

2013 - 2014 Thunder Bay Regional Health Sciences Centre
Report to the Community and a Year in Review

healthy together



Sharing
Culturally
Based
Teachings

Hitting the
Road to
Improve Cancer
Screening Rates

Investing in
Tomorrow's
Healthcare
Providers Today

Smoother
Transitions for
Patients Living
with Mental Illness

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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.

Introduction to Strategic Plan Status Updates

The goals and activities set out in our Strategic Plan 2015 are the result of engaging community members, health managers, policy makers, health professionals and academic institutions about how to achieve our vision: healthy together. It also took into consideration the environment and health status of the residents of Northwestern Ontario and a review of our past successes.

Through the combined energy and efforts of management, employees, professional staff, volunteers, Patient Family Advisors, learners and donors, we are now nearing 80% completion of our ambitious Plan, one built on Patient and Family Centred Care that respects and responds to patient and family preferences, needs and values,

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 TBRHSC's research arm, 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 approximately \$128 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.

and ensures that patient values guide all clinical decisions.

The goals we set out to achieve have been guided by four strategic directions: Aboriginal Health; Chronic Disease Prevention and Management; Comprehensive Clinical Services; and Mental Health and Addictions, each with its own set of objectives and desired outcomes.

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.

Message from the Co-Chair, Patient and Family Advisory Council



As we roll into 2014, there are some things that will stand out for me. I think we will all

remember the weather being the chronic lead-in to every conversation.

Those of us at the Thunder Bay Regional Health Sciences Centre (TBRHSC) have reason to celebrate this year. It is our hospital's 10th anniversary in our current facility. Although I have been hanging my hat there about half that time, it feels like just yesterday when we introduced Patient and Family Centred Care as the model of care. I have always had a sense of pride for our hospital, not just because of its beautiful, award-winning design, but now that I have had the privilege of working with staff and volunteers, they are equally as impressive as the high-tech facility. As we know, it's what's inside that counts.

Anniversaries are an opportunity to reflect both back in time and ahead to the

future. We are also on the home stretch of our current strategic plan. This will give us an opportunity to assess the direction we need to head in to make sure that we are meeting the needs of our patients. Our Patient and Family Advisory Council is still one hundred strong and comprises a diverse and dedicated group of patients. Our Patient and Family advisors are involved in every area of the hospital and do their best to represent the needs of all the patients.

We are still the only hospital to hold the Leading Practice in Patient Family Centred Care, awarded by Accreditation Canada. I feel good knowing that we are leaders in the way we involve patients in all aspects of hospital business. I am looking forward to not only the celebrations this year but the challenges and opportunities that are ahead.

Happy anniversary to staff and volunteers, and let's be healthy together.

Keith Taylor

Co-Chair, Patient and Family Advisory Council

Patient Family Advisory Council Members

Barb Agostino	Kayla Kjellman
Dawn Aho	Jacqui Ktytor
Arlene Ahtila	Roberta Lane
Brenda Allard	Matthew Lesnick
Alexis Anderson	Ingrid Lingman
Wayne Anderson	Laura Macgowan
Trisha Bingham	Norm McDougall
Irene Bond	Alastair McKenzie
Marga Bond	Orpah McKenzie
Leo Brace	Clarke McKercher
Donna Brown	Brad McKinnon
Carol Ann Brumpton	Jan Miller
Rob Cameron	Diana Miller Harquail
Sherri Capulak - Tinnes	Irene Milne
Paul Carr	Joe Minelli
Brad Carruthers	Kim Montanaro
Linda Cavezza	Janet Morgan
Liisa Clarke	Judy Mostow
Sharon Cole-Paterson	Richard Oullette
Mary Anne Comuzzi	Mary Louise Petersen
Gary Cooper	Gail Pfaff
Janet Cromarty	Robert (Bob) Pfaff
Diane Dixon	Boris Potoyants
Eve Dowson	Lindsey Poulter
Verna Dubray	Dawn Powell
Jeannie Faubert	Debora Prokopich Buzzi
Bob Fenton	Barb Rickards
Connor Ferguson	Roger Rickards
Gary Ferguson	Ian Robertshaw
Susan Fischer	Glenn Rothenburger
Kathy Forbes	Cathy Sawicki
Mary Anne Fossum	Wendy Scott
Betty Franceschetti	Ruth Sisak
Chris Frey	Kathleen Smith
Kelli Gothard McKinnon	Cassandra Spence
Margaret Hajdinjak	Keith Taylor
Rodney Halstead	Bill Tennier
Mona Hardy	Thomas (David) Van Wagoner
Holly Hebert	Denny Verdenik
Marcia Hiiri	Heather Woodbeck
Daroyln Hryciw	Dawnelee Wright
Dave Johnson	Susan Wright
Sandra Josephson	Don Young
Heather Kibzey	

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Ex-Officio

Andrée Robichaud
Ex-Officio

Doug Shanks

Dr. Roger Strasser

Grant Walsh

The Board of Directors gratefully acknowledges the following individuals who served in 2013-2014:

Karen McDaid

Sharon Pitawanakwat

Report from the Chair of the Board of Directors



This year

Thunder Bay Regional Health Sciences Centre (TBRHSC) is celebrating its 10th anniversary.

The successes of the past ten years and those that are certain to come could not be achieved alone. Every day, patients and families benefit from the combined efforts of our community, including dedicated employees, healthcare providers, volunteers, donors and partners. For the role you had in building excellent healthcare in Northwestern Ontario, I thank you.

Accountability is one of the core values that continues to guide our highest standards of care and our patient and family centred care agenda.

TBRHSC is committed to delivering evidence-based care that is focused on quality and patient safety for the people of Northwestern Ontario.

Our Quality Improvement Plan provides score-card evidence on how well TBRHSC is performing on a number of important fronts across all the dimensions of Safety, Effectiveness, Access, Patient & Family Centred Care, and Integrated Care.

For example, reducing Emergency Department wait times has been a key priority and there has been improvement over the last year. We have met and exceeded our target since April 2013.

Our hand hygiene compliance rates, an important contributing factor in low infection rates, have also improved significantly. The first initial rates collected in 2009 placed our organization at an overall compliance rate of 33%. Today, we are happy to report that our overall compliance rate is 96%.

However, TBRHSC's commitment to quality and to quality improvement goes beyond the numbers on a chart. We are recognized nationally as a leader in our commitment to the principles of patient and family centred care.

We begin all Board of Directors', Senior Management and all Council meetings with real stories of patient care. These stories reflect both our high standards of quality care as well as stories from which we can learn to improve the care we provide.

We now have approximately 100 Patient and Family Advisors including a Patient Family Advisor Council. This group is active not only within TBRHSC, but also works with Accreditation Canada and the Ontario Hospital Association.

Coordinated improvement plans and efforts provide our community with the assurance that we will deliver on our mission: To advance world-class Patient and Family Centred Care in an academic, research-based, acute care environment.



Susan Fraser

Chair of the Board,
Thunder Bay Regional Health Sciences Centre

Report from the President & CEO



This year we celebrate ten years of advancing world-class patient and family centred care. We recognized then and we

continue to recognize the need to collaborate and partner with other care providers in order to continually improve efficiencies, access to care and overall quality. Nothing can truly be accomplished in isolation, as we are a regional facility and virtually everything we do has an impact on our partners.

Our goal is to ensure the right patient is receiving the right care, by the right professional in the right setting, and the overcapacity issue challenges our ability to provide care.

This challenge is directly related to activity and capacity in the community and the region.

I am pleased to report that an approach has been established through much work with our partners including earlier transfer back to the region, increased patients waiting at home for placement, increased capacity in the community sector and retention of long term care capacity once the Centre for Excellence opens.

Also, the Ministry of Health and Long-Term Care announced a \$14 million dollar funding allocation

on March 14, 2014. This funding will be allocated to the Northwest Community Care Access Centre (NWCCAC), St. Joseph's Care Group (SJCG), The City of Thunder Bay, and Thunder Bay Regional Health Sciences Centre for both short-term and long-term solutions to the overcapacity challenge. This funding allocation will alleviate some of the overcapacity pressures at TBRHSC. We could not have reached this complex solution without the collaboration of our partners.

Continued engagement with Policy Makers, Health Professionals, Academic Institutions, Health Managers and community representatives is an important part of our commitment to engagement, transparency and accountability.

Last but certainly not least, we value the partnerships with our patients and families, through the ongoing feedback they provide and through those who choose to become Patient and Family Advisors (PFAs).

In spite of our challenges we continue to be recognized for providing high-quality patient and family centred care.

I am grateful to all of our partners for their ongoing interest and input. We are healthy together.

Andrée G. Robichaud

President and CEO,
Thunder Bay Regional Health Sciences Centre

Senior Management Council

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President & CEO

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Chief of Staff

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Carolyn Freitag
Director, Strategy Management and Performance Planning

Janet Northan
Director, Government Relations

Keith Taylor
Patient Family Advisor

Margaret Hajdinjak
Patient Family Advisor

Senior Management gratefully acknowledges the following individuals who served in acting positions in 2013-2014:

Eila MacLean
Chief Financial Officer

Anne Marie Heron
Executive Director, Capital Planning and Operations

Thunder Bay Regional Health Sciences Centre gratefully acknowledges the following individuals who also served on the Senior Management Council in 2013-2014:

Lori Marshall
Executive Vice President, Strategy, Performance and Aboriginal Health

Dr. Michael Wood
Vice President, Research and CEO, TBRI

Scott Potts
Executive Vice President, Corporate and Diagnostic Services

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.



Sheila White, an Anishinaabe Language and Culture Secondary School Teacher, volunteered to provide a series of cultural lessons to TBRHSC staff and volunteers.

Sharing Culturally Based Teachings

Sheila White believes that understanding First Nations peoples' worldview and history are important, particularly in healthcare, where cultural and linguistic misunderstandings have the potential to negatively impact an individual's health outcomes.

To better address the needs of Aboriginal patients and families, Thunder Bay Regional Health Sciences Centre (TBRHSC) is working to develop cultural sensitivity and awareness among staff and volunteers.

TBRHSC hosts various elders and traditional teachers from the community to offer staff and volunteers opportunities to learn about Aboriginal culture. Most recently, Sheila White, an Anishinaabe Language and Culture Secondary School Teacher, volunteered to provide a series of cultural lessons during the lunch hour. Employees took advantage of the opportunities to learn about a variety of topics,

from traditional fall and winter activities, such as storytelling, and basic vocabulary in Ojibwe and Oji-Cree, the two main languages spoken in this region.

