

Although we have worked hard to ease pressure within the TBRHSC, the simple fact is that we cannot discharge patients until they have a place to go to. A long-term solution is needed, and we remain committed to working with our partners in healthcare to ensure patients receive the right care in the right place at the right time by the right provider.

Our decisions and actions are always guided by our mission, vision and values, as well feedback from the people we serve. We receive ongoing input from our Patient and Family Advisors (PFAs) and we engage annually with our five partners in healthcare to ensure our Strategic Plan remains relevant. Engagement allows us to demonstrate where we are on schedule, and to re-examine whether we need to allot more time or more resources to achieve certain goals within a realistic timeframe.

This report highlights our progress. I invite you to read for yourself how well we are doing. I also encourage you to become personally involved and help your academic health sciences centre grow and improve: become a PFA, become a volunteer, donate to the Thunder Bay Regional Health Sciences Foundation, join a clinical trial if appropriate, or provide feedback so that we can continue to be Healthy Together.

Andrée G. Robichaud

President and CEO,
Thunder Bay Regional Health Sciences Centre

SENIOR MANAGEMENT TEAM

Andrée Robichaud

President & Chief Executive Officer

Dr. Gordon Porter

Chief of Staff

Dr. Rhonda Crocker Ellacott

Executive Vice President,
Patient Care, Health Professions,
and Chief Nursing Executive

Dr. Mark Henderson

Executive Vice President,
Chronic Disease Prevention
and Management

Dr. Stewart Kennedy

Executive Vice President,
Medical and Academic Affairs

Lori Marshall

Executive Vice President,
Strategy, Performance and
Aboriginal Health

Scott Potts

Executive Vice President,
Corporate and Diagnostic Services

Rod Morrison

Vice President, Human Resources
and Organizational Development

Janet Sillman

Vice President, Mental Health
and Addictions

Bruce Sutton

Vice President, Informatics &
Chief Information Officer

Dr. Michael Wood

Vice President, Research

Cathy Covino

Senior Director, Quality and
Risk Management

Tracie Smith

Senior Director, Communications
and Engagement

Glenn Craig President & CEO

Thunder Bay Regional
Health Sciences Foundation

Janet Northan

Director, Government Relations

The Senior Management Team gratefully acknowledges the following individuals who served in acting positions in 2012/2013:

Dot Allen

as Chief Nursing Officer

Carolyn Freitag

as Chief Nursing Officer



Aboriginal Health

Our journey towards excellence in Aboriginal Healthcare delivery begins with improving our physical and cultural environments to reflect the expressed values, practices and traditions of Aboriginal communities.



TBRHSC's Aboriginal Advisory Committee members are (back, left to right) Robert Fenton, Abe Kakepetum, Mona Hardy, Dr. Mark Henderson; (middle, left to right) Carmen Blais, Louise Thomas, Jeannie Simon, Susan Anderson, Teresa Trudeau, Brenda Mason, Kanita Johnson, Andrée Robichaud, Tracie Smith; (front, left to right) Ernie May, Sandra Cornell, Jason Beardy, Fred Sky, Sam Achneepineskum. Missing: Daryl Ottertail, Francine Pellerin, Shelley Whitney, Stanley Sainnawap, Susan Fitzpatrick, Tina Armstrong, Rev. Merv Wilson.

Improving Aboriginal Health Starts with Engagement

To advance Aboriginal Health in 2012-2013, the number one priority was connecting with Aboriginal partners and representatives. Carmen Blais, who filled the new position of Aboriginal Engagement Lead and Patient Advocate in September 2012, expanded the Aboriginal Advisory Committee from fewer than 10 members to 23. "Improving Aboriginal Health is a complex task that has to start with engagement," Blais said. "It's important to get as many people to the table as possible so we understand where we need to improve, and how best to bring about that change."

Early in the process, members were asked to volunteer to advance the goals outlined in the Strategic Plan 2015. Committee member and elder Abe Kakepetum chose to be involved with helping establish an environment that is more welcoming to Aboriginal patients and families. He said that language is one obvious barrier for patients who do

not speak English. It's important to find interpreters who understand medical conditions so that they can explain it to the patient properly.

There are other cultural differences that can have an impact on care. For example, it's traditional for family and the community to gather on the passing of one of its members, something that can conflict with TBRHSC policies in certain units. Providing traditional foods, especially to elderly patients, can help too. Kakepetum said he wants to help remove all barriers to healthcare for Aboriginal patients.

"If you don't have a program like this, there can be a lot of misunderstanding on both sides," Kakepetum said. "[TBRHSC physicians and staff] have their ways for making a person feel comfortable, but at the same time, we have different values in some areas."

To better understand these values

and as part of the engagement piece, TBRHSC senior management travelled to the Sioux Lookout Meno Ya Win Health Centre, which serves a patient population of 85% First Nations, to learn how the facility approaches cultural sensitivity and awareness. This includes decorating with traditional Aboriginal artwork, making traditional foods available to inpatients and in the cafeteria, and other ideas that could be used at the TBRHSC.

One strategy already put into action in 2012 is the Cultural Safety Training session for new employees. Provided during orientation, this helps staff become more aware that there can be differences between all cultures. "Although we have a long way to go, I'm incredibly happy with the progress we've made so far," Blais said. "We will continue to build on our successes so that we meet all of our goals by 2015."

Collaborating for Better Health

Dr. Ingeborg Zehbe says working together with women and healthcare providers from First Nations communities has been critical to her research into improving screening rates and reducing human papillomavirus (HPV)-related cervical cancer among First Nations women in Northwestern Ontario.

The journey began with informal discussions with healthcare staff at Fort William First Nation. Following a pilot study, dialogue began with other First Nations stakeholders, including band chiefs and councils and community employees from the First Nations communities of the Robinson-Superior Treaty region. Community members demonstrated a strong interest in participating in the study.

The participatory action research (PAR) nature of the study has allowed researchers to learn directly from First Nations women and their healthcare providers about HPV risk behaviours, protective factors, as well as culturally safe approaches to cervical cancer prevention.

They further explored with First Nations women how factors such as colonialism, the residential school system and exposure to racism might influence the risk of HPV infection and screening behaviours in this population.

Now the team, which includes Community-Based Research Assistants from each of the 11 participating First Nations communities, are set to begin education campaigns and trials with up to 1,200 women beginning in May 2013.

Funding from the Thunder Bay Regional Health Sciences Foundation helped Dr. Zehbe’s HPV research get started and gain momentum. This project is now being funded by the Canadian Institutes of Health Research.



Local First Nations artist Kevin Belmore took his inspiration from the research project’s mission statement and then worked with Dr. Zehbe’s team to design an image that would reflect their mission and respect the First Nations culture.

The flowers symbolize hope and the turtle is a symbol of creation for many First Nations and some refer to North America as Turtle Island. Waves around the turtle indicate movement and progress in the healing journey.

Goals and Activities

Each status bar below indicates the progress to date towards completion.

Goal 1 Create an engagement strategy with Aboriginal partners to begin the development of Aboriginal Health plans and initiatives for TBRHSC.

- I. Connect and engage with Aboriginal Elders and Leaders to obtain feedback and support for the engagement process.
- II. Review and update the membership of the Aboriginal Advisory Council.
- III. Learn from centres of excellence in Aboriginal Health to determine best practices.
- IV. Engage with Aboriginal partners and community members to develop an action plan to achieve our Strategic Direction.



Goal 2 Establish and develop cultural sensitivity and awareness at TBRHSC in order to better address the needs of Aboriginal patients and families.

- I. Provide cultural awareness training to all members of the TBRHSC Team.
- II. Integrate Aboriginal staffing strategies into the Health Human Resources Plan.
- III. Establish a plan to integrate Aboriginal volunteers and Patient and Family Advisors into TBRHSC. (Proposed date change submitted awaiting approval)



Goal 3 Establish an environment at TBRHSC that is more welcoming to Aboriginal patients and families.

- I. Develop facilities at TBRHSC that are culturally welcoming for patients and families.
- II. Feature Aboriginal artwork and stories throughout the facility.
- III. Provide culturally appropriate way finding within TBRHSC.
- IV. Create a healing garden with the four sacred medicines.
- V. Provide traditional foods for Aboriginal patients and in the cafeteria.
- VI. Develop a proposal to integrate a sweat lodge into the facility. (Not yet scheduled to start)



Goal 4 Develop and implement a strategy for research and education that focuses on Aboriginal Health.

- I. Support the development of a new Strategic Plan for TBRI that includes research into Aboriginal Health.
- II. Measure and identify target areas for improvement in Aboriginal patient satisfaction (Initial consult conducted with legal counsel. Require advise prior to proceeding to next step which requires an expenditure.)
- III. Liaise with educational institutions and government to increase the number of education seats and placement opportunities for Aboriginal students. (Not yet scheduled to start)
- IV. Develop partnerships with Aboriginal communities and other institutions in order to engage in appropriate research projects.



Goal 5 Throughout our journey, ensure that all of our strategic directions are sensitive to expressed Aboriginal values, practices and traditions.

- I. Review by the Aboriginal Advisory Council of each of the strategic activities in Chronic Disease Prevention and Management, Comprehensive Clinical Services, and Mental Health and Addictions.



Chronic Disease Prevention and Management

In collaboration with our partners, we will provide an evidence-based system-wide approach to Chronic Disease Prevention and Management that reduces the impact of disease.



Patients Help Develop MyCancer Guide

Kathy Forbes has an intimate knowledge of the cancer journey. In the past five years, she has been treated for breast cancer and then lung cancer – even though she never smoked a day in her life. Now, Kathy is a Patient and Family Advisor (PFA) and a member of the Patient and Family Cancer Partnership with Regional Cancer Care Northwest at TBRHSC. She is one of the people who helped develop the MyCancer Guide for other patients.

“It can really ease your mind when you have information that better explains your situation,” Kathy said. “MyCancer Guide is very user-friendly. At any time during treatment you can get MyCancer Guide information from physicians, nurses, clerical, lab, and supportive care staff.”

Kathy said that we should take every opportunity to make the cancer journey easier. “Anything that can ease the stress, anxiety, and fear for patients and families will give them more energy to concentrate on getting through their cancer. It is a long journey. Don’t give up hope.”

MyCancer Guide Helps Personalize Cancer Care

As a result of better screening programs and more targeted systemic and radiation treatments, the five-year survival rate for most cancers are on the rise. TBRHSC has expanded its focus from simply “treating the disease” to a more holistic approach of patient-centred care that covers every step from prevention and screening through to survivorship and palliative care.

As part of that approach, the Regional Cancer Care Northwest at TBRHSC launched MyCancer Guide, an online educational tool developed to provide personalized support during the cancer journey. The website addresses a comprehensive range of practical, psychosocial, medical, emotional, financial, family, and spiritual needs. It provides accurate information for nine

different cancer sites.

What makes this guide unique is that it is personalized to the patient. Providers, including oncologists, physicians, nurses, specialists, and the Supportive Care Program team, can use the system to summarize their interactions with patients, capture diagnosis, and detail next steps. Patients can refer to that information via the Internet 24/7, quickly and securely without relying upon “Dr. Google”.

“MyCancer Guide allows patients to process information about their treatment at their own pace and learn more about their specific cancers,” said Dr. Mark Henderson, Executive Vice-President Chronic Disease Prevention and Management at TBRHSC and

Regional Vice President Cancer Care Ontario. “We are evolving from a disease-centred approach toward treatment as a partnership between provider and patient. This tool is helping us achieve that goal.”

MyCancer Guide was partially funded by the Thunder Bay Regional Health Sciences Foundation through the Northern Cancer Fund. “MyCancer Guide is an excellent example of how we are helping to personalize and continually improve cancer care,” said David Knutson, Chair of the Health Sciences Foundation. “All the information in this guide is relevant to the cancer patient being treated right here in Northwestern Ontario.”

Donors Help Make Cancer Plan a Reality



Today more people are living with cancer than dying from it. Thanks to donations to the Northern Cancer Fund of the Thunder Bay Regional Health Sciences Foundation, nobody makes the cancer journey alone. Gifts are transforming cancer care through the implementation of Regional Cancer Care Northwest's four-year cancer plan. New equipment purchased through donor support, such as linear accelerators, provides radiation therapy patients with the latest treatment options available. Most importantly, care is provided close-to-home. As breast cancer survivor Nina Ruberto says, "I think we're really fortunate - we have an awesome cancer centre. There's enough you have to worry about when you're getting cancer care, I can't imagine having to worry about going out of town for it too."

Research Aims to Reduce Impact of Chronic Disease

The Environmental Scan conducted by the Northwest Local Health Integration Network revealed that there are higher rates in Northwestern Ontario compared to elsewhere in the province for most chronic conditions.

The patient-centred research programs carried out at Thunder Bay Regional Research Institute aim to reduce the impact of chronic disease.

Scientist Dr. Chris Phenix has created a research program focused on using Positron Emission Tomography (PET) to detect aggressive cancer and help guide cancer therapy. His team has begun to develop contrast agents that can image cancer promoting proteins called oncoproteins. He hopes to develop a test which can reveal aggressive cancer much earlier than current methods and help determine which therapies have the highest chance of success.