Fortunately, White's own experience with the healthcare system was positive. After her daughter was involved in a serious accident, she was placed in the Intensive Care Unit (ICU) at TBRHSC. It was important to White and her family members to be with her. "They allowed our family to have a ceremony with her in the room," says White.

"It's because of the compassionate and exceptional care my daughter received here that I wanted to volunteer to provide these teachings."

Lisa Laitinen-Egbuchulam, Spiritual Care Specialist at TBRHSC, attended the lunch-hour sessions and also completed all of the available online learning modules for staff regarding Aboriginal culture. She says sensitivity to a person's background and culture is especially important with Spiritual Care. "Anything I can learn that

can add to my understanding of Aboriginal worldviews is helpful to me in my work."

"My empathy has grown. I've learned the importance of just sitting with the Aboriginal patients I see in spiritual care and that I don't need to fill in the gaps when there is silence."

Greater understanding and empathy has also been the experience of Sara-Jae Sadler from Switchboard Services. "At Switchboard, we screen calls for patients in ICU and I used to wonder why so many people were calling for one person. Now I understand that for many Aboriginal people, extended family members are considered immediate family."

Sadler says she is grateful for these learning opportunities, offered on-site and at no cost, that help her in both her personal growth and her work. "Cultural sensitivity is all about patient care. It doesn't matter what role you play at the hospital, we all contribute to patient care."

Foundation Support

To close language gaps, the Health Sciences Centre's patient consent form is being translated to Oji-Cree, Cree and Ojibway. Aboriginal patients who do not speak or understand English will now have a form in their language so they clearly understand what treatment or tests they are being asked to consent to, without requiring the services of a translator. The translation is thanks to a Volunteer Association/Thunder Bay Regional Health Sciences Foundation Family CARE Grant, which also funded Aboriginal storybooks, puzzles and games for Aboriginal and Métis paediatric patients and their families to help create a more welcoming environment for them.

Research Initiative

In January 2014, the Thunder Bay Regional Research Institute officially welcomed their newest Clinician Researcher, Dr. Naana Jumah.

Dr. Jumah joins TBRI as a Clinician Researcher, with a focus on Aboriginal and women's health. She also joined Thunder Bay Regional Health Sciences Centre as an Obstetrician-Gynaecologists.

As a Clinician Researcher with TBRI, Dr. Jumah works collaboratively with TBRI Scientists on various projects in her areas of interest including Aboriginal women's health, substance use in pregnancy and cervical cancer screening. As the research arm of TBRHSC, TBRI is contributing to the hospital's strategic plan, which includes a focus on Aboriginal health.



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.



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.



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.

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.



“To be culturally competent doesn't mean you are an authority in the values and beliefs of every culture. What it means is that you hold a deep respect for cultural differences and are eager to learn, and willing to accept that there are many ways of viewing the world.”

- Okokon Udo

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.

The new Screen for Life Coach is reaching women who have difficulty accessing cancer screening services.



Hitting the Road to Improve Screening Rates

Regional Cancer Care Northwest at Thunder Bay Regional Health Sciences Centre (TBRHSC) is driving access to cancer screening – literally – with the introduction of a new Screen for Life Coach for breast, cervical and colorectal cancer screening.

The new state-of-the-art coach was launched in July of 2013 and has been providing women in Northwestern Ontario with digital mammography for breast cancer screening, Pap testing for cervical cancer screening, and ColonCancerCheck Fecal Occult Blood Test (FOBT) kits to screen for colorectal cancer. All three of these cancer screening services are part of provincial organized screening programs through Cancer Care Ontario.

Supported by Cancer Care Ontario and TBRHSC's Regional Cancer Care Northwest, the coach offers much

needed cancer screening closer to home for women who face barriers to screening, travelling to 60 locations, including First Nation communities across the Northwest.

The Coach gives women ages 50 and over access to three cancer screening services including digital mammograms that screen for breast cancer; Pap test screening for cervical cancer; and a take-home Fecal Occult Blood Test (or FOBT kit) to screen for colon and rectal cancers.

“The Screen for Life Coach bridges vast distances in Northwestern Ontario. It offers care closer to home, providing vital cancer screening services in your neighbourhood and we are very happy to support this new initiative,” says Andrée Robichaud, President and CEO of TBRHSC.

“A main goal of the new Screen for

Life Coach is to reach women who have difficulty accessing cancer screening services. We know cancer screening saves lives, and this is another tool we are using to ensure more women have the opportunity to participate in cancer screening,” says Dr. Shannon Wesley, Regional Aboriginal Cancer Lead for Regional Cancer Care Northwest.

Clients who have previously visited the old coach have shown their appreciation for the new coach and its services. Mary Anne Fossum, a long-time client of the Ontario Breast Screening Program, says “I’ve been a client for more than 15 years. It was first suggested to me by my doctor that I should start making regular visits for mammograms. Now I’m excited to hear that not only can I get my mammogram done, but I can also get Pap testing and an FOBT kit.”

Foundation Support

The Foundation provided \$56,000 towards two new hemodialysis machines to replace aging units for patients of Renal Services at TBRHSC.

Almost \$56,000 in grants went to hospitals in Terrace Bay, Sioux Lookout, Red Lake, Kenora and Fort Frances for newer IV infusions pumps for chemotherapy delivery, safer and more comfortable treatment chairs, and equipment to safely store and organize chemotherapy supplies.

A \$200,000 grant has enabled the purchase of a second digital mammography unit for the Linda Buchan Centre which is capable of exact and accurate placement of the needle for the tissue sample for breast biopsy. This new unit enhances LBC's ability to provide timely diagnosis and treatment for breast cancer.

Research Initiative

Scientists like Dr. Chris Phenix, Dr. Boguslaw Tomanek, and Dr. Ingeborg Zehbe at Thunder Bay Regional Research Institute are developing future treatment techniques that will help patients right here in Northwestern Ontario. Among the early cancer detection research projects underway are studies into: improving our understanding of metastasis especially related to breast cancer; earlier detection of prostate cancer using MRI and Positron Emission Tomography (PET) scans; and new home screening kits for Aboriginal women, who are at highest risk of cervical cancer. It's important to point out that these research activities to find tomorrow's cures are impacting patient care today too. Thanks to these research activities, we now have a PET scanner and a second MRI unit, both of which are used for patient diagnosis as well as to reduce wait times.



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.



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.



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.



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 TBRI 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.



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.



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.



In September 2013, healthcare learners and staff at TBRHSC presented a mock Code Blue (cardiac arrest) using a simulated patient (Sim Man). Participating departments and units - physicians, residents, ICU Code Blue team, RT, X-ray, Lab, ECG, etc. - were the same as those who would be involved in the event of an actual Code Blue.

Investing in Tomorrow's Healthcare Providers Today

In its Strategic Plan 2015, Thunder Bay Regional Health Sciences Centre (TBRHSC) set out to create and strengthen partnerships with other healthcare and community partners to deliver comprehensive secondary and tertiary services to provide quality, safe, and evidence-based care for the people of Northwestern Ontario. This year, TBRHSC reached a significant milestone in those efforts by collaborating with key healthcare partners to develop a simulation program as a catalyst for interprofessional education.

On January 24, 2014, TBRHSC, along with St. Joseph's Care Group, Confederation College, Lakehead University, Northern Ontario School of Medicine, and Superior North Emergency Medical Services (EMS), signed a "letter of intent" that formalizes a partnership for the advancement of simulation in healthcare education by creating a lab where learners can simulate treating a real patient in the real hospital setting.

The Northwest Centre of Excellence in Health Simulation aims to pool simulation resources and increase training capacity throughout the region.

"As an Academic Health Sciences Centre, we facilitate quality patient care through excellence in teaching and learning," says Dr. Stewart Kennedy, Executive Vice-President, Medical and Academic Affairs.

"This partnership supports the achievement of this by enabling collaboration on the development and delivery of education curriculum, simulation-based research projects and funding opportunities."

The Simulation Lab, located at Confederation College, is available to healthcare learners such as paramedics, nurses, and medical students. The "high-fidelity" simulation lab features a patient room set up like those at the TBRHSC. An interactive, computerized "patient" can be programmed to display various illnesses and symptoms, and even sound

like a real patient.

Better education for future healthcare providers is great news for residents of Northwestern Ontario, says Kelly Meservia-Collins, Acting Director, Academics and Interprofessional Education. "We know that adopting simulation as our model of education is the best method for educating our future healthcare providers on how to collaborate to provide excellent patient care," says Meservia-Collins. "Also, we know that we cannot build a simulation program and provide interprofessional learning opportunities without the input of our partners. That is, both learning and teaching take place in the classroom and in the clinical environment and require learners from different health professions. Creating the partnership helps us to align how we deliver education in these different environments, ensures we are not duplicating services and assists with the identification of gaps in learning."



Foundation Support

Through the generosity of donors, the Thunder Bay Regional Health Sciences Foundation was able to continue its strong support for cardiac care at TBRHSC with \$47,000 in grants for two new pieces of equipment for the Cardiac Cath Lab. Specialized equipment is being purchased to clear away hardened plaque from arteries- a procedure that patients had to have done out of town. Now they can have this procedure done here, at home.

A \$350,000 grant from the Health Sciences Foundation helped fund a replacement and upgrade for all heart monitoring within the Health Sciences Centre. The new system includes Wi-Fi-based monitoring systems, centralized monitoring stations and easier transfer of patient information between departments or units.

Research Initiative

Implantable devices such as stents made of stainless steel without a coating can cause inflammation, allergic reactions and clot formation. However, devices coated with titanium nitride or titanium oxide have shown overall fewer adverse effects.

Dr. Ian Billingsley and his team are conducting a clinical trial for Hexacath, an independent company that develops, produces and distributes innovative vascular therapy products.

It was decided that this study would be a great research opportunity for TBRHSC's Cardiac Catheterization (CC) Lab. Terry Gurney, Manager of the CC Lab, identified research champions within her team to lead this project with the support of the Clinical Trials Department. Currently over 30 participants have been enrolled in this trial.

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.



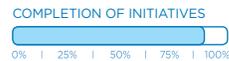
Goal 2 Collaborate to deliver care in the most appropriate setting.

- 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.