Dr. Mitch Albert and his team are looking at the use of hyperpolarized noble gas MRI to take crystal clear images of the lung and brain. In fact, his work has the ability to make images 100,000 times clearer than conventional MRI, which will be of great value to patients with lung disease, as physicians will be able to better tailor treatment.

Goals and Activities

Each status bar below indicates the progress to date towards completion.

Goal 1 Identify and develop partnerships with clearly defined roles to ensure continuity, patient safety and quality of care for people living with a chronic disease.

- I. Create an expert panel of Chronic Disease Prevention and Management leaders from international jurisdictions and local/regional leadership.
- II. Identify issues and gaps in services through a regional environmental scan and a complete inventory of services and partners.
- III. Develop and begin implementing evidence based practice pathways for Chronic Disease Prevention and Management in Northwestern Ontario.

Completion of Initiatives



Goal 2 Adopt a collaborative framework for Chronic Disease Prevention and Management that will integrate best practices.

- I. Review the allocation of resources at TBRHSC to enable the integration of Chronic Disease Prevention and Management.
- II. Create and implement patient centred pathway(s) for Chronic Disease Prevention and Management in Northwestern Ontario.
- III. Integrate technology to support regional Chronic Disease Prevention and Management.
- IV. Establish interprofessional teams, across organizations, to provide care in Chronic Disease Prevention and Management.

Completion of Initiatives



Goal 3 Educate and engage patients, families, community members and healthcare providers.

- I. Identify and address the most common personal and health system barriers to self management at TBRHSC.
- II. Adopt and promote 'Healthy Change', the regional patient self management program for patients and families.
- III. Implement self management education programs for healthcare providers.
- IV. Partner to expand secondary prevention including evidence based screening programs.
- V. Screen emergency patients to determine if they have had a physical examination within the last year and if appropriate facilitate a connection with primary care providers.
- VI. Partner to develop and implement an education program for patients and community members to promote healthy behaviours.

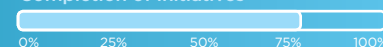
Completion of Initiatives



Goal 4 Conduct research through the Thunder Bay Regional Research Institute that will reduce the impact of chronic diseases.

- I. Support the development of a new Strategic Plan for TBRRI that includes research into Chronic Disease Prevention and Management.
- II. Obtain funding to support infrastructure and salaries for scientists to conduct research in Chronic Disease Prevention and Management.
- III. Collaborate with Lakehead University and other partners to conduct research related to the impact of chronic disease.
- IV. Identify clinical trials opportunities in Chronic Disease Prevention and Management through the translational research program.
- V. Create an Academic Health Sciences Centre culture of research and education by educating and supporting the TBRHSC Team

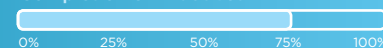
Completion of Initiatives



Goal 5 Collaborate with the LHIN, health service providers and patients to develop and begin the implementation of a plan for a health system electronic medical record as a component of the CDPM Framework.

- I. Collaborate with the LHIN on a broader health system plan for a health system electronic medical record.
- II. Develop the hospital sector plan for a health system electronic medical record.
- III. Participate in Connecting Northern & Eastern Ontario (CNEO) activities including the adoption of the CNEO solution for a provider portal.
- IV. Explore and begin implementation of patient self management option and activities.
- V. Support the implementation of best practice guidelines and order sets from an Informatics perspective.

Completion of Initiatives

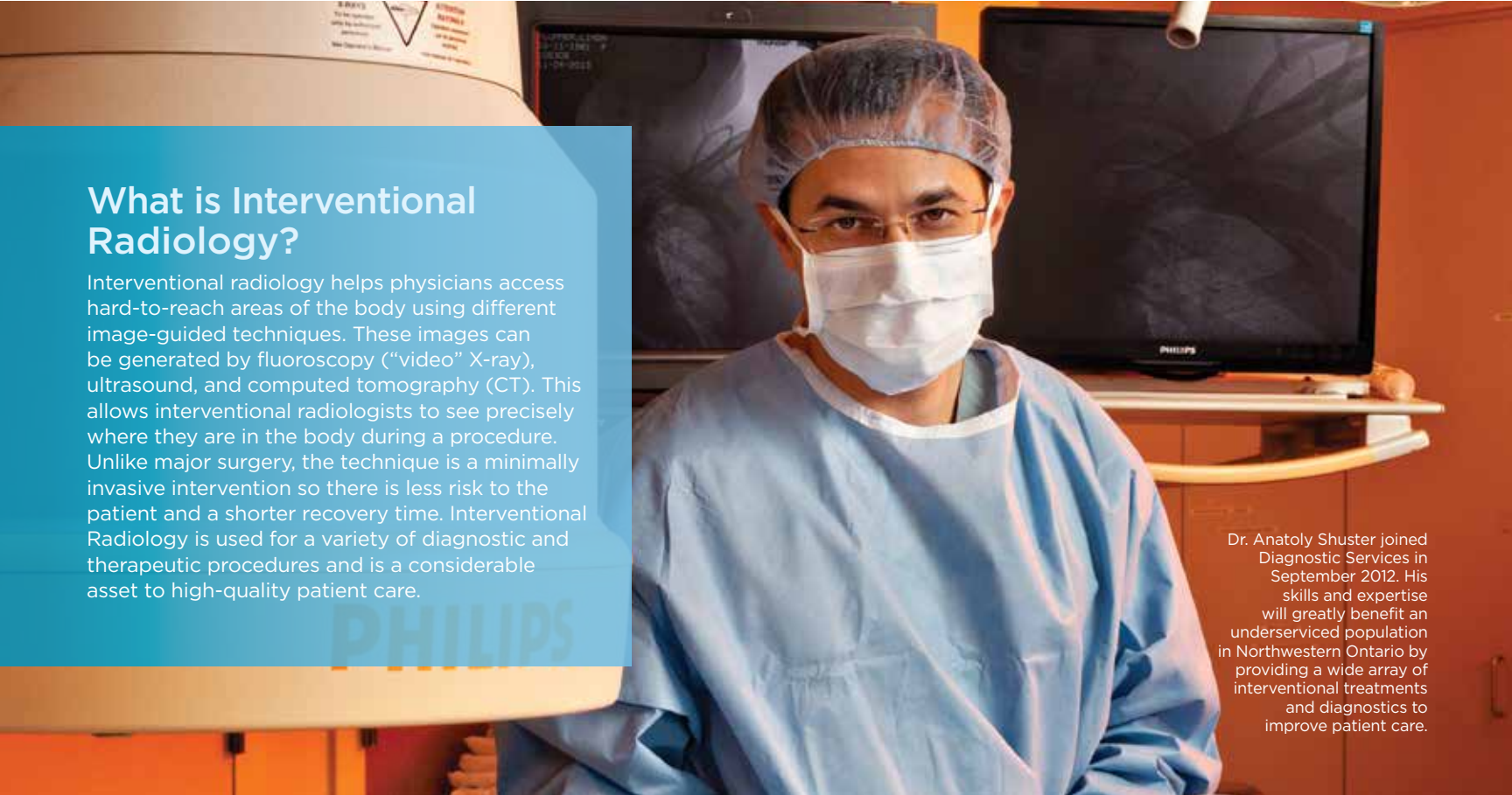


Comprehensive Clinical Services

We will partner to deliver comprehensive secondary and tertiary services to provide evidence based care that is focused on quality and patient safety for the people of Northwestern Ontario.

What is Interventional Radiology?

Interventional radiology helps physicians access hard-to-reach areas of the body using different image-guided techniques. These images can be generated by fluoroscopy ("video" X-ray), ultrasound, and computed tomography (CT). This allows interventional radiologists to see precisely where they are in the body during a procedure. Unlike major surgery, the technique is a minimally invasive intervention so there is less risk to the patient and a shorter recovery time. Interventional Radiology is used for a variety of diagnostic and therapeutic procedures and is a considerable asset to high-quality patient care.



Dr. Anatoly Shuster joined Diagnostic Services in September 2012. His skills and expertise will greatly benefit an underserved population in Northwestern Ontario by providing a wide array of interventional treatments and diagnostics to improve patient care.

Interventional Radiology "Great Benefit to Our Patients"

One of the leading accomplishments for Comprehensive Clinical Services during 2012/2013 was the recruitment of an interventional radiologist and the subsequent launch of Diagnostic Services' Interventional Radiology Program. Dr. Anatoly Shuster, who joined Diagnostic Services in September 2012, is trained in vascular and interventional radiology through the University Health Network/ Mount Sinai fellowship program in Toronto. His skills and expertise will greatly benefit an underserved population in Northwestern Ontario.

The greatest impact will be on patients with chronic disease including atherosclerosis and other vascular disorders, diabetes, and cancer. Unfortunately, our region has higher rates than normal for these diseases. In turn, this leads to a greater percentage of complications such as blood vessel narrowing, renal failure, and other complex medical issues. The Interventional Radiology program will help diagnose and treat many

of those complications leading to a better quality of life and in some cases extend life. The program is a key step towards launching a vascular surgery program.

"There is a huge need here in Northwestern Ontario – when I first heard about it I was surprised," Dr. Shuster said. "There is an extremely high rate of incidence for vascular-related complications and amputations."

An interventional radiologist performs a number of procedures including maintaining blood flow and access to arteries and veins for people with vascular disease and renal failure, stopping unwanted blood flow in tumours and bleeding vessels, draining abscesses deep in the body, obtaining tissue samples for biopsy, draining kidneys for patients with urinary obstruction, and many others. Previously, some of these procedures would be done by a visiting locum radiologist if available, at another hospital outside of the region (requiring

the patient to travel), or surgically if possible. For example, previously Portocath insertions for chemotherapy patients were completed in an operating room. Now, Dr. Shuster can perform them in the Angiography Suite instead, which frees up valuable surgical resources and is much more convenient for patients.

Dr. Shuster is building the program from the ground up by training staff and reviewing needed equipment. Approximately one new procedure per month has been added to program's list of services.

"With the minor interventions that can be performed, a patient would spend a half-day in surgical day care," said Dr. David Kisselgoff, Chief of Diagnostic Imaging. "Compared to a major intervention such as surgery where the patient is hospitalized for at least several days and possibly more than two weeks for major surgery, that's of great benefit to our patients."

Donors Make New Medical Equipment Possible



A typical scene in the Critical Care Unit reveals each patient hooked up to a cardiac monitor – after all, it’s the standard of care. However, the current monitors are almost nine years old, and after constant use, need replacement. Thankfully, through generous donations to the Thunder Bay Regional Health Sciences Foundation, \$500,000 has been made available to replace the entire cardiac monitoring system in the Critical Care Unit. Donors are literally saving lives.

Another piece of equipment that the Thunder Bay Regional Health Sciences Foundation funded this year was the Stealthstation which allows surgeons to navigate through the body with 3D images as their guide.

Connecting Research to Patient Needs

One of the important aspects of patient-centred research is making connections between the scientist who is advancing a particular technology and clinical partners to make sure the technology addresses the right patient need.

One of those connections is in the area of MRI-guided High Intensity Focused Ultrasound (HIFU). Dr. Laura Curiel and her team are evaluating the use of HIFU to remove uterine fibroids. The ultrasound gives the ability to remove a fibroid without once making an incision in the skin.

This is a huge breakthrough – a non-invasive alternative to hysterectomy that can be done as an outpatient procedure, greatly reducing patient discomfort and increasing patient safety. One can only imagine how this might be used in the future to remove tumours without needing surgery.

Discussions with leaders of Comprehensive Clinical Services at TBRHSC identified several promising opportunities for research. The most notable are clinical trials, simulation, health services research pertaining to patient flow, health informatics, and the translation of HIFU for clinical use in the ablation of uterine fibroids.

Goals and Activities

Each status bar below indicates the progress to date towards completion.

Goal 1 Develop and deliver secondary and tertiary care based on evidence.

I. Develop and implement a cardiovascular service that includes:

- a. Vascular surgery
- b. Cardiac surgery
- c. Interventional Radiology
- d. Rhythm Management

II. Develop and implement a plan for image guided intervention.

III. Align and implement a Master Service Plan to establish a full spectrum of Academic Health Sciences Centre services.

IV. Create an office of evidence based practice and pathway development.

Completion of Initiatives



Goal 2 Collaborate to deliver care in the most appropriate setting.

I. Review the allocation of resources at TBRHSC to ensure alignment with core services.

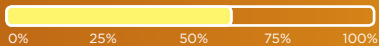
II. Collaborate to implement the Academic Family Health Team.

III. Partner to improve transitions of care to and from the community for patients.

IV. Collaborate to develop a regional healthcare service plan to enable delivery of the appropriate care in the appropriate setting.

V. Develop an emergency response system which includes a surge/overcapacity system.

Completion of Initiatives



Goal 3 Create an interprofessional academic learning environment to improve care.

I. Collaborate and partner to develop a simulation program as a catalyst for interprofessional education.

II. Enhance the interprofessional component of the Medical Clinical Teaching Unit and expand the Clinical Teaching Unit concept to other Programs and Services.

III. Provide opportunities for the TBRHSC Team to work collaboratively in interprofessional teams to increase the awareness of roles and responsibilities.

IV. Develop internal and external education to expand knowledge about what it means to be an Academic Health Sciences Centre and facilitate the integration of learners.

Completion of Initiatives



Goal 4 Conduct research through Thunder Bay Regional Research Institute that will develop new evidence to advance care.