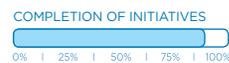
- IV. Collaborate to develop a regional healthcare service plan to enable delivery of the appropriate care in the appropriate setting.

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



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.



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 TBTRI that includes research into Comprehensive Clinical Services.
- II. Develop a process for TBTRI 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 TBTRI 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.



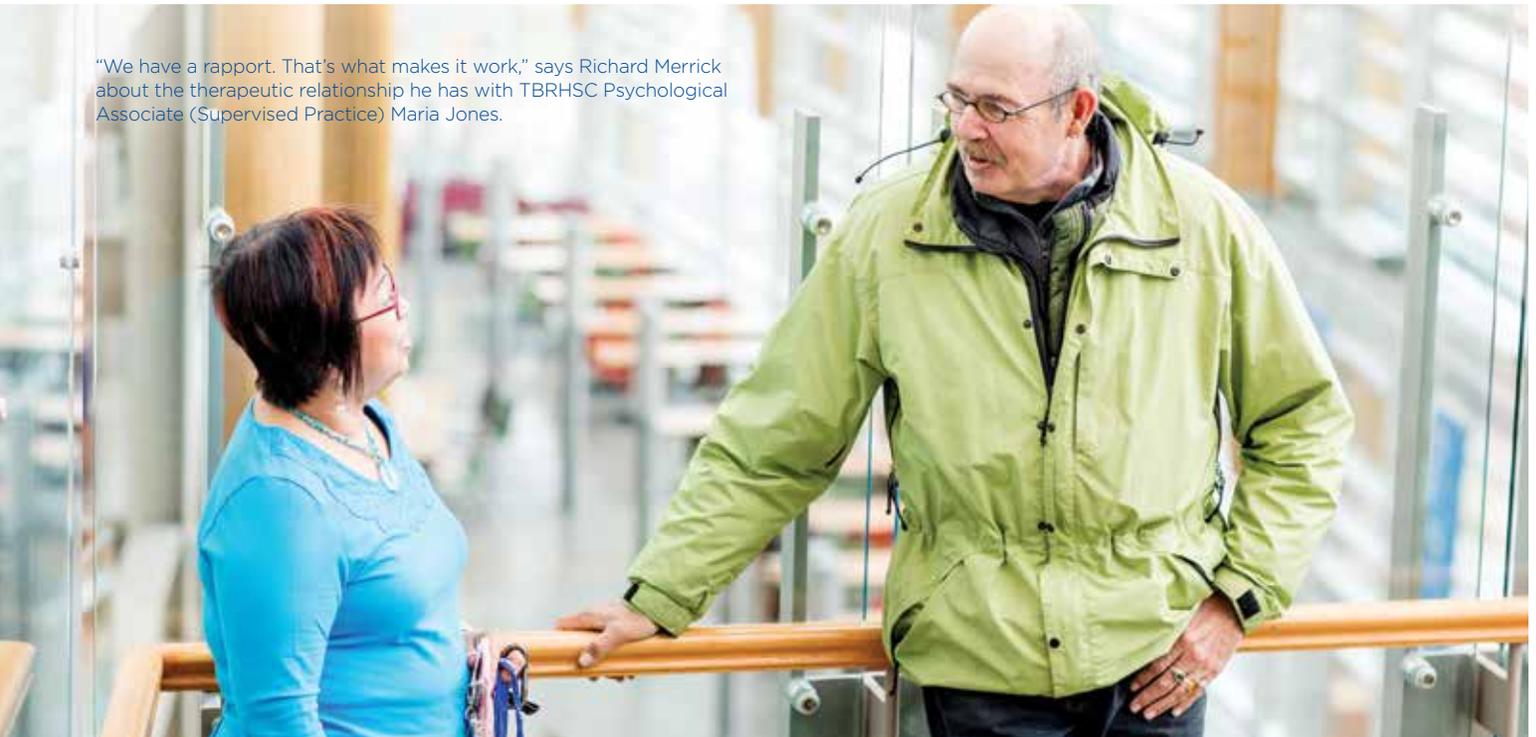
“Advancing world-class care in an academic, research-based, acute care environment creates a strong demand for skills. Partnerships like this one help make ours the teaching hospital of choice for over 1,500 learners, ensuring they receive the training they need to provide excellent patient care.”

- Andrée Robichaud, President and CEO, Thunder Bay Regional Health Sciences Centre.

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.

“We have a rapport. That’s what makes it work,” says Richard Merrick about the therapeutic relationship he has with TBRHSC Psychological Associate (Supervised Practice) Maria Jones.



Smoother Transitions for Patients Living with Mental Illness

Richard Merrick knows how challenging it can be to make the transition from hospital to community, particularly for patients living with mental illness or addictions.

Fortunately for Richard, during his most recent hospital admission to Thunder Bay Regional Health Sciences Centre (TBRHSC), he was connected to Psychological Associate (Supervised Practice) Maria Jones. She became his “bridging person,” establishing a therapeutic relationship with him in hospital and providing support during his discharge and reintegration into the community.

The Council of Academic Hospitals (CAHO) is currently implementing the Transitional Discharge Model (TDM) in nine member hospitals, including TBRHSC. One of the model’s main components is support from hospital staff, who continue to have contact with a discharged client until he or

she has established or re-established a therapeutic relationship with a community mental health provider.

“When patients are on the unit, they have lots of support – social worker, psychiatrist, recreationist, but when they’re discharged there’s a chance they might fall through the cracks,” says Maria, who continues to see Richard on an outpatient basis since he was discharged.

“We have a rapport,” says Richard. “That’s what makes it work.”

The other component of TDM is peer support from a person who has experienced a mental illness and is living successfully in the community. People Advocating for Change through Empowerment (PACE) is a local mental health consumer/survivor organization run for and, by consumers.

“Peer support teaches the consumers how to establish healthy relationships amongst themselves and then with

others,” says Nadia Bottoset, TBRHSC’s Site Lead for the TDM Project.

“Peers can be positive role models in decision-making and participation, but the most important role is that of an equal. The key to this model is that it recognizes people heal better and stay well longer when they are in healthy, therapeutic relationships. It’s about making healthy relationships while in hospital, as well as keeping them when the patient is discharged.”

Richard says he’s still facing challenges. That includes finding a new place to live, away from many of the temptations found in his current location, but he is determined to do what it takes to stay healthy. “I want it so bad my teeth hurt.”

Maria says she’s seeing the impact of Richard’s determination. “He’s making leaps and bounds. I’m proud of Richard. He’s motivated to do the hard work to be successful.”



Foundation Support

The Visitors' Room in Forensic Mental Health is more relaxing and welcoming thanks to a new mural commissioned with a Volunteer Association / Health Sciences Foundation Family CARE Grant. Rose Lazinski, Forensic Program Manager, said she consulted with many of the family members who used the room to get ideas. Eventually, they decided upon a stunning Northwestern Ontario backdrop: a calm, birch-lined lake cradled among rolling hills.

Adult Mental Health is receiving some new electronics through a Volunteer Association/Thunder Bay Regional Health Sciences Foundation Family CARE grant. A flat screen TV, DVD/VCR player and Nintendo Wii are being purchased for use by patients.

Research Initiative

Thunder Bay Regional Health Sciences Centre is one of nine member hospitals of the Council of Academic Hospitals (CAHO) currently implementing the Transitional Discharge Model (TDM)

Based on its implementation at various sites in Ontario, the United Kingdom and Scotland, it is expected that using this model will result in improved quality of patient care, increased communication and collaboration among hospital staff and community support groups and reduced readmission rates, Emergency Department use, length of stay, and hospital costs.

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.



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.



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.



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

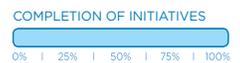
I. Support the development of a new Strategic Plan for TBRR that includes research into Mental Health and Addictions.

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.



“One of the immense advantages of being an academic health sciences centre and participating in research studies like the TDM Project is the benefit to our patients by being able to offer groundbreaking approaches to care.”

- Dr. Peter Voros, Program Director, Adult and Forensic Mental Health Program

Thunder Bay Regional Health Sciences Foundation

Raising funds to support Thunder Bay Regional Health Sciences Centre programs, equipment and services in Thunder Bay and throughout Northwestern Ontario that improve patient care.



(Left to right) Paul Fitzpatrick, Chair, Exceptional Cancer Care (ECC) Campaign; Tullio Provenzano, ECC Cabinet member, and Tony Provenzano, ECC Campaign Donors; and David Knutson, Chair, Thunder Bay Regional Health Sciences Foundation Board of Directors

The Health Sciences Foundation's

mission is to inspire the people of Northwestern Ontario to give generously to enable the advancement of world-class healthcare at Thunder Bay Regional Health Sciences Centre.

100% of the money we raise stays here in Northwestern Ontario.

The Health Sciences Foundation features three specialty funds: the Northern Cancer Fund, the Northern Cardiac Fund and the Health Sciences Discovery Fund. Each fund represents an area of high activity and high need in our community.

Donors are able to designate their gifts to any of the funds or can support any area of care within the Thunder Bay Regional Health Sciences Centre, such as Renal, Paediatrics, Trauma, Neurosurgery or many others.

"My Mom made the decision to give to the Northern Cardiac Fund. Many of her siblings also passed away from

heart disease. She wanted her gift to go to an organization where it would be used effectively to save lives."

Glenn Pelto, son of Anne Pelto who, through her will, made a bequest of \$141,332 to the Northern Cardiac Fund.

In 2013, we launched the Exceptional Cancer Care (ECC) Campaign to continue expanding the extraordinary, personalized care that has made Regional Cancer Care Northwest one of the best cancer centres in the province. The Health Sciences Foundation is supporting the centre's cancer plan by providing \$5.9 million in community funding for state-of-the-art equipment in three key areas: cancer diagnosis, treatment, and research.

"From my diagnosis through my treatment, I received exceptional care on each and every visit to Regional Cancer Care Northwest. I am grateful to have cutting-edge equipment and treatments here, giving patients their best chance of surviving their cancer journey."

Mike Muia, cancer survivor and organizer of Forty In Forty fundraiser for the ECC Campaign

When it's needed most, there is nothing more important than world-class healthcare. That's exactly what your gift brings to the people of our community.

Each year, local and regional donations support medical equipment, new technology, local research, education and awareness. Improvements continue to happen every day. From the safety and care babies receive in the NICU, patients requiring eye laser surgery, renal patients in need of emergency or critical care, to patients dealing with a chronic disease - the Health Sciences Centre continues to provide the absolute best care possible to every patient.

"There are a lot of good causes in this city, but the Health Sciences Centre has to be one of the most important in that it touches everyone in the community at one time or another."

Peter Knudsen, retired Founder of Equipment World and longtime donor to the Health Sciences Foundation

As Thunder Bay Regional Health Sciences Centre celebrates its 10th anniversary, we recognize that none of our milestones from the past 10 years, including the opening of this state-of-the-art facility, would have been possible without the generous individuals, groups and businesses throughout the region.

Thanks to the generosity of donors, healthcare at Thunder Bay Regional Health Sciences Centre continues to improve every day. People are healthier and can receive more of the care they need here at home.

Together, we are healthier.



**Thunder Bay Regional
Health Sciences
Foundation**

Programs & Services

Since opening in 2004, TBRHSC has expanded in its size, as well as its programs and services to serve patients and families in Northwestern Ontario.

Cardiovascular and Stroke Program

Patient Outcomes:

- Offered the first of what will be ongoing Vascular Outpatient Clinics as part of the development of a Comprehensive Cardiovascular Surgical Program at TBRHSC, which allows Northwestern Ontario patients to receive vascular care close to home;
- Cardiovascular in-patients are benefiting from the development of the Infective Endocarditis (IE) Pathway* and automated post-discharge follow-up calls for all angioplasty patients;
- In collaboration with Thunder Bay Regional Research Institute, participating in an exciting research project involving a new type of coronary stent designed to reduce adverse effects;
- Collaborating with the Emergency Department and Emergency Medical Services to improve rapid treatment for emergency stroke cases.

*A clinical pathway is a care guideline used to describe and implement clinical standards. They help to provide quality and efficient patient care



Since experiencing a stroke, Walter Scott (seen here with wife Christine) has stayed active through the Keep Moving with Stroke class. Most of the participants have had acute stroke care at Thunder Bay Regional Health Sciences Centre and after rehab, these individuals still need to keep active, which can be difficult to do on their own.

Chronic Disease Prevention and Management Program and Medicine Services

Patient Outcomes:

- Over 3,400 patients without a family doctor, or orphan patients, per year (20% of all patients at TBRHSC) receive care from the Hospitalist Service;
- Funds from the Ontario Renal Network allowed the Renal Service to hire Body Access and Independent Dialysis Coordinators who have worked hard to promote and increase home dialysis rates and increase vascular access rates;
- Our home rates have been some of the best in the province, meaning patients receive excellent care at home;
- Patients have also been able to receive care at home thanks to new Telehomecare Equipment with funding from the Local Health Integration Networks.



Dr. Parviz Masoudi is an Internal Medicine Specialist with the Internal Medicine Service-Hospitalist Program at TBRHSC, where the physicians and staff see more than 120 patients every day, many of whom have complex issues such as organ failure, long-term chronic diseases or are waiting for long-term care.



Mandy Tait-Martens from PACE (People Advocating for Change through Empowerment) shares her story of recovery with Adult Mental Health patients as one of several Peer Support workers involved in the Transitional Discharge Model project, being implemented by the Council of Academic Hospitals at TBRHSC.

Mental Health Program

Patient Outcomes:

- With the Transitional Discharge Model, discharged patients have a safety net of supportive relationships;
- Patients in Forensic Mental Health Programs have benefited from the expansion of services, including the addition of an outpatient nurse in the district of Kenora, to ease the transition phase of individuals who have been hospitalized for extended periods of time;
- Thanks to a partnership between the Forensic Mental Health Program and the Canadian Mental Health Association Thunder Bay, the development of a transitional rehabilitative housing program is helping patients find sustainable housing;
- The Shared Mental Health Care team moved to a new location on Golf Links Road, offering clients a cheerful, bright and welcoming atmosphere.



Radiation Oncologist Dr. Margaret Anthes was able to see patients while away on vacation, thanks to MOSAIQ, an oncology Electronic Medical Record system that was implemented in May 2013 at Thunder Bay Regional Health Sciences Centre's Regional Cancer Care Northwest.

Regional Cancer Care Program

Patient Outcomes:

- Cancer patients throughout Northwestern Ontario are better served thanks to a comprehensive Electronic Medical Record (EMR) implemented in the past year;
- Care plans and pathways* tailored to each patient are accessible to all providers whether treatment is happening at the Thunder Bay Regional Health Sciences Centre or at one of 14 satellite chemotherapy centres throughout the region;
- Patients have access to two new state of the art Linear Accelerators (Radiation Treatment Device);
- Palliative patients are connected in their home with care providers through telemedicine;
- Expanded access to screening and education through an improved, accessible patient education portal.

*A clinical pathway is a care guideline used to describe and implement clinical standards. They help to provide quality and efficient patient care

Women and Children's Program

Patient Outcomes:

- The Paediatric Outpatient unit hosts a visiting Paediatric Cardiology Clinic three times per year, allowing children with cardiac conditions to receive care closer to home;
- Mother and baby are benefiting from an outpatient prenatal smoking cessation program, "Moving On to Being Free," established at the Maternity Centre;
- Using current best practice evidence and intra-professional collaboration, a new protocol was developed and implemented in the Neonatal Intensive Care Unit (NICU) so that pre-term infants and critically ill newborns are provided essential nutritional requirements by intravenous therapy;
- 14 new cardio-respiratory monitors and a central monitoring station allow NICU staff and physicians to monitor and develop treatment plans for sick and pre-term newborns.



To relieve some of the stress experienced by mothers dealing with pregnancy-related travel, the Women and Children's Program has taken steps such as offering a Maternal Child social worker for emotional and practical assistance, and arranging tele-3visitation with family members back home.

Trauma Program, Emergency, Base Hospital and Critical Care Services

Patient Outcomes:

- Working with Adult Mental Health, the Emergency Department (ED) identified key components to improve psychiatric care and management, patients now have increased privacy thanks to two new interview rooms in the ED;
- Improved transitions in care thanks to a recently developed Critical Care (ICU) inter-facility policy for chronic ventilator dependant patients in collaboration with community partners;
- Low wait times for non-admitted patients and physician initial assessment, in part thanks to a new triage registration process, Rapid Assessment Zone for select patients and strategies to help patient flow;
- With funding from the Ministry of Health and Long-Term Care, TBRHSC and Emergency Medical Services created an Offload Delay Nurse position to better facilitate the flow of patients arriving by ambulance.



Thanks to funding from the Ministry of Health and Long Term Care, TBRHSC and EMS, an Offload Delay Nurse position was created to better facilitate the flow of patients arriving by ambulance.



On September 30, 2013, TBRHSC joined an ever-growing number of hospitals that recognize the positive role that providing a smoke-free environment can play in their communities and that implementing smoke-free grounds is an important part in promoting healthy choices and health in the community.

Prevention and Screening Services

Patient Outcomes:

- Patients now benefit from our Smoke-Free environment and patients who want to quit or reduce smoking have benefited from our supportive approach;
- Thanks to the Fresh Market, patients and families have access to healthy, fresh local produce and products;
- Increased access to early detection of cancer with the launch of the Screen For Life Coach and in partnership with several Aboriginal organizations, the Screen For Life Day coach offered convenient drop-in screening opportunities across the region;
- As part of our Under/Never Screened initiative we released a DVD featuring Regional Chief Stan Beardy who tells his story of early colorectal cancer detection at TBRHSC and encourages all First Nations adults to be screened.



A Medical Radiation Technologist (or MRT), such as Rose Harding, is one of the first people you might see after getting into the Emergency Department. An x-ray can be one of the first steps on the path to diagnosis.

Diagnostic Services

Patient Outcomes:

- Improved patient satisfaction and overall experience with implementation of a Patient and Family Centred Care sustainability plan;
- Improved time to diagnosis with Rapid Breast Assessment model of care and significantly reduced wait times for MRI through participation in a provincial MRI Efficiency program and installation of a new 1.5T MRI;
- Improved process to access patient results for consulted laboratory and pathology reports and successfully recruited three additional pathologists in 2013 to address turnaround times for pathology results;
- Decreased wait times for Radiology Emergency patients as a result of implemented recommendations from the Diagnostic Imaging/ Emergency Department Coordinator pilot;
- Expanded patient access to interventional neurology and radiology services.

Surgical, Ambulatory and Rehabilitative Services

Patient Outcomes:

- Shorter hospital stays by decreasing functional decline while in hospital through the MOVE ON project and the Implementation of Enhanced Recovery After Surgery project which promotes early, staged and progressive mobilization of patients to lessen decline in their mobility while in hospital;
- Improved access to care thanks to the recruitment of two new anaesthetists, an Ear, Nose, Throat Specialist; Urologist, and Plastic Surgeon;
- Decreased vulnerability of functional decline in elderly patients by early assessment, rehabilitative intervention and social work assessment in a timely manner through the Assess & Restore program;
- Through post-discharge phone calls to patients and Manager rounding of patients, we are learning firsthand from patients and families how we are doing and what we can do to work together to meet their needs.

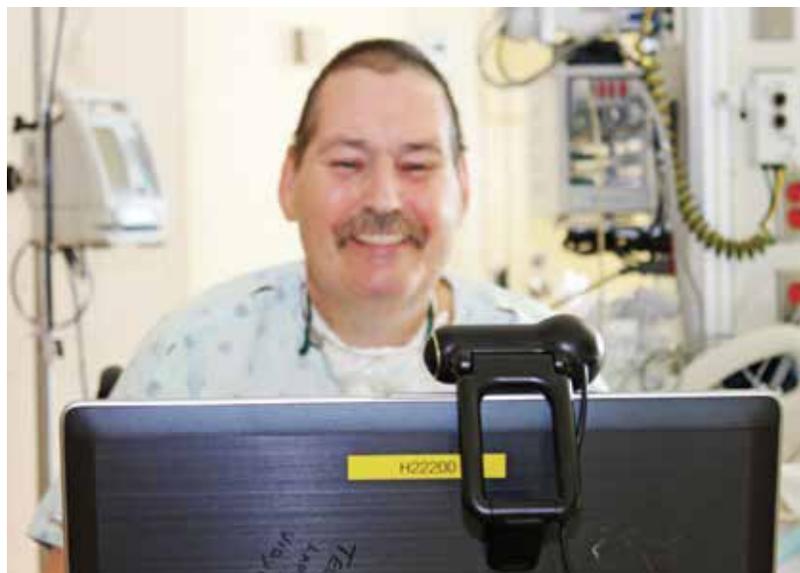


(Left to right) Dr. Scott Bonneville, Erin Woodbeck, Debbie Olson and Dr. Gabriel Mapeso are implementing Enhanced Recovery after Surgery guidelines to optimize patient outcomes following colorectal surgery at Thunder Bay Regional Health Sciences Centre.