I. Support the development of a new Strategic Plan for TBRRI that includes research into Comprehensive Clinical Services.

II. Develop a process for TBRRI to manage all research at TBRHSC.

III. Educate the TBRHSC Team about research, studies currently being conducted and opportunities for future focus.

IV. Develop a process for TBRHSC Team members to provide research ideas and connect with TBRRI researchers.

V. Develop a model to protect clinicians' time to ensure participation in research, academics and clinical service.

VI. Create an Academic Health Sciences Centre culture of research and education by educating and supporting the TBRHSC Team.

Completion of Initiatives



Mental Health and Addictions

We will collaborate to create a more compassionate, knowledgeable, safe and connected system to improve the overall health and quality of life for people living with mental illness and/or addictions.



"It's awesome that the Maternity Centre and the Ontario Addiction Treatment Centres are working together to offer this program side by side – it's just so convenient."

A Maternity Centre and OATC client

"Every mother wants to be a good mother," says Debra Bishop, a nurse practitioner who provides prenatal care to pregnant women overcoming drug addiction through the partnership between the TBRHSC Maternity Centre and Ontario Addiction Treatment Centres.

Access to Prenatal Care for Pregnant Women Overcoming Addiction Improves Outcomes

Mental Health and Addictions requires a systemic approach, including partnerships with many community organizations and agencies. The Thunder Bay Regional Health Sciences Centre continued to provide a leadership role in the region in 2012/2013. One initiative launched on July 1, 2012 is a partnership between the Maternity Centre of the Women and Children's Program at TBRHSC and Ontario Addiction Treatment Centres (OATC) that provides prenatal care to pregnant women overcoming drug addiction.

"Every mother wants to be a good mother," said Debra Bishop, a nurse practitioner at the Maternity Centre who works with the outreach program. However, expectant mothers undergoing drug rehab are usually dealing with

more issues than most women do during pregnancy, which impacts accessing prenatal care services. Bishop holds a clinic two times a month – once each at two of the three OATC methadone clinics in town – to reach out to pregnant women as they come in for treatment. The preferred goal is to have them come to the Maternity Centre at TBRHSC so that they can access a social worker, dietician, exercise therapist, lactation consultation, and other prenatal services. At the very least, mothers-to-be can access basic prenatal care services at OATC from Bishop, who monitors their pregnancies, connects them with physicians and obstetricians as necessary, and provides continuity of care.

The Women and Children's Program also developed best practice guidelines

for screening and treating babies with Neonatal Abstinence Syndrome (NAS) – essentially withdrawal from methadone or opiate-based drugs – after birth. These guidelines eventually went on to form the basis of Provincial Council for Maternal and Child Health (PCMCH) recommendations. Thanks to these guidelines, healthcare professionals in the Women and Children's Program can better identify and treat symptoms, providing better care to the baby and reducing the risk of potentially serious side effects.

"Providing early access to prenatal care for mothers with addictions improves patient outcomes for both mothers and babies, and helps them get a healthy start," Bishop said.

Donation Creates Comforting Atmosphere

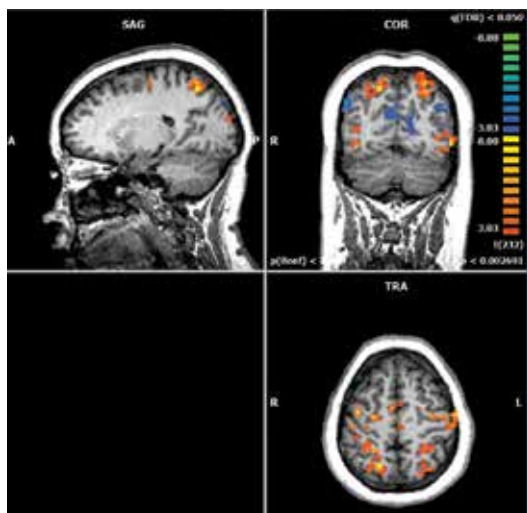
The Child and Adolescent Mental Health Unit is now a more welcoming place, thanks to a donation from Bearskin Airlines. Their generosity helped realize several patient-focused projects including: painted blackboards in patient rooms, a shade over the courtyard's picnic table, a washer and dryer and an inspirational mural.

"These small but impactful changes positively enhance the environment," explained Angela Hill, Coordinator, Child and Adolescent Mental Health. "The mural is what we are all really excited about. Having positive messaging on the wall can brighten a patient's day. The artwork is something they can relate to, making it an age-appropriate environment."

The Child and Adolescent Mental Health Unit is an eight-bed inpatient unit designed to meet the needs of youth (6-17 years) with severe mental health concerns.

"Supporting Child and Adolescent Mental Health is just one of the ways we can help to improve healthcare in our community," said Cliff Friesen of Bearskin Airlines.

fMRI Potential for Understanding Addictions



Brain research into the impact of substance use or adverse events in childhood affecting brain physiology will benefit from TBRRI's fMRI capability, which we can develop in partnership with organizations such as the Ontario Brain Institute.

TBRRI scientist Dr. Lawrence-Dewar is already using structural and functional magnetic resonance imaging (fMRI) of the brain and spinal cord to help understand the disruption and reorganization of neural networks in the brain following injury due to stroke and recovering motor control and adaptation during rehabilitation.

Generous support through the Thunder Bay Regional Health Sciences Foundation helped to purchase equipment that will not only benefit patients but also allows scientists like Dr. Jane Lawrence-Dewar to continue their research.

Goals and Activities

Each status bar below indicates the progress to date towards completion.

Goal 1 Collaborate to improve service and flow throughout the continuum of care.

- I. Review the allocation of resources at TBRHSC to ensure alignment and integration of services.
- II. Identify issues and gaps in the treatment continuum through a regional environmental scan and a complete inventory of services and partners.
- III. Develop evidence based practice pathways with community partners to improve the flow of patients through the system.
- IV. Expand the use of telemedicine to provide services to the residents of Northwestern Ontario and support patients in their own environment.
- V. Partner to improve transitions of care to and from the community for patients.

Completion of Initiatives



Goal 2 Collaborate to prevent and reduce the impact of addictions throughout Northwestern Ontario.

- I. Encourage and set parameters around the development and use of prescribing tools around addictions.
- II. Advocate for a regional prescription and drug monitoring program.
- III. Support the implementation of the 'Thunder Bay Drug Strategy'.
- IV. Collect and interpret TBRHSC addictions data including the cost of treatment to create a shared understanding of issues with our partners.
- V. Partner to develop early identification and intervention programs for infants and parents.

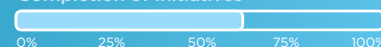
Completion of Initiatives



Goal 3 Improve the experience and outcomes for patients and families living with mental illness and/or addictions within TBRHSC.

- I. Provide education on the management of patients with mental illness and addictions to build internal capacity.
- II. Build mental health professionals into treatment teams in all Programs and Services.
- III. Create a physical environment in patient care units and the Emergency Department that respects privacy and safety.
- IV. Develop and implement mental health and addictions pathways for inpatients.
- V. Establish a Psychiatric Emergency Service.
- VI. Partner in a social marketing campaign to demystify mental illness and addictions and reduce stigma and discrimination.

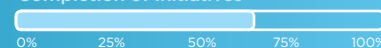
Completion of Initiatives



Goal 4 Develop and implement a strategy for research and education that focuses on Mental Health and Addictions.

- I. Support the development of a new Strategic Plan for TBRRI that includes research into Mental Health and Addictions.
- II. Collaborate to support the development of an expert panel for Mental Health and Addictions.
- III. Develop and advocate for academic training, residency and professional training programs that provide interprofessional Mental Health and Addictions education.
- IV. Develop and adopt core competencies for education and training for the TBRHSC Team.
- V. Create an Academic Health Sciences Centre culture of research and education by educating and supporting the TBRHSC Team.

Completion of Initiatives



A photograph of two healthcare workers, a woman in a purple scrub top and a woman in a blue scrub top, walking and talking in a bright, modern hospital corridor. They are both wearing stethoscopes and identification badges. The corridor has a curved ceiling and large windows on the right side.

Facing Challenges

A shortage of community resources, particularly for long-term care spaces, mental health and addictions services, and chronic disease management, leaves people with no option but to seek care at the Emergency Department at Thunder Bay Regional Health Sciences Centre. This is a not sustainable option. And more beds at our Health Sciences Centre is not the answer.

Many beds at TBRHSC are occupied by Alternate Level of Care (ALC) patients who no longer need acute care, but cannot be discharged because there is no safe location available to them, such as a long-term care facility, the patient's own home with support from community care providers, or rehabilitation.

Throughout January, 2013, our resources were strained as TBRHSC operated over capacity on a daily basis, with up to 429 patients admitted to its 375-bed facility. On January 9, there were 86 ALC patients waiting to be discharged to beds in the community. This caused a backlog because patients who did require acute care had to wait in alcoves and treatment rooms until a bed became available within the hospital.

A number of strategies were implemented to reduce the strain:

- 10 beds added to create an ALC Overflow Unit.
- 35 surgeries cancelled.
- Addition of a Utilization Coordinator, Social Worker, and Physiotherapist on weekends to facilitate the discharge of patients.
- Twice-daily bed allocation meetings with senior leadership to identify opportunities to reduce overcapacity pressures.
- Staff member assigned to patrol the halls every 20 minutes to ensure fire routes remained clear.

However, these measures are neither acceptable nor sustainable. The next overcapacity crisis is imminent. It has become increasingly difficult to protect patients and families from feeling the impact of healthcare system issues, especially in Northwestern Ontario, where people are sicker than in the rest of the province.

Immediate action and a long-term solution are needed. The North West Local Health Integration Network (LHIN) has identified that the current shortage of beds available in the community will continue to grow as the population ages. We remain committed to working with our partners in healthcare. It is important when TBRHSC goes into a surge situation, that there is a similar collective response from our community partners. We all serve the same patient.

Cardiovascular and Stroke Program

Toward a comprehensive cardiovascular surgical program

Under the Strategic Direction of Comprehensive Clinical Services, a key goal has been the development and implementation of a cardiovascular service that includes vascular surgery, cardiac surgery, interventional radiology and rhythm management and we continue to progress steadily toward the creation of a comprehensive Cardiovascular Surgical Program. A proposal was submitted to the Local Health Integration Network (LHIN) and Ministry of Health and Long-Term Care for Vascular and Cardiac surgery, Rhythm Management and Neuro interventions.

In order to understand both the challenges our regional partners experience and what our team could provide to improve regional patient care, we continue to build relationships with care providers in

the region through team outreach visits and site meetings in facilities in Red Lake, Dryden, and Sioux Lookout. Sioux Lookout is of special interest as a major care provider to Aboriginal patients and families as a model to help our team design the cardiovascular program expansion with insight and sensitivity.

Patient Outcomes:

- access to newly recruited interventional cardiologist
- improved effectiveness of air ambulance transport through collaboration with ORNGE
- newly developed care pathway for patients with addictions and Infective Endocarditis
- patients to benefit from addition of Sioux Lookout as a regional Telestroke Centre



Cardiologist, Dr. Frank Nigro, a driving force behind the development of cardiac care in Northwestern Ontario, helped TBRHSC celebrate 25 years of cardiac catheterization services earlier this year.

Chronic Disease Prevention and Management Program and Medicine Services

Collaborating to provide evidence-based care that reduces the impact of chronic disease

This past year saw a number of exciting developments to help people living with a chronic disease. Thanks to funding from the Ontario government and a partnership with the Ontario Bariatric Network, a new Medical and Weight Management model at the Bariatric Care Centre means that patients now have an evidence-based alternative to surgery. Available as of January 2013, the model, delivered by an interprofessional team, can also help prepare patients who would otherwise be ineligible for surgery.

With interdisciplinary team members, community and provincial partners, including Ontario Renal Network, Ontario Stroke Network, and Northern Diabetes Health Network, we have been able to research and

apply evidence based practices to patients experiencing diabetes, COPD/Asthma and Renal Disease.

Patient Outcomes:

- integrated technology led to improved access for patients to telehomecare
- patients with diabetes, COPD/Asthma and Renal Disease have access to evidence based practices
- Bariatric Care Centre's new medical and weight management program means patients have an alternative to surgery
- medical and weight management program can also help prepare patients who would otherwise be ineligible for surgery



Sarah Miller is a Registered Dietitian at TBRHSC's Bariatric Care Centre, which earlier this year began offering a Medical Weight Management program which involves cognitive behaviour therapy and a meal replacement program.



Linda Stewardson shared her story of addictions, stigma and recovery with staff at TBRHSC in one of a series of presentations designed to help educate and reduce stigma in order to deliver safe, high quality healthcare for patients and families living with the effects of substance use.

Mental Health Program

Creating a more compassionate, connected system for people living with mental illness and/or addictions

Over the past year, a great deal of attention and resources focused on collaborating to improve service and flow throughout the continuum of care. The Mental Health Program established a Utilization Coordinator to facilitate flow of Mental Health patients from the Emergency Department to the community or Adult Mental Health or from Adult Mental Health to the community.