Supportive, Palliative Care and Telemedicine Services

Patient Outcomes:

- In-patients at TBRHSC are now able to stay connected via tele-visitation to family and friends who can use their own home personal computer, rather than going to a hospital or nursing station;
- A Tele-Counselling pilot project is allowing a number of out-patients in the region to receive counseling support at home, addressing some of the issues for patients who live in small communities who are not comfortable going to a nursing station or clinic for a video appointment;
- Another pilot project in which Tablets are issued to a number of Palliative patients allows them to receive supportive care without the stress of leaving home;
- Improved access for patients and family members to spiritual care seven days a week, with two full-time spiritual care specialists.



Brian Smith is the first patient at TBRHSC to tele-visit with a family member who was at a personal computer, through Personal Computer Video Conferencing with his sister in Newfoundland and Labrador.

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
Admitting
Capital Program
Planning
Chief of Staff Office
Clinical Trials
Communications & Engagement
Corporate Services
Financial Services

Health Records
Housekeeping
Human Resources & Organizational Development
Infection Control
Information Systems
Information Technology
Labour Relations

Laundry and Linen Services
Library
Mail Service
Material Distribution
Medical & Academic Affairs
Northwest Regional Supply Chain - Sourcing and Contracting

Nutrition and Food Services
Occupational Health & Safety
Patient and Family Advisors
Patient Care Services
Pharmacy
Physical Plant and Biomedical

Quality Management
Research Ethics
Security
Strategy & Performance Management
Supply Process Distribution
Telecommunications
Thunder Bay

Regional Health Sciences Foundation
Volunteer Association to Thunder Bay
Regional Health Sciences Centre
Volunteer Services

Wired for Success

How Information Technology and Information Services Contribute to Excellent Patient Care



Jamie Gleeson is a Network Administrator in IT, seen here in the data centre at TBRHSC.

Information technology (IT) and Information Systems (IS) are vital components of patient care throughout Thunder Bay Regional Health Sciences Centre (TBRHSC).

The two departments work closely together to support hundreds of applications and technologies, including financial, messaging and telecommunication systems. They also support systems that have a direct impact on patients and clinical care such as: mobile devices carried by nurses that monitor telemetry patients; information systems that integrate with laboratory analyzers to provide lab results; automated packaging and drug dispensing systems; digital dictation and transcription services; tracking patient progress and movement during surgery; maintaining proper heating and cooling within the hospital; providing patient Internet services for clients and families; and electronic systems to track and notify porters when and where to

transport patients. Medical devices such as digital radiology (X-ray, MRI, CT-Scan) generate streams of data and information that require analysis, storage, retrieval, and distribution as well as periodic assessment by medical professionals.

Also, thanks to leadership and expertise provided by the joint TBRHSC and St. Joseph's Care Group (SJCG) Information Systems and Technology Service, all 13 hospitals in the North West Local Health Integration Network (NW LHIN) are now connected to the regional hospital information system, resulting in improved patient care and safety. With the connection of Lake of the Woods District Hospital (LWDH) in Kenora, Ontario to the region's shared hospital information system (HIS) in June 2013, the NW LHIN became the first LHIN to have all of its hospitals access shared electronic medical records.

The region's shared HIS is expected to improve patient care and outcomes by

making clinical information about the patient's care available to clinicians in one single view. For patients moving between hospitals in the Northwest, the shared HIS enables patient health information to be available, allowing continuity of care to be maintained from one facility to another.

"Having a shared HIS is especially important here in our region due to the significant movement of patients among the facilities in the NW LHIN. Patients often visit the TBRHSC in Thunder Bay for specialized diagnostics, such as CT and MRI, or they come as inpatients because of higher acuity healthcare needs," says Dawn Bubar, Senior Director of Informatics at TBRHSC and SJCG.

In addition to promoting timely and efficient patient care, the project is also expected to improve care by reducing or eliminating errors and duplications of diagnostic testing and by providing faster access to clinical information to providers within the circle of care.

TBRHSC Employees Walk the Talk

Every year Thunder Bay Regional Health Sciences Centre (TBRHSC) presents Walk the Talk Awards in a number of categories to acknowledge and reward physicians and staff members who go above and beyond in their work.



(left to right) Donna Faye (French Language Services Award); Kasey Etreni (Foundation Award); Julia Bailey, Kelly-Jo Gillis, Sara Chow, and members of the Eat Smart Committee (Healthy Together Award); and Carmen Blais (Aboriginal Health Award).

These individuals are helping the TBRHSC turn its mission to advance world-class Patient and Family Centred Care in an academic, research-based, acute care environment into a reality.

Aboriginal Health Award

Carmen Blais

Academic & Research Award

Dr. Ingeborg Zehbe

Foundation Award

Kasey Etreni

French Language Services Award

Donna Faye

Individual Award

Dave Vincent

Dyan Kuluski

Joanna Stram

Joe Cuglietta

Kim McMahon

Marilyn Myers

Healthy Together Award

Eat Smart Committee

Leadership Award

Adam Vinet

Sandy Brooks

Occupational Health & Safety Award

CJ Grant

Patient Safety Award

Laboratory Department

Patient and Family Centred Care Award

Deb Spaulding

Patient and Family Centred Care Award

Dr. Bruce Pynn

Dr. Nicole Laferriere

Dr. James Goertzen

Team Award

Switchboard Department

Sterile Processing Department

Volunteer Award

Barb Lundberg

Kim Montanaro

President's Award of Excellence

Aaron Skillen

Board of Director's Award

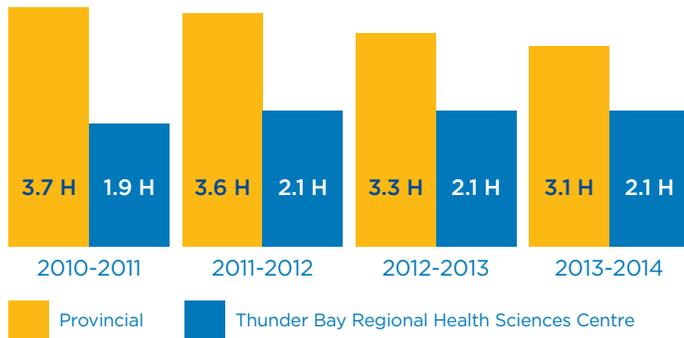
Critical Care Team (ICU)

Measures of Success

“Highlights of successes in 2013-2014 as well as other key indicators since the start of our Strategic Plan in 2011”

Emergency Department Wait Times

Time to initial physician assessment for admitted patients in hours (H)



Patient Safety

All 13 inpatient areas have implemented **Medication Reconciliation**



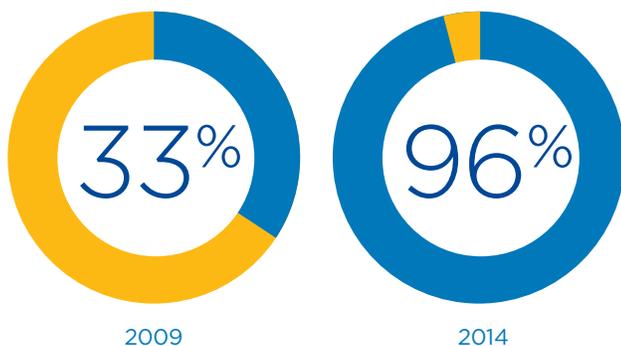
October, 2013, Online Masters In Public Health

125 in-patients signed up for Quit Smoking Plans



Hand Hygiene

Compliance rates based on regular audits



40,000
Volunteer Hours
A value of 1 million dollars

Reduced Overtime Costs

Based on a reduction of 23,244 hours since 2011/2012



314,500 kg of waste recycled, reduced or reused



Financial Statements

Thunder Bay Regional Health Sciences Centre (TBRHSC) continues to manage resources effectively and efficiently, despite continued overcapacity pressures. TBRHSC finished the 2013-2014 fiscal year with a \$19,000 deficit, compared to a surplus of \$2.4 million in the previous year. The ability to achieve this financial position in 2013-2014 has been achieved through a number of strategic initiatives as well as one-time funding assistance from the Ministry of Health and Long-Term Care to address the overcapacity issues.

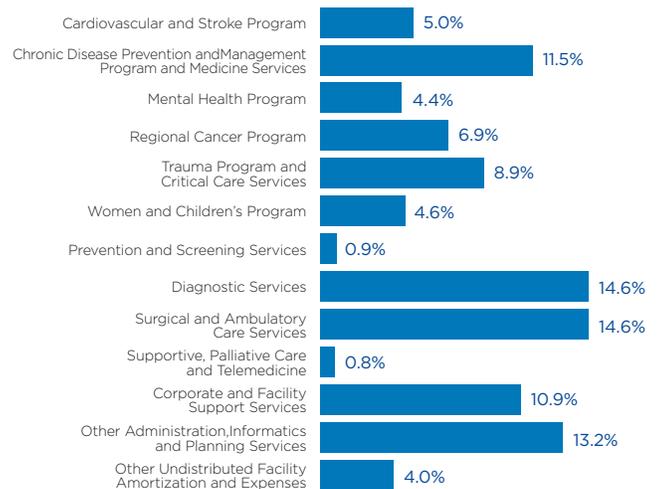
STATEMENT OF FINANCIAL POSITION

March 31, 2013 (Amounts in \$ thousands)	2014	2013	2012	2011
Assets				
Current assets	33,113	33,452	29,822	28,779
Non-current assets	260,039	238,660	246,473	256,185
Total Assets	293,152	272,112	276,295	284,964
Liabilities and Fund Balances				
Current liabilities	45,300	42,858	41,179	40,175
Non-current liabilities	236,634	218,603	227,040	233,508
Total liabilities	281,934	261,461	268,219	270,498
Fund Balances	11,218	10,651	8,076	11,281
Total Liabilities and Fund Balances	293,152	272,112	276,295	284,964

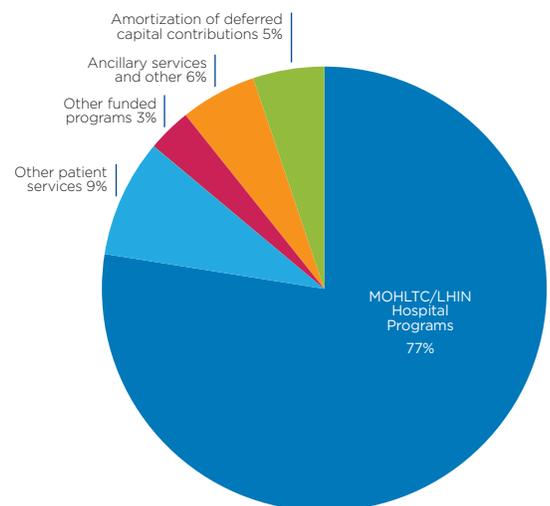
STATEMENT OF OPERATIONS

For the year ended March 31, 2013 (Amounts in \$ thousands)	2014	2013	2012	2011
Revenue				
"Ontario Ministry of Health and Long-Term Care / North West Local Health Integration Network"	238,968	233,940	227,104	221,085
Other patient services	26,411	25,109	26,716	26,721
Other funded programs	9,671	8,838	8,727	7,312
Ancillary services and other	17,020	15,532	16,246	15,117
Amortization of deferred capital contributions	16,214	16,767	16,420	19,738
	308,284	300,186	295,213	289,973
Expenses				
Salaries and benefits	204,366	198,443	200,141	195,068
Medical, surgical supplies and drugs	36,064	34,486	34,919	33,866
Supplies and other	19,216	18,089	22,666	21,665
Other funded programs	9,647	8,840	8,744	7,226
Plant operations and equipment maintenance	16,252	15,874	10,517	13,614
Amortization	22,758	22,032	21,245	20,868
	308,303	297,764	298,232	292,307
Excess (deficiency) of revenue over expenses	(19)	2,422	(3,019)	(2,334)

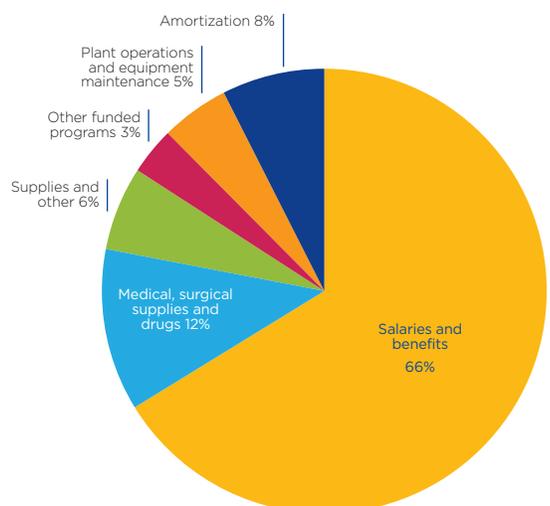
Expenses by Program and Service

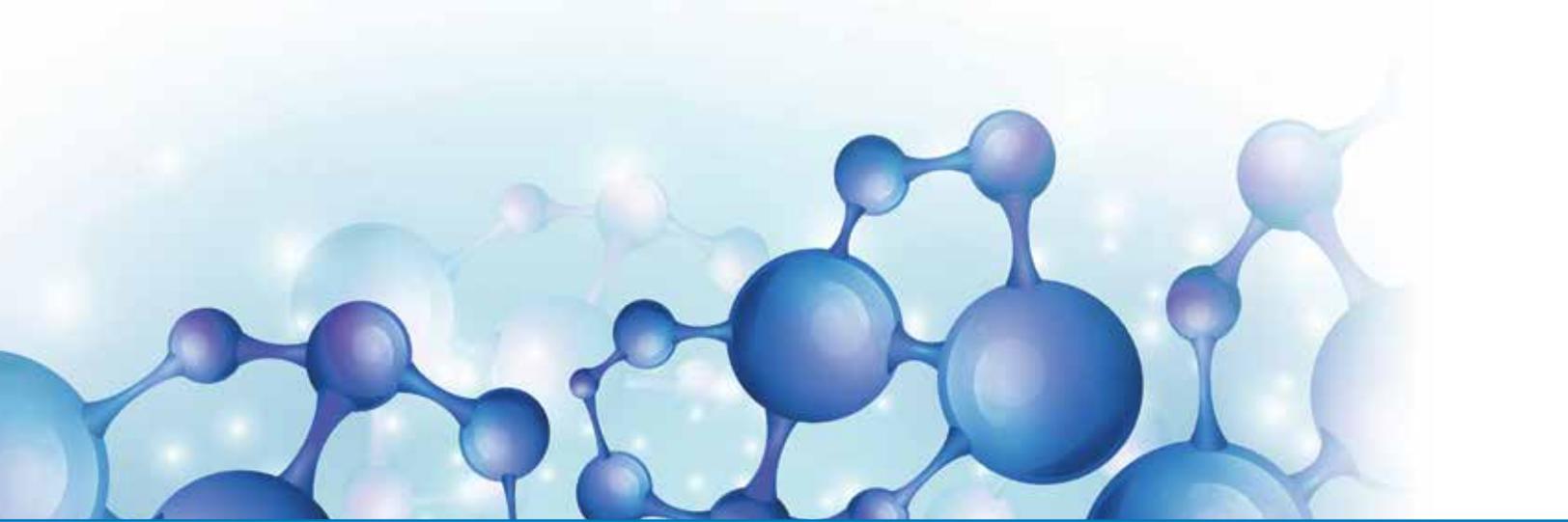


Revenue



Expenses





research hospitals in the country. We are all very proud of the role that Thunder Bay Regional Research Institute has played in patient care up to now. This is just the beginning. We look forward to seeing what we will achieve together in the next 10 years and beyond.

TBRHSC's transformation from a very good community hospital to a leading academic health sciences centre required the support of a research partner. Since its beginning 7 years ago, the Thunder Bay Regional Research Institute has grown to over 100 staff, helping to catapult TBRHSC to the top 40

From the first patients to receive care in this facility, to the first Northern Ontario School of Medicine students to begin training here and the launch of the Thunder Bay Regional Research Institute, there are so many milestones that have been achieved in the short span of 10 years.

10 Years of Thunder Bay Regional Health Science Centre

On February 22, 2004, Thunder Bay Regional Health Sciences Centre opened, combining the services of McKellar and Port Arthur General Hospitals and Cancer Care services.

McKellar and Port Arthur General Hospitals had merged in 1995 to become the Thunder Bay Regional Hospital, providing acute care for

Northwestern Ontario. Although the province originally planned to refurbish one of the sites, the community decided to build a new, modern facility.

The opening of a state-of-the-art healthcare facility promised a bold new era for healthcare in Northwestern Ontario.



2004

On February 22, 2004, Thunder Bay Regional Health Sciences Centre welcomed its first patients.



2005

Tbaytel Tamarack House opened, a "home away from home" for regional cancer patients.



2006

TBRHSC was formally recognized as a Teaching Hospital by the Ministry of Health and Long-Term Care.

Building a Healthy Future

Since opening in 2004, TBRHSC has expanded in its size, as well as its programs and services. The successes of the past ten years and those that are certain to come could not have been achieved alone. For the role you had in building excellent healthcare in Northwestern Ontario, we thank you.



2007

The Angioplasty Program was introduced and the first patients received stents at TBRHSC.



2008

TBRHSC's Home Hemodialysis Program was launched.



2009

The Patient and Family Centred Care model was formally adopted.



2010

TBRHSC welcomed new President and CEO, Andr ee Robichaud.



2011

The Centre for Complex Diabetes Care opened to provide specialized diabetes management and treatment.



2012

TBRHSC's Aboriginal Advisory Committee grew to 25 members.



2013

TBRHSC strengthened its commitment to providing smoke-free grounds.

2013 - 2014 Thunder Bay Regional Research Institute
Report to the Community and a Year in Review

Bringing

Discovery to Life

Thunder Bay Regional
Research Institute

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

There and Back Again:

Dr. Naana Jumah
Returns to Her
Hometown for Cutting-
Edge HIFU Research

Improving Cardiovascular Care through Research

Dr. Ian Billingsley
and Cardiac Cath Lab
Track Effectiveness of
New TiNO Stent

Cyclotron a Symbol of TBRRI's Success

Partners Helping
TBRRI Build
a Sustainable
Research Program

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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

Thunder Bay Regional Research Institute

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

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OBJECTIVES 2012-2016

GOAL 1:

Impact through Excellence in Imaging

GOAL 2:

Enabling of Research Strategic to TBRHSC

GOAL 3:

Economic Growth and Sustainability

An Integrated Approach to Medical Research

At Thunder Bay Regional Research Institute (TBRI) we recognize that the link between research and healthcare is vital. To illustrate that connection, most sessions at our Fall 2013 TBRI retreat were presented by a team that paired researchers with their clinical counterparts, such as TBRI scientist Dr. Oleg Rubel and orthopaedic surgeon Dr. Stephen French who discussed their work with modelling bio-inspired coatings for bone implants to improve compatibility and adhesion. TBRI researcher, Dr. Naana Afua Jumah, presented “Novel Therapies for Cervical Cancer” with Dr. Ingeborg Zehbe and Dr. Laura Curiel.

We are excited about the immediate and long-term benefits to patient care that result from collaborations between clinicians and TBRI scientists.

One recent example of TBRI innovation making a difference to patients is the Magnetic Resonance High Intensity Focused Ultrasound (MR-HIFU) device that was approved last year by Health Canada for the treatment of uterine fibroids. This is great news for women who now have an alternative to hysterectomy for the treatment of uterine fibroids.

There are many opportunities to enable research at Thunder Bay Regional Health Sciences Centre (TBRHSC), beginning with clinical trials and health services research projects. Much progress has been made in developing a clinical trials operation at TBRHSC. More than 600 patients have now benefited from TBRI clinical trials and

already 38 physicians in Thunder Bay have become Physician Researchers.

In the TBRHSC/TBRI community, the concept of aligning strategic priorities to coordinate efforts – care, teaching and research – is represented visually by the tricycle in which the big wheel represents clinical practice and the two smaller wheels learning and research.

Just as a tricycle needs all three wheels functioning in unison to move forward, an Academic Health Sciences Centre advances the quality of care when clinical care, teaching and research seamlessly work together.