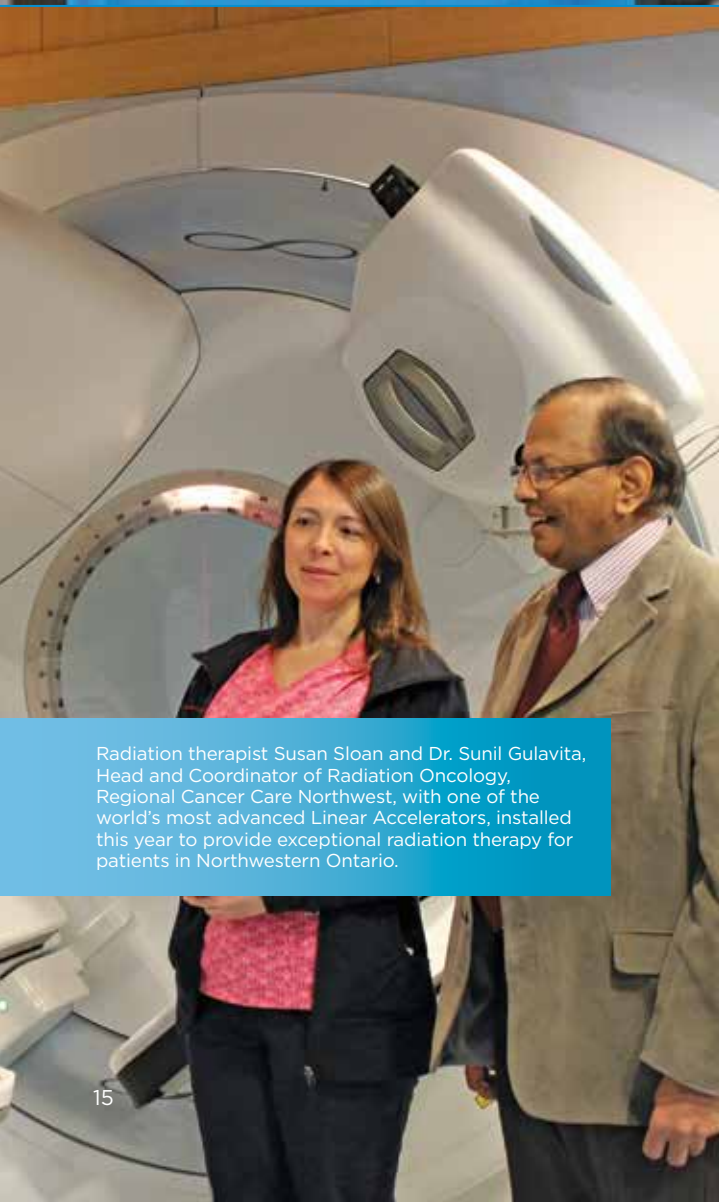
The TBRHSC Shared Mental Health Care Service (SMHCS), our community collaboration with the Fort William Family Health Team, continues to have the lowest waits for service delivery at any of our Outpatient Mental Health Services.

A comprehensive three-month education series for all staff was provided to build internal

capacity to better understand the needs of people who live with substance use and strategies to improve their experience with us (developed and provided by St. Joseph's Care Group).

Patient Outcomes:

- improved service and flow throughout the continuum of care
- low wait times for service delivery at the TBRHSC Shared Mental Health Care Service
- healthcare professionals who are receiving education to better understand the needs of people who live with substance use
- improved matching of clients' needs to the most appropriate level of service



Radiation therapist Susan Sloan and Dr. Sunil Gulavita, Head and Coordinator of Radiation Oncology, Regional Cancer Care Northwest, with one of the world's most advanced Linear Accelerators, installed this year to provide exceptional radiation therapy for patients in Northwestern Ontario.

Regional Cancer Program

Overcoming barriers to information and self-management

A key activity within the strategic direction of Chronic Disease Prevention and Management is identifying and addressing the most common personal and health system barriers to self-management. In the past year, Regional Cancer Care Northwest launched two new programs aimed at improving access to services so fewer patients report "they wanted, but did not receive information." MyCancerGuide.ca is a new patient education and teaching tool developed for people affected by cancer. Thanks to another initiative launched this year, the New Patient Orientation Program, patients report that they have the information they need about Supportive Care Services. We also implemented a new Palliative Care Program for cancer patients.

We are working to integrate interprofessional team members for the provision of patient navigation in Diagnostic Assessment Programs and cervical and colorectal screening in a mobile setting. A new Screening Coach is now operational.

Patient Outcomes:

- access to a new Linear Accelerator (Radiation Treatment Device)
- fewer barriers to self-management for patients with cancer
- Rapid diagnostic assessment pathway (DAP) for lung cancer diagnosis
- patients report that they have the information they need about Supportive Care Services

Women and Children's Program

Identification and intervention programs for infants and parents

Approximately 94% of women who have their babies at TBRHSC are served in some capacity from the Maternity Centre. Visit volume is increasing and there is a high demand for and utilization of services, such as lactation consulting services.

The Maternity Centre also conducted a community consultation about smoking cessation programs for pregnant women in partnership with Echo: Improving Women's Health in Ontario, which resulted in a number of recommendations to help shape smoking cessation strategies in the Women and Children's program.

A Youth Suicide Prevention Task Force, related to Child and Adolescent Mental Health Unit, was also established.

We also established coordination of a RSV (Respiratory Syncytial Virus) Clinic and the transfer of the Visiting Cardiology Clinic to the Paediatric Outpatient Clinic.

Patient Outcomes:

- mothers and babies have access to a nurse practitioner from the Maternity Centre at on-site satellite clinics providing prenatal care to women on a methadone maintenance program
- service from the Maternity Centre such as lactation consultation
- improved health services through implementation of a new Perinatal Database
- improved process for procedural sedation in paediatric inpatient and outpatient areas

Danielle Williams (left) and Stefanie Middleton (right) with their babies Alia and Rosalie participate in Bosom Buddies, a course that provides mothers with support and information about breastfeeding, nutrition, exercise, and other community services.



Trauma Program, Emergency, Base Hospital and Critical Care Services

Patient safety and quality care

Identifying and developing partnerships to ensure continuity, patient safety and quality of care for people living with a chronic disease is always a priority. In the past year, Critical Care / Intensive Care Unit (ICU) participated in the Canadian Medication Reconciliation Collaborative through Safer Healthcare Now. The main goal was to improve patient safety and reduce avoidable adverse drug events. As a result, ICU has developed a consistent medication reconciliation process upon admission and transfer.

The department conducted 12 P.A.R.T.Y (Prevent Alcohol and Risk-Related Trauma in Youth) Programs reaching approximately 400 high school students and developed a Trauma booklet for patients, families and staff.

Our Emergency Department (ED) is one of the best performers in Ontario for wait times for non-admitted patients and physician initial assessment times, in part thanks to a new Rapid Assessment Zone for non-admitted high-acuity patients and a Geriatric Emergency Management (GEM) nurse to help reduce avoidable geriatric ED visits and admissions.

In collaboration with Adult Mental Health, the ED identified key components to improve psychiatric care and management in the department.

Patient Outcomes:

- improving patient safety
- reducing avoidable adverse events
- low wait times for non-admitted patients and physician initial assessment
- access to prevention education



Physician Assistant Ben Piper is helping the Emergency Department reduce wait times for initial assessments, contributing to overall patient safety and enhancing patient and family centred care for emergency patients.



Earlier this year Family Physician and Regional Primary Care Lead, Dr. Margaret Woods, took part in the travelling ColonCancerCheck Pledge Station, which encourages anyone age 50 and over to talk to their healthcare provider about screening for colorectal cancer.

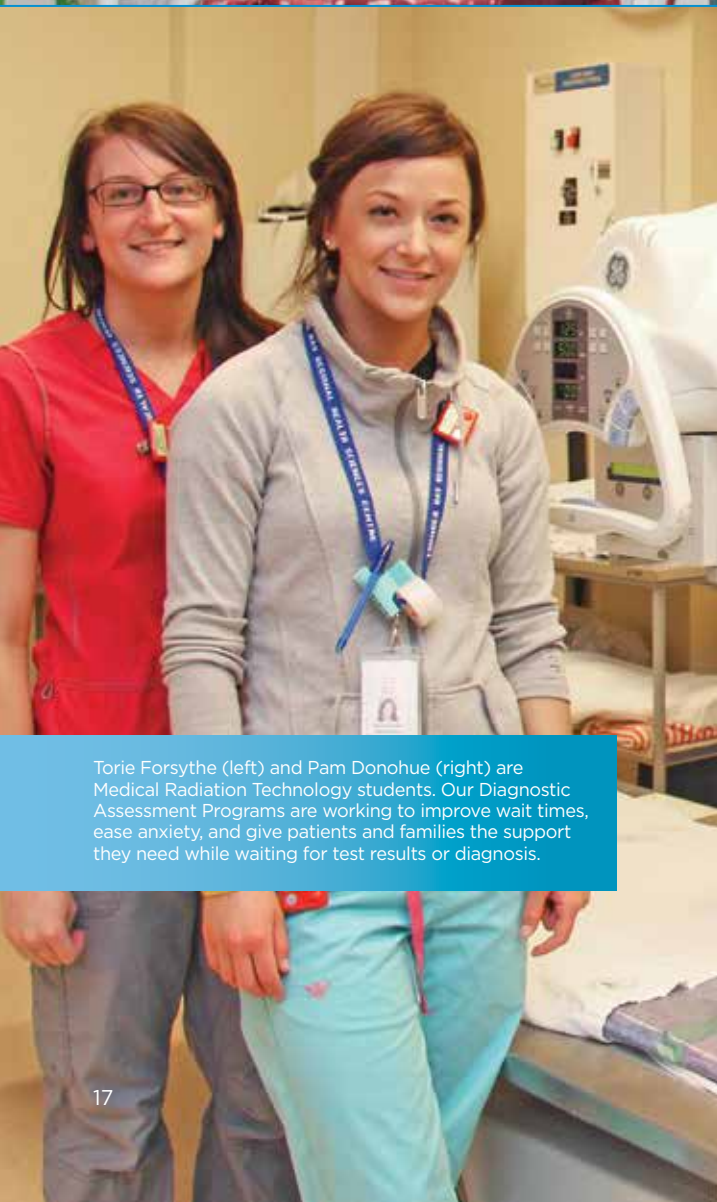
Prevention and Screening Services

Promoting healthy behaviours

Educating and engaging patients, families, community members and healthcare providers are key to promoting healthy behaviours, such as screening. To promote screening we undertook some ambitious initiatives including Screen for a Day events; extending Regional Under or Never Screened programming; adding cancer screening questions to Ambulatory Care Intake assessment forms at Meno Ya Win Health Centre in Sioux Lookout; designing, planning and procuring a regional mobile breast, cervical and colorectal screening service; mobile coach personal tracking tool; improvements to colposcopy equipment and space, and expanding Diagnostic Assessment Programs to include prostate and cervical cancers.

Patient Outcomes:

- improved cancer screening completeness - the percentage of women with up to date breast, colorectal and cervical screening
- updated terminology to reduce confusion and to develop consistent terminology
- comprehensive tobacco cessation support through tobacco control strategies with expanded Inpatient and Outpatient and Smoke-Free Grounds initiatives
- access to Primary Care Lead for integrated screening, Breast Imaging Lead (OBSP), Lead Mammography Radiation Technologist (MRT), Aboriginal Lead- with a focus on regional performance, quality, safety and access



Torie Forsythe (left) and Pam Donohue (right) are Medical Radiation Technology students. Our Diagnostic Assessment Programs are working to improve wait times, ease anxiety, and give patients and families the support they need while waiting for test results or diagnosis.

Diagnostic Services

Providing the right care in the right place

Diagnostic Services has worked very hard to deliver on one of the primary goals under the Comprehensive Clinical Services strategic direction: collaborate to deliver care in the most appropriate setting. The recruitment of interventional radiologist, Dr. Anatoly Shuster, and the implementation of the Interventional Radiology Services mean patients no longer need to travel in order to access these services.

The team is also participating in a provincial MRI/CT Appropriateness Pilot Project to test a web-based decision support physician order tool that uses evidence-based guidelines for ordering MRI/CT.

Another patient-centred initiative was the roll-out of Voice Gate, a software that delivers automated patient appointment reminder calls.

Patient Outcomes:

- reduce need for patients to travel for interventional procedures
- MRI/CT Appropriateness Pilot Project aimed at reducing patient wait times for MRI and CT
- improved sample turnaround times through the Laboratory Lean Assessment Project for: 'Collected to Received Time'
- patients have access to new gold standard technologies in pathology reporting in: Liquid Based Cytology - mono cellular preparations, and Ventanna Immunostainer - cancer diagnosis, classification, treatment, prognosis

Surgical and Ambulatory and Rehabilitative Services

Developing partnerships to ensure quality care for people living with a chronic disease

Patients who require hip and knee replacements are being discharged and going home with support more quickly. The surgical, ambulatory and rehabilitative interprofessional team has been very successful in meeting the mandate of the Orthopedic Expert Panel that 90 % of joint patients be discharged home with support within a 4.4 day length of stay. With support from Community Care Access Centre, we have now reached an 89 % discharge to home rate within 4.1 days.

Participating in ISAEC (Inter-professional Spine Assessment) clinic, a new Pilot program funded by the Ministry of Health and Long Term Care, patients have improved access to care for lower back pain. Both of these areas

are led by Advanced Practice Physiotherapists who work closely with our orthopaedic surgeons.