Together with clinicians and our academic partners, we are making the tricycle move forward with improved patient care as the number one goal. The more we collaborate, the more we achieve.

Together, we propel economic development because researchers bring millions of grant dollars to our community. Commercialization then translates into new companies. The ensuing teaching and research opportunities attract world-class healthcare providers, who teach the next generation. It also means patients get access to leading-edge medical equipment and teams of healthcare providers involved in their care.

We provide higher quality of care today and, through research, develop the healthcare of tomorrow, driving innovation that leads to earlier diagnosis, improved treatment options and better outcomes.

Orthopaedic Surgeons Donate \$2.1M to Own Research

Seven orthopaedic surgeons from the Thunder Bay Regional Health Sciences Centre are donating a combined \$2.1 million to the Thunder Bay Regional Health Sciences Foundation over 10 years to launch a robust orthopaedic research program. The ultimate goal is to reduce the amputation rate in Northwestern Ontario by at least 50%. Currently, the rate is three times that of the provincial rate.

With the donation, the surgeons hope to inspire government and community supporters to make their own donations to this important research.

“This group of highly skilled, highly dedicated, and generous orthopaedic surgeons are showing great leadership among their clinical peers with this donation,” said Dr. Gordon Porter, Chief of Staff at Thunder Bay Regional Health Sciences Centre.

The group includes Dr. Peter Clark, Dr. Claude Cullinan, Dr. Kurt Droll, Dr. David Hoffman, Dr. Jubin Payandeh, Dr. David Puskas, and Dr. Tracy Wilson. This initiative is just one example of the many clinician-driven research projects that are enabling research strategic to the Health Sciences Centre.

“We’re doing this because we want to establish a sustainable orthopaedic research program,” said Dr. Droll. “Investing in research is what leads to innovation and advancements in patient care.”



(Right to left) Doctors David Puskas, Peter Clark, Jubin Payandeh, David Hoffman, Kurt Droll, Tracy Wilson and Claude Cullinan presenting their surgeon group's donation to Foundation Board Director Clint Harris to fund a local orthopaedic research program.

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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

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Michael Power (former CEO)

Dr. Rui Wang

Dr. Brian Stevenson

Lyn McLeod

Dr. Wayne Schnarr

Dr. Fred Gilbert

Dr. Gordon Porter

Ron Saddington

Michael Gourley

A New Chapter Begins in TBRRI's History



The Thunder Bay Regional Research Institute (TBRRI) has accomplished much in its first seven years. From its fledgling start to its status today

as a world-class centre of medical imaging research, everyone involved with the institute can be proud of what has been accomplished in a very short time. We're already seeing direct results: Thunder Bay Regional Health Sciences Centre is now one of the Top 40 Research Hospitals in Canada, one of the first research projects conducted here (Founding Scientific Director John Rowland's XLV mammography) is now entering the prototype stage, and we continue to attract researchers.

Our best days are still ahead of us. It's been a year since Dr. Roxanne Deslauriers joined us as acting CEO, and many of the accomplishments that culminated in the past year are thanks to her leadership. We also welcomed a new Chief Operating Officer, Peter Myllymaa, whose background in finance and healthcare will surely be a benefit as we move forward towards our goal of sustainability.

I'm pleased with the way we've been able to create a decidedly Northwestern Ontario feel to our outstanding facility. We have scientists from literally all around the globe, yet the focus is on helping residents in Northwestern Ontario. Patients here will benefit from the growing clinical trials program including several homegrown trials either underway or in the planning stages. The new cyclotron will enable us to produce our own medical isotopes for research and diagnostics without having to rely upon outside sources as we've done in the past. (In fact, we will become a supplier ourselves.) Expansion is a sure sign of success as well, and the

new Health Services Building that will house the cyclotron will be a welcome addition when it opens.

Speaking of attracting new talent, we had two new scientists join our team this year. Dr. Boguslaw Tomanek's research using MRI and spectroscopy, particularly with regards to cancer research, fits in extremely well with other research at the TBRRI. Dr. Naana Jumah is an incredible story in herself – a clinician/scientist, raised in Thunder Bay, who went to school at the University of Toronto, Harvard University, and the University of Oxford before coming home to work in women's and Aboriginal health.

One key indicator of research success I believe is the amount of government research dollars we attract. This year, the program and our scientists received millions of dollars in grants. Notably, almost \$2.5 million from the federal and provincial governments for imaging technology, MRI and functional MRI. In all, we have attracted more than \$4 million in grants and funding in 2013/2014.

Our eventual goal, of course, is to commercialize the research we do here and achieve financial sustainability, independent of government operating support. But until we get there, the support we receive from all levels of government and our Foundation is essential to realizing the important work we do here and achieving that goal of self-sustainability. I thank all our funding partners and the community for their support.

I believe that our accomplishments this year have set us on the right course for years to come. I look forward to the challenges and successes that lie ahead.

Dr. Gary Polonsky

Chair, TBRRI

Strong, Sustainable Science



Sustainability is not a word that the general public associates with science, especially in a country like Canada. The average person

thinks of sterile labs filled with scientists in white coats, all funded from... somewhere. Research is happening so funding must be assured.

As every research scientist knows though, funding often can be the number one priority, and not always an easily attainable one. The Thunder Bay Regional Research Institute (TBTRI) from the start created an environment to encourage economic sustainability. Commercialization is an important step towards getting new treatment options and equipment to the patients who need them as well as generating revenue for future research.

This past year, we launched a number of projects that will boost our commercialization potential. As you will read in this report, new transducer technology being developed here by Drs. Oleg Rubel, Laura Curiel, and Samuel Pichardo could lead to valuable Intellectual Property. The new cyclotron offers the potential for several revenue sources. That, along with the MicroPET could also lead Dr. Chris Phenix and his team to patentable advances in personalized medicine.

We've also seen great advances in our Clinical Research Program, boosted in part thanks to TBTRI's growing reputation. The team here including Sandra Stoger, Janet Northan, Kathleen Romano, and Katherine Andriash is doing an incredible job finding clinical trials that make the most sense for patients in Northwestern Ontario, attracting new participants, and solidifying its reputation as a world-class program.

There are also indirect ways we are growing the research program here. Partnerships are one way, and there are several obvious ones including TBTRI scientists with cross-appointments to Lakehead University, the Northern Ontario School of Medicine, Confederation College, Sunnybrook Research Institute, and other institutions. Not so obvious ones are the physician researchers; a growing number of care providers including Dr. Arnold Kim, Dr. Ian Billingsley, and a group of local orthopaedic surgeons are getting involved in research and clinical trials, thanks to TBTRI support. These opportunities increase our ability to attract talented new clinicians/scientists to the Thunder Bay Regional Health Sciences Centre.

In the coming year, we anticipate continued growth. We are in the process of hiring a new Director of Clinical Business Development, who will help scientists along the path towards commercialization and expand clinical trials and conduct research. Also key to our growth is the support we receive from our municipal, provincial, and federal funding partners, as well as from our community through the Thunder Bay Regional Health Sciences Discovery Fund. Their continued investment in TBTRI is a testament to the importance of the health sciences cluster to the economic and social well-being of our community.

Our goal will remain the same: to build a sustainable research program that advances excellence in imaging to provide patient-focused research for the residents of Northwestern Ontario.

Dr. Roxanne Deslauriers

Acting CEO, TBTRI
VP Research, TBHSC

TBTRI Scientists

Naana Afua Jumah, MD, Ph.D., FRCSC

Obstetrician
Gynaecologist,
Thunder Bay
Regional Health
Sciences Centre

Clinician Researcher,
Thunder Bay Regional
Research Institute

Assistant Professor,
Northern Ontario
School of Medicine

**Boguslaw
Tomanek, Ph.D.**

Adjunct Professor -
Oncology, Medical
Physics, University of
Alberta

Adjunct Professor
- Radiology
Department & Clinical
Neurosciences
Department,
University of Calgary
Multi-modal
molecular imaging
and gradient-free MRI

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)

Alla Reznik, Ph.D.

Canada Research
Chair and Associate
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/
TBTRI

"In-silico" approach to
probe discovery

Mitchell Albert, Ph.D.

LU-TBTRI 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 fMRI to
understand changes
in neural networks
following brain injury
or disease

There and Back Again

Dr. Naana Jumah Returns to Her Hometown for Cutting-Edge HIFU Research



Dr. Naana Jumah (left) is working with Dr. Laura Curiel (right) to advance TBRRRI's High Intensity Focused Ultrasound (HIFU) program.

Thunder Bay has likely produced several Harvard-trained doctors and Rhodes Scholars. But for perhaps the first time, we've attracted back that talent in large part because of the quality of our clinical research program.

In January 2014, Dr. Naana Jumah joined the Thunder Bay Regional Research Institute (TBRRRI) as a clinician researcher, opening an Obstetrician-Gynaecologist practice with a focus on Aboriginal and women's health in Thunder Bay after obtaining degrees from the University of Toronto, Harvard University, and the University of Oxford, which she attended on a Rhodes Scholarship. Dr. Jumah also received a \$300,000 PSI Graham Farquharson Knowledge Translation Fellowship, which enables clinician researchers to commit half of their time to promising bench-to-bedside research.

Already she is working with Dr.

Laura Curiel to advance TBRRRI's High Intensity Focused Ultrasound (HIFU) program, preparing to conduct translational research in the treatment of uterine fibroids with MRI-guided HIFU. The cutting-edge technique represents a giant leap in patient care.

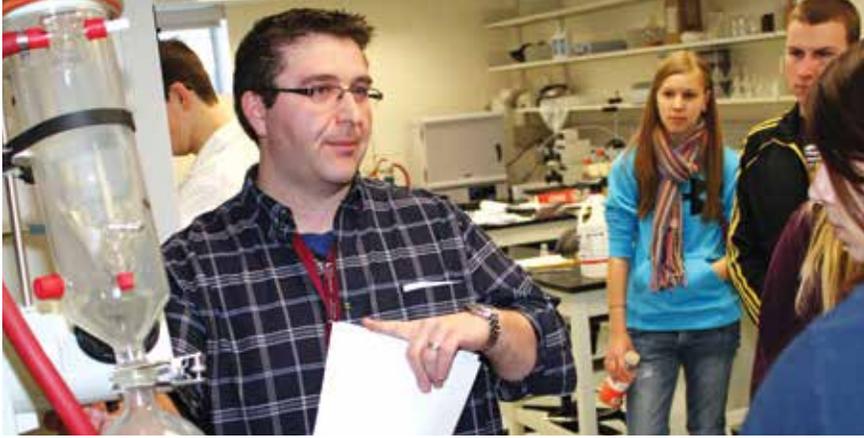
"The procedure is usually done on an outpatient basis," Dr. Jumah said. "Patients come in the morning, have the procedure, then go home later that evening, as opposed to an invasive surgical procedure that would require them to come in, have surgery, stay in hospital for three days and then spend six weeks recovering at home."