Patient Outcomes:

- a Connexall communication screen in the family waiting room lets families track their loved ones' progress through the surgical journey
- shorter hospital stays for patients with joint replacement surgeries
- improved access to care for lower back pain
- access to newly recruited plastic surgeon, urologist and an ear nose and throat surgeon, bariatric surgeon, and two new anaesthesiologists



Caroline Fanti, Advanced Practice Physiotherapist, and Dr. David Puskas of the Regional Joint Assessment Centre are now working to improve access to care for lower back pain patients.

Supportive, Palliative Care and Telemedicine Services

Increased commitment to care

As part of our comprehensive palliative care strategy, we continue to work to improve the palliative care provided to all patients. A full-time palliative care oncology nurse is in place to work closely with the Supportive Care team. A full-time palliative care on-call team has been in place for a year, consulting with and supporting the care of dozens of patients.

This year we also welcomed a new position, Inpatient Tobacco Cessation Research Nurse, to provide education and counselling as well as bed-side intensive intervention to help interested in-patients reduce or quit smoking.

Telemedicine has continued to grow, especially in serving the

people of Thunder Bay to access care outside of the city, helping patients avoid the time and costs of travel.

Patient Outcomes:

- in-patients who want to reduce or quit smoking have access to new bed-side intensive intervention nurse
- expanded support groups for cancer patients, families, and friends
- patients benefited from 9,474 clinical telemedicine visits rather than travelling for these services
- access to 2 psychosocial counselors as part of CancerChatCanada
- Telemedicine at bedside



As Inpatient Tobacco Cessation Research Nurse, Veronica Proper provides education and counselling as well as bed-side intensive intervention to help in-patients who would like to reduce or quit smoking.

World Class healthcare and our accomplishments are possible through the hard work and dedication of all of our physicians, staff, volunteers, Patient and Family Advisors, and the support of the following departments:

Administrative Staff	Nutrition and Food Services
Admitting	Occupational Health & Safety
Capital Program Planning	Patient and Family Advisors
Chief of Staff Office	Patient Care Services
Clinical Trials	Pharmacy
Communications & Engagement	Physical Plant and Biomedical
Corporate Services	Quality Management
Financial Services	Research Ethics
Health Records	Security
Housekeeping	Strategy & Performance Management
Human Resources & Organizational Development	Supply Process Distribution
Infection Control	Telecommunications
Information Systems	Thunder Bay Regional Health Sciences Foundation
Information Technology	Volunteer Association to Thunder Bay Regional Health Sciences Centre
Labour Relations	Volunteer Services
Laundry and Linen Services	
Library	
Mail Service	
Material Distribution	
Medical & Academic Affairs	
Northwest Regional Supply Chain - Sourcing and Contracting	



Dietary aides like Cindy Oda visit patients to take breakfast, lunch and dinner orders as part of Expressly for You, a food service program that offers patients choice and flexibility around their meals.

Nutrition and Food Services

An essential role in patient care

In addition to putting healthy food on nearly 400,000 meal trays for patients each year, Nutrition and Food Services also feeds more than 300,000 cafeteria customers annually. Add to that the 26,544 guests served by its catering department for 1564 events.

This past year the department also:

- received the Silver Level designation of the Ontario Public Health Association's Eat Smart! Program
- celebrated the 16th Anniversary of the partnership between Thunder Bay Regional Health Sciences Centre and Sodexo
- hosted celebrity chef Lynn Crawford with the Health Sciences Foundation3
- improved upon patient and family centered nutrition and patient care by welcoming a Food Service Registered Dietitian and a Registered Dietitian Professional Practice Lead

"Our staff take pride in what they do," says Cathy Paroschy-Harris, Director of Nutrition and Food Services. "They understand the importance of good food and great customer service in the hospital, as we work to be Healthy Together."

Financial Statements

Thunder Bay Regional Health Sciences Centre continues to manage resources responsibly and effectively, despite significant financial pressures. TBRHSC is pleased to report that it finished the 2012-2013 fiscal year in a surplus position, compared to a deficit of \$3.0 million in the previous year. This surplus has been achieved through a variety of strategic initiatives, including a reduction of overtime, efficiency improvement and funding initiatives.

STATEMENT OF FINANCIAL POSITION

March 31, 2013 (Amounts in \$ thousands)

Assets

Current assets	34,115	29,822	28,779
Non-current assets	238,660	246,473	256,185
Total Assets	272,775	276,295	284,964

Liabilities and Fund Balances

Current liabilities	43,521	41,179	40,175
Non-current liabilities	218,603	227,040	233,508
Total liabilities	262,124	268,219	270,498
Fund Balances	10,651	8,076	11,281
Total Liabilities and Fund Balances	272,775	276,295	284,964

STATEMENT OF OPERATIONS

For the year ended March 31, 2013

(Amounts in \$ thousands)

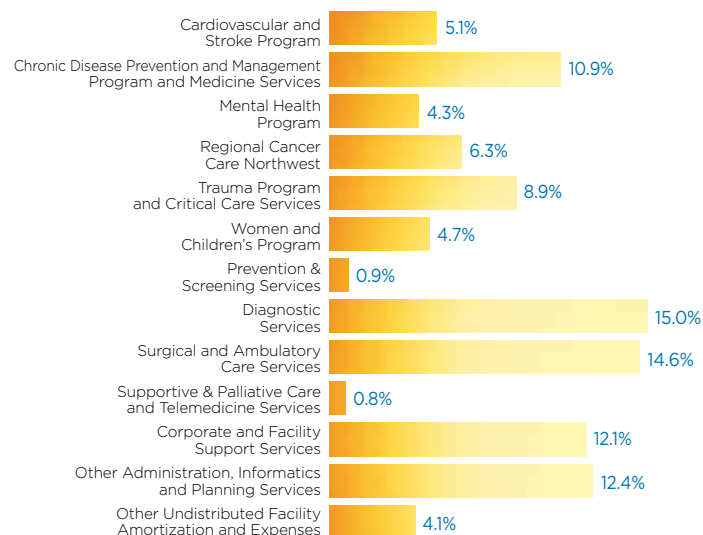
Revenue

"Ontario Ministry of Health and Long-Term Care / North West Local Health Integration Network"	233,940	227,104	221,085
Other patient services	25,109	26,716	26,721
Other funded programs	8,838	8,727	7,312
Ancillary services and other	15,532	16,246	15,117
Amortization of deferred capital contributions	16,767	16,420	19,738
	300,186	295,213	289,973

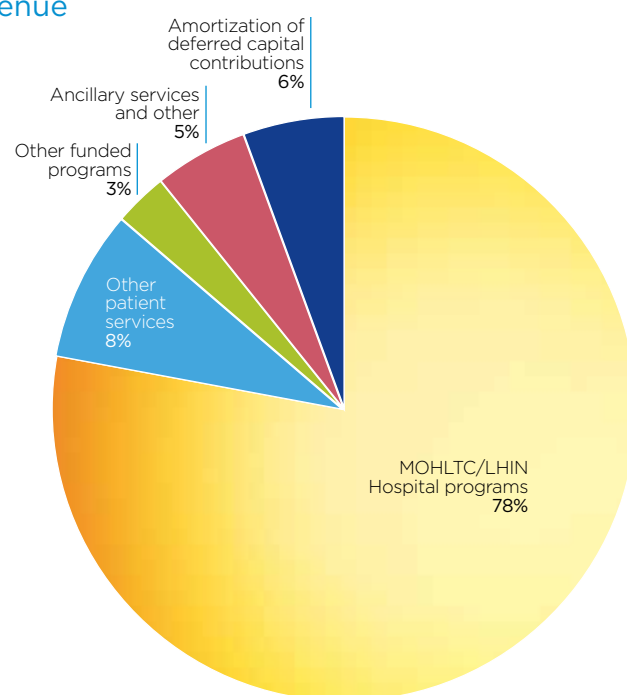
Expenses

Salaries and benefits	198,443	200,141	195,068
Medical, surgical supplies and drugs	34,486	34,919	33,866
Supplies and other	23,210	22,666	21,665
Other funded programs	8,840	8,744	7,226
Plant operations and equipment maintenance	10,753	10,517	13,614
Amortization	22,032	21,245	20,868
	297,764	298,232	292,307
Excess (deficiency) of revenue over expenses	2,422	(3,019)	(2,334)

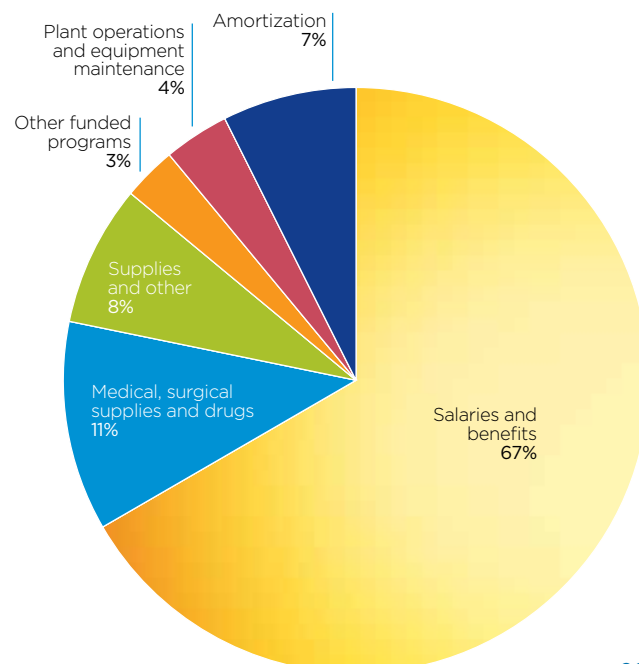
Expenses by Program and Service



Revenue

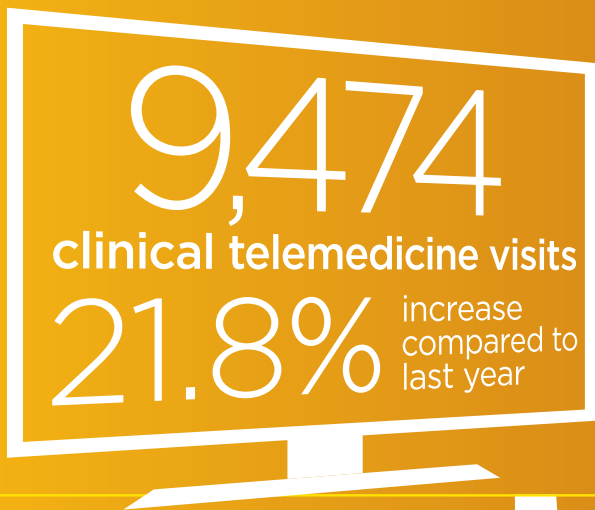


Expenses



TBRHSC by the numbers 2012 -2013

9,474
clinical telemedicine visits
21.8% increase
compared to
last year



4000

Hand sani dispensers in
the organization

Overall Hand Hygiene
Compliance increase of

23% from
last
year



573 hips
knees
revisions
bilaterals
Joints replaced



308,606

Patient Test
Results/
Reports
Sent
Electronically
to Physicians



10,584
Cancer screenings



92

Patient Family
Advisors



5,710

Breast cancer
screenings

on the Ontario
Breast Screening
Program Mobile Coach

111,657 +

Emergency
Department visits

1,531

Babies
born



102,120
Inquiries to the Info Desk



270

Medical learners

Bringing

Discovery to Life

Thunder Bay Regional
Research Institute

In partnership with
Thunder Bay Regional Health Sciences Centre
Affiliated with Lakehead University

2012 - 2013

Report to the Community
and a Year in Review

Making Connections

A New Branch for
TBRRI's Medical
Imaging Focus

Clinical Trials

Improving Patient
Care Tomorrow
and Today

Minding the Gap

A New Training
Model in Medical
Imaging

Contents

- 1 TBRI Mission, Vision, Values
- 2 Development of TBRI's Strategic Plan
- 3 Message from Chair of the Board of Directors
- 4 Message from the Chief Executive Officer
- 5 A New Branch for TBRI's Medical Imaging Focus
- 7 Clinical Trial: Improving Patient Care Tomorrow and Today
- 9 Minding the Gap: New Training Model in Medical Imaging
- 11 Health Sciences Discovery Fund: \$1.9 million invested by donors in TBRI
- 11 Funders and Partners
- 12 Grants Awarded
- 13 Financial Statements
- 14 By the Numbers

Thunder Bay Regional Research Institute

In partnership with
Thunder Bay Regional Health Sciences Centre
Affiliated with Lakehead University

Tel. 807 684 7223

ICR Discoveries

290 Munro Street
Thunder Bay, ON P7A 7T1

Translational Research Office

980 Oliver Road
Thunder Bay, ON P7B 6V4

www.tbrii.com

Thunder Bay Regional Research Institute – an independent, not-for-profit corporation – is the research arm of the Thunder Bay Regional Health Sciences Centre. Our scientists work closely with clinicians, medical professionals, and academic and industry partners to improve healthcare through excellence in patient-centred research focused on three molecular imaging-based platforms.

Research is advanced through discovery and development of new technologies and processes that are brought to patients through clinical trials. With successful trial validation, discoveries proceed to commercialization for the benefit of patients everywhere.

Thunder Bay Regional Research Institute



NEXT WAVE 2012-2016

PATIENT

MISSION:

To discover, translate through clinical trials, and bring to market advances in the prevention, diagnosis and treatment of disease

VISION:

Internationally recognized for patient-centred research focused on medical imaging

VALUES:

Patient-centredness
Integrity
Excellence
Respect

OBJECTIVES

2012-2016

GOAL 1:

Impact through Excellence in Imaging

GOAL 2:

Enabling of Research Strategic to TBRHSC

GOAL 3:

Economic Growth and Sustainability

Developing a Strategic Plan for Patient-Centred Research

Beginning in the fall of 2011, we started to develop a new Strategic Plan 2012-2016. The timing was perfect, as the Thunder Bay Regional Health Sciences Centre (TBRHSC) had just completed its own strategic plan with a focus squarely on the Patient and Family Centred Care (PFCC) model of healthcare. What we realized at that point was that we had also developed a model of patient-centred research, which dovetailed nicely with TBRHSC's goals and strategies.

Research at the TBRRI begins with identifying a specific unmet patient need, ideally stewarding a solution from the lab to benefit patients in Northwestern Ontario and ultimately around the world. This approach is designed to accelerate discoveries leading to improved methods of healthcare. With this in mind, we created a steering committee to guide the strategic planning process and identified the following guiding principles:

- TBRRI is the one and only research arm of the TBRHSC.
- The success of TBRRI will be based on research excellence.
- Excellence requires a sharp focus, which for TBRRI is medical imaging.
- The research at TBRRI is rooted in solutions to problems affecting patients and healthcare.
- TBRRI has a market orientation characterized by a determined

approach to commercialization to ensure that new technologies developed fulfill their economic and healthcare promise.

From the outset, it was clear that partnerships with TBRHSC, Lakehead University, Northern Ontario School of Medicine, Confederation College, Sunnybrook Research Institute, and many others must be built to strengthen the research and its impact on patient care. By building on our strengths in medical imaging and the collaborative spirit so prevalent in Thunder Bay and Northwestern Ontario, we have the opportunity to integrate research, learning, and clinical practice at TBRHSC; address the high prevalence of disease in Northwestern Ontario; contribute to the growth of the knowledge-based economy; support the creation of jobs; and most importantly, improve patient care.

To do this, we created three specific goals, each with its own list of objectives (please see "Goals" on page 1). We are proud to say that, one year into our plan, we are already reaping the benefits as the features on Dr. Alla Reznik and Dr. Jane Lawrence-Dewar in this report highlight. We are moving in the right direction in our Mission to discover, translate through clinical trials, and bring to market advances in the prevention, diagnosis and treatment of disease for patients in Thunder Bay, Northwestern Ontario, and around the world.

Patient-Centred Research in Action

Almost twenty years ago, Dr. Mitchell Albert and his collaborator took the first MRI images of lungs using hyperpolarized gas – a giant leap in imaging. HP gas MRI can produce high-quality images that reveal physiological processes that couldn't be seen before – and patients in Thunder Bay will be among the first to benefit. Today as a scientist at TBRRI, Dr. Albert is working with TBRHSC respirologist Dr. Birubi Biman to use HP gas MRI to more accurately monitor lung function in patients with asthma, COPD, cystic fibrosis, and other lung diseases, right here in Thunder Bay.

Commercialization is an important part of patient-centred research in action. It is the ultimate target that our discoveries benefit not only patients here in Northwestern Ontario but also around the world.

Revenues resulting from bringing our discoveries to the marketplace are in turn reinvested to fuel new life-saving and life-enhancing medical research.



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Lawyer, Shaffer Jobbitt
Law Firm
Former Chair of the Board,
Thunder Bay Regional Hospital

Don Caddo, FCPA/FCA

Vice-Chair of the Board,
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Northern Ontario School
of Medicine
Former Medical Officer,
Health Canada (Thunder Bay)
Former Provincial Coroner
Past President, Ontario
Medical Association

Dr. Roger Strasser, MD

Member of the Order
of Australia
Dean, Chief Executive Officer,
and Professor of Rural
Medicine, Northern Ontario
School of Medicine

Dr. Roxanne

Deslauriers, PhD

Former Director of Research,
Institute for Biodiagnostics
Adjunct Professor in
Chemistry, University
of Winnipeg
Adjunct Professor in
Physiology, University
of Manitoba

PAST:

Dr. Rui Wang

Dr. Brian Stevenson

Lyn McLeod

Dr. Wayne Schnarr

Dr. Fred Gilbert

Dr. Gordon Porter

Ron Saddington

Michael Power (former CEO)

Michael Gourley

Message from the Chair of the Board



This has been another year of significant achievement at the Thunder Bay Regional Research Institute. With world-leading research into such areas of imaging as fMRI, HP Xenon MRI and an X-ray Light Valve system, TBRI is continuing to establish itself and be recognized as a world-class research facility.

Our research talent continues to fuel the growth of our Academic Health Sciences Centre and Research Institute. Their patient-centred research has garnered much

deserved attention and funding that translates into boundless benefit to the health of residents in Northwestern Ontario.

We broke ground this year on the Health Services Centre to be built on Oliver Road, which will become home to our new cyclotron and radiopharmacy. A world shortage of radioactive isotopes due to the shutdown for repairs of the National Research reactor at Chalk River highlighted how vulnerable both patient care and research are to outsourcing for isotopes.

To me, this progress symbolizes our program as a whole, representing each of our three objectives that were established this past year in our Strategic Plan 2012-2016:

Impact through Excellence in Imaging – Operating a cyclotron right here in Thunder Bay means that we will be able to produce our own steady supply of medical isotopes for diagnostic imaging of TBRHSC patients, and for research.

Enabling Research Strategic to TBRHSC – Having our own source of isotopes also makes our research program less dependent on third-party suppliers. This will be yet another incentive to recruit scientists in the medical imaging field.

Economic growth and sustainability – Operating a cyclotron requires specialized skills, which will create jobs in our community. Further, we have the potential to become a supplier of medical isotopes for Canada and the United States and secure TBRI sustainability.

I think in the future when we look back at our program and patient care at TBRHSC, we will see the cyclotron as a major milestone in the history of both healthcare and healthcare research in our region.

This year, the Board wishes to say thank you and good-bye to our retiring Board Directors: Dr. Fred Gilbert, Lyn McLeod, Dr. Gordon Porter, Dr. Wayne Schnarr and Dr. Rui Wang. We also welcome new Directors: Steven Chackowicz, Dr. Rod Hanley, Tom Kehoe, Dr. Stewart Kennedy and Aldéa Landry. I am confident you will quickly learn how rewarding it is to work with such dedicated and passionate people, building a Research Institute of which we can all be proud.

Sincerely,

Keith Jobbitt, BA, LLB

Chair of the Board, TBRI

Message from the Chief Executive Officer



This past year saw the launch of a new Strategic Plan emerging from a comprehensive planning process that engaged our many partners. Please let me convey our gratitude to the people who contributed ideas to the discussion and shaped the plan. Later in this report, you will see that the plan channels our efforts towards three goals.

1. Impact through excellence in imaging
2. Enabling of research strategic to TBRHSC
3. Economic growth and sustainability

Our success in imaging is a reflection of the outstanding scientists, students, and staff at TBRI. Founding Scientific Director, Dr. John Rowlands, who retired this year, is credited with recruiting the first group of scientists and leading a multi-institutional project that was awarded \$6 million from the Ministry of Research and Innovation in 2010. We are pleased that John remains engaged as the Founding Scientist. At the beginning of the year, Dr. Jane Lawrence-Dewar arrived in Thunder Bay, and thanks to support from sources including the Province of Ontario and the Thunder Bay Regional Health Sciences Foundation, she has established a laboratory to investigate neural circuitry following stroke. And at the end of the year, we were delighted to welcome a highly accomplished scientist, Dr. Boguslaw Tomanek, who brings a promising research program in molecular imaging to TBRI.

By all accounts, this was an outstanding year for peer-reviewed publications by our scientists and research grants from the government, industry, and foundations, with new awards well in excess of \$4 million. Of note is a \$1.6 million grant from the National Sciences and Engineering Research Council to Dr. Alla Reznik and team to develop a training program in medical imaging. This will provide a nurturing academic environment for our graduate students and position TBRI well for continued success.

Our new Strategic Plan signals that TBRI is the research arm of the Thunder Bay Regional Health Sciences Centre and to this end we helped TBRHSC climb higher on the Research Infosource Canada's Top 40 Research Hospitals list. Moreover, we have experienced a breakout year for clinical research and clinical trials. The team deserves enormous credit for broadening the scope of clinical trials across TBRHSC, increasing the number of trials available to participants, and encouraging the involvement of more physicians and hospital staff. In fact, more than 30 Physician Researchers joined TBRI this year.

In terms of economic growth, we were deeply honoured to receive the 2012 Not-for-Profit Excellence Award from the Thunder Bay Chamber of Commerce. And it was gratifying to watch our spin-off company, XLV Diagnostics Inc. receive financing from the federal government to advance its unique detector technology for digital mammography.

I am so proud of the team at TBRI and congratulate them on their efforts and the accomplishments that you will see highlighted throughout this report.

Sincerely,

Michael Wood, PhD

Chief Executive Officer, TBRI

Vice President Research,
Thunder Bay Regional Health Sciences Centre

TBRI Scientists

John Rowlands, Ph.D.
Founding Scientist and
Professor, University
of Toronto

Development of
x-ray detectors, from
basic science to
commercialization in
TBRI spin-off XLV
Diagnostics Inc.

Laura Curiel, Ph.D.
Adjunct Professor,
Lakehead University

Clinical trials and
development of guidance
technology for non-
invasive treatment of
uterine fibroids, cervical
cancer, and prostate
cancer with high intensity
focused ultrasound (HIFU)

Samuel Pichardo, Ph.D.
Adjunct Professor,
Lakehead University

Development and
application of HIFU for
drug delivery
in cervical cancer

Alla Reznik, Ph.D.
Canada Research Chair
and Assistant Professor,
Lakehead University

New materials, notably
lead oxide and amorphous
selenium, for x-ray and
PET detectors in
medical imaging

Oleg Rubel, Ph.D.
Adjunct Professor,
Lakehead University

Investigation of material
properties of selenium and
development of
new piezoelectric
material for HIFU

Ingeborg Zehbe, Ph.D.
Associate Professor,
Northern Ontario School
of Medicine

Screening for Human
Papillomavirus infection
as biomarker for cervical
cancer in aboriginal
populations

Christopher Phenix, Ph.D.
Adjunct Professor,
Lakehead University

Probes to image
enzymatic biomarker
activity and molecular
imaging to investigate
Herceptin resistance

Wely Floriano, Ph.D.
Associate Professor,
Lakehead University,
Biorefining Research Chair,
SHARCNET/TBRI

"In-silico" approach to
probe discovery

Mitchell Albert, Ph.D.
LU-TBRI Research
Chair and Professor,
Lakehead University

Development of xenon MRI
biosensor for diagnosis
and treatment guidance
for HER2-positive breast
cancer and hyperpolarized
129Xe MRI brain imaging
for stroke, and pulmonary
imaging for asthma, COPD,
and cystic fibrosis

Lily Wu, Ph.D.
Professor, Lakehead
University

Effectiveness of SMG-08 in
treatment of hypertension
and development of
labelled methylglyoxal
molecule as biomarker
of diabetes

**Jane Lawrence-Dewar,
Ph.D.**
Adjunct Professor,
Lakehead University

Use of MRI to understand
changes in neural networks
following injury or disease

Goal 1: Impact through Excellence in Imaging



From the outset, Scientific Excellence has guided all of the scientific endeavours at TBRRI. This requirement of excellence is reflected in the recruitment of scientists and other personnel at TBRRI. It is evident also in the guiding principle that the path taken by TBRRI should reflect the strategic direction of TBRHSC while allowing TBRRI to remain focused and become internationally respected. The notion that TBRRI can best serve TBRHSC by ensuring that research meets the highest peer-reviewed standards is a manifestation of the all-important guiding principle of Scientific Excellence.

1. Focus on detectors, specialized MRI technology, molecular probes, and imaging guidance.
2. Recruit and develop a critical mass of internationally excellent scientists and trainees.
3. Facilitate collaborations to increase success in scientific discovery, leading to first-in-patient trials and ultimately widespread distribution.

Recruitment of 14 Scientists

70,000 sq. ft of space

\$14 million in
research funding

79 peer-reviewed publications

Research with Philips, Anrad, and
other companies

50+ students and trainees

Making Connections

Dr. Jane Lawrence-Dewar and Her Research Represents a New Branch for TBRRI's Medical Imaging Focus

When Dr. Jane Lawrence-Dewar joined the Thunder Bay Regional Research Institute in April 2012, her work brought a whole new imaging method to TBRRI: functional Magnetic Resonance Imaging or fMRI.

fMRI helps map brain activity by measuring oxygen levels in specific regions of the brain over time. Using this method, Dr. Lawrence-Dewar is investigating how the brain "rewires" itself after a stroke, reorganizing function to regain lost motor ability. Ultimately her goal is to optimize rehabilitation methods and develop new tools to improve recovery of hand function for better patient outcomes.

"fMRI is becoming a standard technique now for mapping the brain," Dr. Lawrence-Dewar said. "One of the most interesting developments with fMRI is that we are able to examine connectivity – how areas of the brain may interact – rather than just measuring what 'lights up' during a task. That allows us to look at the neural pathways as a whole to see how those networks are disrupted following injury and what new networks lead to improved hand function following rehabilitation."

This baseline research may be a stepping stone for other scientists investigating different neural injuries and diseases such as traumatic brain injury and Alzheimer's. Mental health, an area that has tended to be a mystery from a biological standpoint, could also benefit from this research. For example, fMRI could help psychologists understand why exercise can reduce the

symptoms of depression. fMRI could also theoretically be used in the future to help find the right medications and dosages for patients based on hard data rather than by relatively subjective patient feedback.

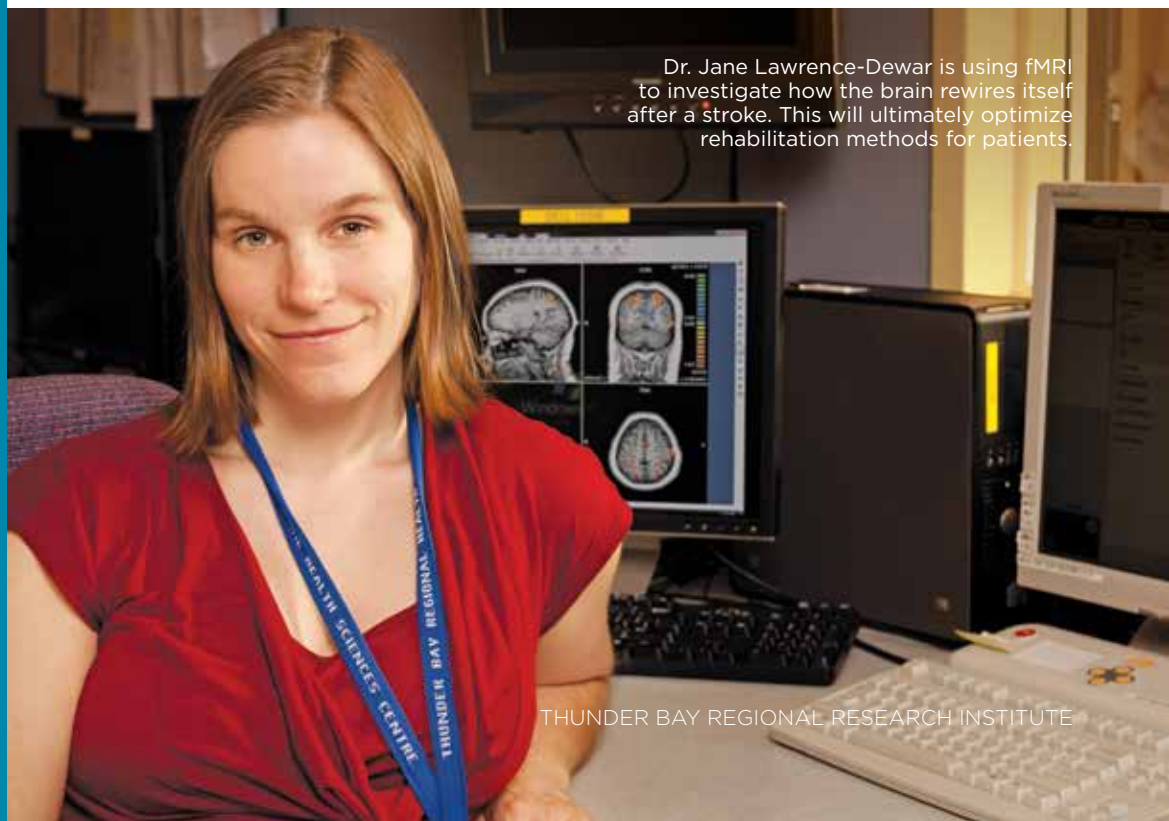
fMRI at TBRRI also opens up possibilities for joint research projects using this technology.

"This allows us to participate in provincial, national, and international collaborations," Dr. Lawrence-Dewar said. "fMRI has so many different applications – anything with the brain or the spinal cord, we can do it."

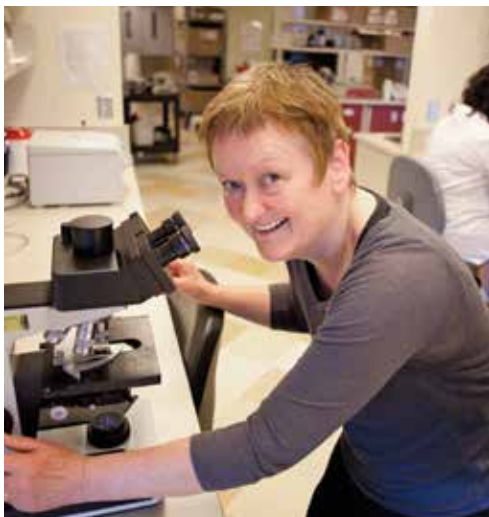
In fact, Dr. Lawrence-Dewar is one of the few researchers who have done spinal cord fMRI. She trained with Dr. Patrick Stroman, now at Queen's University and the pioneer of the field. This allows her to take a network approach with other scientists investigating what's happening in the brain and the spinal cord after stroke.

But it's the research partnerships here in Thunder Bay, Dr. Lawrence-Dewar said, that helped her choose to come here in the first place.

"Because my research is patient-focused, the partnership between TBRRI and Thunder Bay Regional Health Sciences Centre was very important to me," she said, adding that their close ties with Lakehead University, where she is an adjunct professor, is a great asset. "With these facilities and the relationships between physicians and clinician scientists and educators, it seemed like a great environment to conduct my research."



Key Accomplishments



Our pursuit of excellence in medical imaging is advancing steadily through contributions to peer-reviewed scientific literature, extramural research grants, and opportunities to train future scientists. Particularly notable was a prestigious Canadian Institutes of Health Research operating grant awarded to scientist Dr. Ingeborg Zehbe, an all-important first for TBRRI.



Construction has begun on a health services building, which is the future home to the cyclotron. Thanks to generous support from the Government of Canada, Province of Ontario, City of Thunder Bay and Thunder Bay Regional Health Sciences Foundation, we will be producing much-needed isotopes for advanced research and diagnostic imaging procedures for patients in Northwestern Ontario and beyond.



This year we recruited scientist Dr. Boguslaw Tomanek, who joins us from the former National Research Council Institute of Biodiagnostics in Winnipeg and Calgary. Our advanced technology in MRI, PET imaging, and soon, the cyclotron, will enable him to build a research team focused on molecular imaging.



Out of a total of 204 applications and only 37 Canadian Cancer Society Innovation grants awarded, Dr. Chris Phenix and his TBRRI collaborators have obtained funds to work on imaging probes for early detection of aggressive cancer.



Thanks to the Canada Foundation for Innovation (CFI), the Province of Ontario, and the Thunder Bay Regional Health Sciences Foundation, specialized equipment that enables hyperpolarized gas MRI is now installed in Thunder Bay and being used by Dr. Mitchell Albert and his team in the investigation of chronic lung disease. Lakehead University was instrumental in assisting with the CFI application.

Goal 2: Enabling of Research Strategic to TBRHSC



From the outset, it was understood that TBRRI was being created to fulfill the research mandate of TBRHSC. TBRHSC is a new academic health sciences centre (AHSC), enabling patient-centred research, such as clinical trials and health services research projects. There are many opportunities to enable research at TBRHSC, beginning with clinical trials and health services research projects, either designed within TBRHSC or by our many partners. Already, the stature of TBRHSC as an AHSC is acknowledged through membership in the Council of Academic Hospitals of Ontario (CAHO) and recognition by Research InfoSource as one of the Top 40 Research Hospitals in Canada.

1. Facilitate clinical research through an accessible, well-managed, and sustainable infrastructure.
2. Encourage emergence of research champions to grow culture of research.
3. Enable clinical trials and clinical research in TBRHSC priority areas (Chronic Disease Prevention and Management, Comprehensive Clinical Services, Aboriginal Health, and Mental Health and Addictions).

One of 5 sites for OICR High Impact Clinical Trials

Site for Philips MR-HIFU trial for uterine fibroids

550+ patients in 60 clinical trials

TBRHSC on Research Infosource list of Top 40 Research Hospitals

Clinical Trials

Improving Patient Care Tomorrow and Today

Most people understand how clinical trials help future patients. But few realize how much a clinical trial can improve their own healthcare, right now.

Susan Fischer knows firsthand. After being diagnosed with a particularly aggressive form of breast cancer in September 2011, she underwent an equally aggressive treatment involving surgery, radiation therapy, and chemotherapy. As it turned out, she was also the perfect candidate for not one but two clinical trials, including one that attacks cancer cells by essentially starving them of sugar. Fischer isn't sure the treatment itself will work – she may even be in the placebo group. But that's beside the point, she said. "You get outstanding care in our cancer centre – I can't say enough good about our cancer centre," Fischer said. "But I got even better care, having been in clinical trials."

She singled out Lisa Miedema in particular, a Clinical Research Coordinator at TBRRI who follows Fischer through her cancer treatment. Fischer said it was clear that Miedema cared about her as a patient, and wasn't there just to collect scientific data. "I never for a second felt like a guinea pig. Lisa was my best cheerleader. She's made my journey a little bit easier," Fischer said.

Sandra Stoger, who is the Director of Clinical Research at TBRRI, said that type of relationship is common. Not only do patients have more assessments and another set of healthcare professionals tracking their progress, but they also have another contact if they have questions about their treatment. "It's that advocacy role that we play as researchers that patients appreciate the most," Stoger said. She added that for TBRRI and TBRHSC in general, research is one of the cornerstones of an academic health sciences centre. They also bring many economic benefits, which is incredibly important for a research institute and can help the community prosper.

In March 2013, Fischer became the first Patient and Family Advisor (PFA) for clinical trials, providing that important patient perspective to the program. "I'm hoping that by becoming a PFA for clinical trials, I'll be giving back a little bit," Fischer said. One of the things she said she would like to help with is to get the word out about the benefits of clinical trials to patients and to other programs at TBRHSC. "If I happen to be one of the patients to get the drug and it works, then great for me. If I don't, at least I'll be helping to bring that study along and maybe benefit someone in the future. So it's win-win, as far as I'm concerned."

Lisa Miedema, Clinical Research Coordinator, with Susan Fischer, who in March 2013, became the first Patient and Family Advisor (PFA) for clinical trials, providing that all-important patient perspective to the program.



Key Accomplishments



Already 32 physicians in Thunder Bay have become Physician Researchers, including Dr. Christopher Lai, Medical Director, Translational Research at TBRHSC.



Dr. Ingeborg Zehbe's research team aims to develop culturally safe approaches to promote cervical cancer screening and ultimately lead to a decline in high-grade cervical lesions and cancer among First Nations women. Seen here are the Community-Based Research Assistants from each of the 10 First Nations communities participating in the study.



Clinical trials at TBRHSC are undergoing tremendous growth, as reflected in the number of participants, the number of trials, and the expanding range of conditions under investigation. The tools and processes and the team of people to support clinical trials are developing steadily. Here are some of the members of the Clinical Research team.



Our patients participate and benefit from unique clinical trials that will define the future of cancer care. We are a very active center recruiting to the Genomics Pathway Strategy, a major personalized medicine initiative that will change the way cancer treatment is delivered in the future.

Goal 3: Economic Growth and Sustain- ability



TBRRI is contributing to the development of a knowledge-based economy in Thunder Bay, most notably in the health and education sectors. Northwestern Ontario is well-positioned to emerge as a destination of choice for knowledge-based industries and brilliant minds. It is important that the region build on the innovation base that harnesses intellectual capacity and leverages strengths to capitalize on new and thriving industries. Indeed, the emerging knowledge-based economy offers enormous benefits to Thunder Bay. Initiatives such as TBRRI are arguably indispensable to the continued economic viability and region.

1. Create research and business jobs in Northwestern Ontario.
2. Develop clinical trials, cyclotron, and other business ventures to reinvest in research.
3. Partner with Thunder Bay Regional Health Sciences Foundation in research fundraising.
4. Create value from intellectual property through spin-off companies and licenses.

100+ jobs in research created

50+ students and trainees

Tornado Medical Systems,
XLV Diagnostics

7 patents awarded and 1st non-Toronto
MaRS Innovation member

Cancer Care Ontario Innovation Award,
RBC Innovation Award, Thunder Bay
Chamber Business Excellence Award

Minding the Gap

\$1.65 Million NSERC Grant Leads to New Training Model in Medical Imaging

The TBRRI and its partners are working on a university program that will provide practical training in technology invention, development, and entrepreneurship - the type of skills that industry requires to build the next generation of imaging equipment for patient care.

In 2012, a group of TBRRI scientists and Lakehead University professors including project lead Dr. Alla Reznik received a \$1.65 million grant from the Natural Sciences and Engineering Research Council (NSERC) through its Collaborative Research and Training Experience (CREATE) program. The prestigious award will fund a six-year project to develop an interdisciplinary training program at Lakehead for post-doctoral fellows, doctorate, and master's degree students, including those from the University of Waterloo and the University of Saskatchewan through partnership. The project will also feature an annual Summer School on Medical Imaging for undergraduates to expose them to the medical imaging field.

Patient need is helping to inform course work. "We are asking physicians and industry what they need, so we can provide our students with the skills and expertise required to create new technology that will help patients," said Dr. Reznik. In theory, this approach will help get new technology into the hands of clinicians faster.

The concentration of expertise in imaging detector materials at TBRRI and Lakehead University is key to the project's success. "This really speaks to our strengths, and will help us create a strong niche area of research for TBRRI," Dr. Reznik said. What will make this training project unique is its strong focus on translational research and

commercialization. The goal is to attract students from several disciplines - physics, chemistry, electrical engineering, and related fields - and make them "employer ready" with the knowledge and skills to work in the medical detector industry. Project leaders will collaborate with eight industry partners to determine their needs, and develop a curriculum that will include internships and on-the-job training. Courses will focus on teaching students how to develop novel detector material and advanced techniques for diagnostic imaging and image-guided procedures.

The benefits are clear: businesses will get the trained employees they need, students can establish a career path with solid employment prospects after school, and TBRRI and Lakehead University will have a niche program that should attract more students to Thunder Bay - and in turn perhaps future scientists and professors. It may help create more economic development for Thunder Bay as well. New discoveries here could become spin-off companies much as Dr. John Rowland's XLV Diagnostics did in 2011; one of Dr. Reznik's own students is also in the process of launching a medical imaging company.

Currently, there are four courses already confirmed for 2013-2014 academic year, and two more that are near completion. If all goes well, these and future courses could become the basis of a new speciality program at Lakehead University in medical imaging detector technologies.

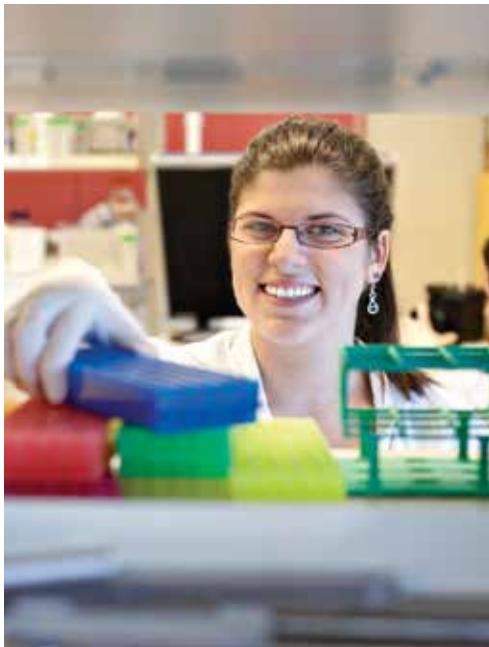
"In order to be ready for jobs, our students have to be exposed to approaches that industry uses. This will help them become more employer-ready," Dr. Reznik said.

"We are asking physicians and industry what they need, so we can provide our students with the skills and expertise required to create new technology that will help patients," said Dr. Reznik.

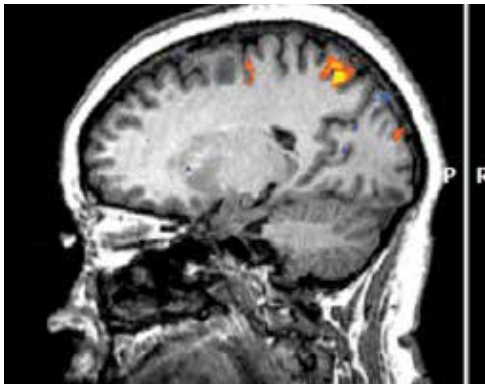


THUNDER BAY REGIONAL RESEARCH INSTITUTE

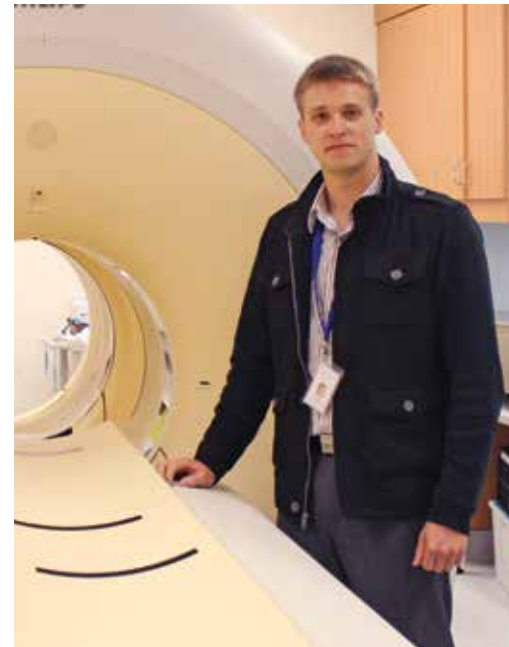
Key Accomplishments



With TBRI as their research arm, TBRHSC is maturing into a leading academic health sciences centre. For the second straight year, TBRHSC was named one of Canada's Top 40 research hospitals by Research InfoSource and moreover, moved up 3 spots.



The Province of Ontario awarded a \$1 million grant in support of TBRI's Next Generation MRI/fMRI Project. The project includes a new state-of-the-art 1.5 Tesla MRI facility at the TBRHSC. A grant from the Thunder Bay Regional Health Sciences Foundation will also contribute to this project. Along with bringing benefits to patients, this new equipment will allow TBRI Scientist Dr. Jane Lawrence-Dewar to carry out research to understand the disruption and reorganization of neural networks in the brain and spinal cord following stroke and the recovery of motor control during rehabilitation.



The Ontario Brain Institute selected Oleksander Bubon of TBRI for one of only seven Entrepreneurs Awards. This award is allowing him to advance towards the commercialization of a device for PET imaging.



Training the next generation is steadily expanding. For three consecutive summers TBRI has participated in the exclusive Shad Valley program, exposing gifted high school students to a potential career in research. The TBRI Summer School on Medical Imaging is also becoming a valuable tradition. The development of a medical imaging program has received a significant stimulus from the National Science and Engineering Research Council (NSERC), which awarded \$1.6 million to Dr. Alla Reznik and her team of collaborators. This support is reinforced by the arrival of more outstanding graduate students, some of whom hold National Studentship Awards.

Health Sciences Discovery Fund: Donors invested \$1.9 million in TBRRI

Since 2009, donors from across Northwestern Ontario have generously provided support to local research and, to-date, \$1.9 million has been invested in the Thunder Bay Regional Research Institute. Ongoing funding is critical to scientists, who require specialized equipment and laboratory facilities to further their research.

Research can sometimes seem a mysterious venture. Often the complexity of projects can overwhelm those who try to understand them.

But for the many donors who support the Thunder Bay Regional Research Institute through the Health Sciences Discovery Fund, they see clearly how research is impacting patient care right here in Northwestern Ontario, and, in fact, around the world.

Thunder Bay Regional Research Institute puts the patient at the heart of research. Its scientists are highly focused on novel molecular imaging-based technologies for disease prevention, early detection and image-guided treatment. They begin each and every project with the patient in mind, asking themselves, 'how can I make patient care better?'

They include scientists like Dr. Laura Curiel and her team, who are leading research on the use of High Intensity Focused Ultrasound to remove uterine fibroids. The ultrasound gives the ability to remove a fibroid without making any incision in the skin. This procedure is much less invasive than a hysterectomy and allows women to recover sooner. Just imagine how this might be used in the future to remove tumours without needing surgery.

There are, of course, many more projects underway, thanks to the generous support of donors.

As many of TBRRI scientists will agree, there is a great sense of pride in the research happening here in Thunder Bay.

“Research is the embodiment of hope. For people who have no current treatment options left, we are giving new hope by finding new ways to diagnose and treat disease.”

Dr. Laura Curiel, Scientist, TBRRI



Funders and Partners

COLLABORATION FOR SUCCESS

TBRRI works hand-in-hand with crucial key partners including corporate member organizations, academic, healthcare, industry and research partners. Together we bring discovery to life and move molecular imaging and advanced diagnostic care forward. Bringing new advances to patients is our mutual mission.



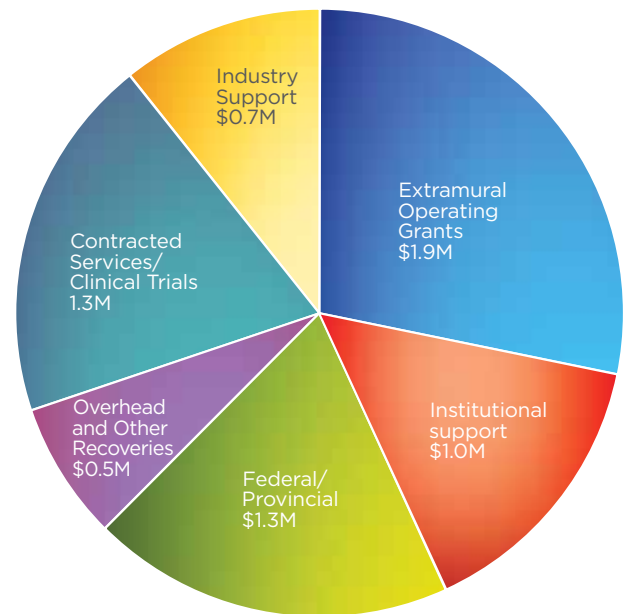
Grants Awarded in 2012

PRINCIPAL INVESTIGATOR	GRANT	TITLE	AMOUNT (\$)	TERM
Mitchell Albert	CFI-Leaders Opportunity Fund	Hyperpolarized Gas MRI for Collaborative Studies on Asthma	248,256	1 year
Ingeborg Zhebe	NSERC-Discovery	RNA Interfering Nanoparticles against Human Papillomavirus Variants	30,000	1 year
Lily Wu	NSERC-Discovery	MicroRNA regulated methylglyoxal metabolism in vascular endothelial cells	30,000	1 year
Sam Pichardo	NSERC-Discovery	Software Development Program for the Fast Prototyping of Applications of Focused Ultrasound Guided by Magnetic Resonance Imaging	105,000	5 years
Alla Reznik	NSERC-Regional Opportunities Fund	Innovations in Radiation Medical Imaging Detectors	5,000	1 year
Alla Reznik	Canadian Breast Cancer Fund	Solid State Technology for New Generation of Positron Emission Mammography (PEM) Device	450,000	3 years
Alla Reznik	NSERC / CIHR CHRP	Practical implementation of real-time low-dose x-ray imaging	498,000	3 years
Alla Reznik	NSERC CREATE	NSERC CREATE in Medical Imaging Detector Technologies	1,647,075	6 years
Chris Phenix	Canadian Cancer Society Research and Innovation	Activatable Probes for Imaging protease activity in the Tumour and Tumour Environment: A Potential Method for the Early Detection of Aggressive Cancer	190,498	2 years
TOTAL			3,203,829	

Financial Statements

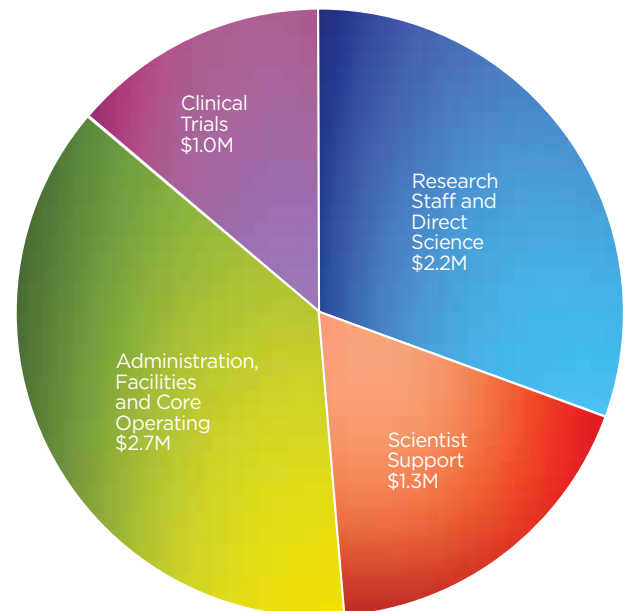
Revenue Sources

Total = \$6.7M



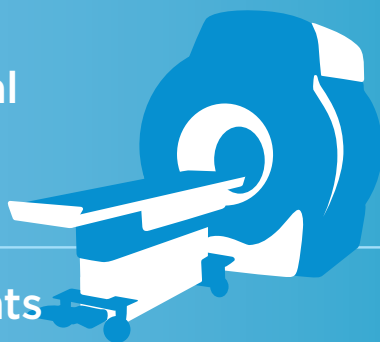
Funding Uses

Total = \$7.2M



TBRRI by the numbers 2012-2013

268 Preclinical
MRI
Scans



Scientific research grants

\$3,203,829

18
Presentations
at Conferences

1 of 5

Ontario Institute
for Cancer
Research

High Impact
Clinical Trials Sites



100

Research-Related

JOBS

Since 2007

25
Publications



THE
ONLY

research
institute outside
of the Greater
Toronto Area
to become a
member of
MaRS Innovation



\$100M

in economic development for
Northwestern Ontario since 2007

57

Students
have had the
opportunity to
work with Scientists



26

University
Courses
offered
since 2007



Climbed three spots in Canada's



TOP 40

Research Hospitals

130

Outreach
Activities