The two-year trial, which is set to start enrolling patients in the fall of 2014 pending approval from the TBRHSC Research Ethics Board, represents exactly the type of research that meets the TBRRRI's mandate to "Impact through Excellence in Imaging". MRI

guidance allows clinicians to pinpoint exact locations in real time for precise removal of the fibroids. Techniques tested during the clinical trial could lead to new treatment options for other diseases including cancer.

Dr. Jumah's arrival to work on the trial also represents a milestone in TBRRRI's history.

"It goes to show that Northwestern Ontario is solidifying itself as a premier destination for world-class scientific talent," says Dr. Roxanne Deslauriers, Acting CEO for TBRRRI, and VP Research for TBRHSC. "The Thunder Bay Regional Research Institute is creating career opportunities in our community, so that someone like Dr. Jumah, with her excellent credentials, can return home and use her research to enhance patient care in our region."



Phenix Group Advances in PET Imaging

Dr. Chris Phenix and his team received a provisional patent in 2013 on a new strategy for imaging cancer biomarker enzymes. This method may help detect aggressive cancer earlier and monitor response to therapy using PET. The Phenix team was expanded to ten people after the recruitment of Dr. Shusheng Wang from the University of Washington and technician Ashley Esarik from the University of Western Ontario. New research collaborations were initiated with the Advanced Medical Research Institute of Canada (AMRIC) in Sudbury, to use PET imaging to guide the development of vaccines against addictive drugs such as nicotine, and with McMaster University, to evaluate PET probes to reveal aggressive cancer.



Dr. Lily Wu Receives Heart and Stroke Award

“Would you like high blood pressure with that?” According to Dr. Lily Wu, that’s the real question at the fast food counter. Dr. Wu received a 2013 Heart and Stroke Foundation Mid-Career Investigator award to continue her research into methylglyoxal (MG), a harmful compound that forms in reaction to sugar in our blood. Dr. Wu hopes that her research will reveal the role of sugar metabolism regulation in high blood pressure and diabetes, in part by using ultrasound imaging to analyze structural changes in blood vessels, ultimately leading to better treatments for heart disease and stroke.

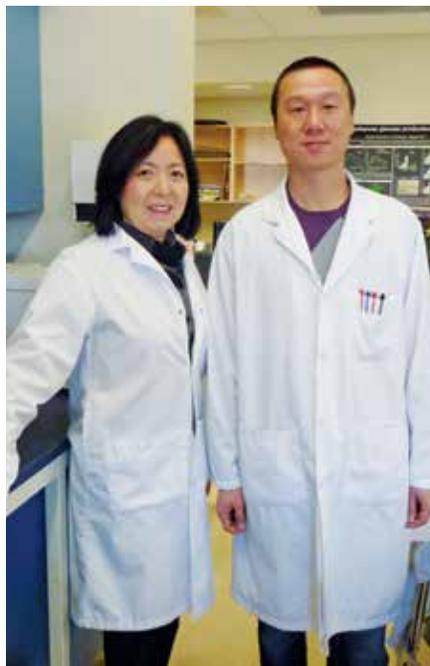


Nanoparticles as Markers for Prostate Cancer

In the search for more accurate methods for prostate cancer diagnosis, Dr. Boguslaw Tomanek’s team is investigating the use of nanoparticles as cancer markers. MRI is potentially a great diagnostic tool, but it often fails to distinguish between cancerous and non-cancerous tissue. These nanoparticles act in the same way as biomarkers, attaching to cancer cells to enhance the signal and identify tumours more accurately. This will lead to better and perhaps earlier diagnosis, better monitoring of a patient’s response to treatment, and ultimately fewer deaths.

PET Imaging Techniques May Help Diagnose Alzheimer’s Earlier

Dr. Alla Reznik started a new research project to develop a low-cost, portable, high-performance PET imager designed specifically for neurological applications. The ultimate goal is to enable early diagnosis of Alzheimer’s disease (AD). The procedure includes using clinical presentation and PET imaging to identify the state of the disease biomarkers amyloid and fluorodeoxyglucose (FDG). Once established, Dr. Reznik and her team hope to use this information to actually modify the disease using new or existing drugs, testing the effectiveness of those drugs in real time through structural and functional brain imaging.





Goal 2:
Enabling of Research
Strategic to TBRHSC

Number of Cardiovascular Studies on the Rise at Health Sciences Centre

Dr. Ian Billingsley and his team are participating in a study testing the effectiveness of a new stent designed to reduce side effects after angioplasty.

The Clinical Trials Program provides patients at the Thunder Bay Regional Health Sciences Centre (TBRHSC) with the opportunity to participate in cutting-edge research that in many cases will improve treatment options for future patients.

One such study underway in the Cardiovascular Program is TITAN 2: *Canadian, Multicentre Prospective, Descriptive Study to Determine, in a Cohort Type Real-World, the Efficacy and Safety at 1 Year Following the Implantation of Titanium-Nitride-Oxide-coated Stents in the Treatment of De Novo Lesions*. Dr. Ian Billingsley, along with other clinicians in the program and Terri Gurney, Manager of the Cardiac Catheterization Lab, are participating in the study testing the effectiveness of a new stent designed to reduce side effects after angioplasty. The trial is conducted in conjunction

with the lead study investigator Dr. Jean-Francois Tanguay from the Montreal Heart Institute.

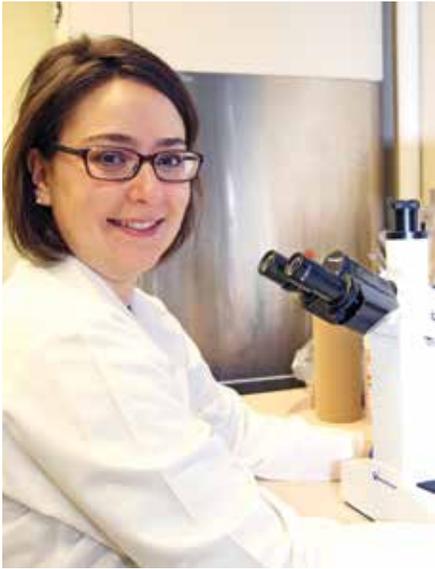
Stents can help keep the arteries open after angioplasty, but possible side effects include inflammation, allergic reactions, and clot formation. Drug-eluting stents, which slowly release a drug around the area, reduce some of these side effects. However, research has shown an increased risk of stent thrombosis (blood clotting) associated with these first generation stents even years after insertion, prompting scientists to look for alternatives.

That's where the TITAN 2 comes in. This stent, produced by Hexacath, is coated with titanium nitride oxide (TiNO), which has been shown to reduce the risk of blood clots and other side effects of bare-metal stents in studies all over the world. It could be

used for the thousands of Canadians who undergo angioplasty each year - including in Thunder Bay. So far, over 70 patients have been enrolled in the study at TBRHSC. These patients will be tracked in a registry over the course of a year.

The TITAN 2 trial is one of six cardiology studies and trials starting or ongoing this year. Others include a multinational study evaluating the effectiveness of a new anticoagulant to reduce blood clots during angioplasty, an investigation into the effectiveness of a new drug eluting stent, and a comparative study for effectiveness and patient comfort of using an artery in the wrist as an entry point during angiography rather than the groin, as is traditionally done.

All represent new ways in which TBRI has enabled research strategic to TBRHSC.



CAHO Pilot Project at TBRHSC a Success

Patients with possible spine injury usually have to wait in an uncomfortable collar for a physician assessment. However, nurses in the TBRHSC Emergency Department (ED) can now independently “clear” and remove c-collars, thanks to clinical research done right here. The Council of Academic Hospitals of Ontario (CAHO) selected TBRHSC to participate in the Canadian C-Spine Rule (CCR) ARTIC Research Project to implement an interprofessional-care approach in the ED. During this project a total of 712 patients were screened and assessed by nurses. It will greatly improve patient comfort and patient flow in this, one of Canada’s busiest, emergency departments.



Lakehead Student Wins Prestigious CIHR Doctoral Award

PhD candidate Ashley Untereiner, studying under Dr. Lily Wu, won a Frederick Banting and Charles Best Canada Graduate Scholarship (worth \$81,667) in last year’s Canadian Institutes of Health Research (CIHR) Doctoral Award competition. Her breakthrough diabetes research is investigating the pathways involved in sugar metabolism, and in turn giving scientists a better understanding of abnormal metabolism. This could lead to new treatment options for controlling diabetes, including Type 2 diabetes, which is particularly high in Northwestern Ontario. Ashley came to Lakehead from the University of Saskatchewan specifically to study with Dr. Wu.



Clinical Trials Sees Significant Growth

Nothing enables research strategic to the TBRHSC like clinical trials. Over the last year, the Clinical Trials Department has seen significant growth with 79 active clinical trials overseeing 375 patients and following approximately 650 participants no longer in active treatment. New trials were launched in the Cardiac Catheterization Lab, Critical Care, Ambulatory Care, Paediatrics, and Surgical Services. We are also developing a solid reputation for our growing program. Last year, the Clinical Trials Department earned outstanding results in three large sponsor audits – a good step towards our goal of building a culture of research at TBRHSC and becoming a preferred site by industry sponsors.



Homegrown Augmented Clinical Documentation Tool in Trial

Are NOSM learners ready to code? Dr. Arnold Kim is trialling NLites, a new clinical documentation tool he developed that uses computer “coding” (context-free language) for unambiguous notes. This transforms the substantial amount of time and effort clinicians spend in documentation to automatically fulfill a wide array of medical processes including order entry, metrics gathering, and decision support. Dr. Kim is studying the adoption potential among medical learners in the Medical Clinical Teaching Unit and Hospitalist Program, and hopes to trial this approach at other institutions within two years.

Cyclotron a Symbol of TBRRI's Growing Program



Michael Campbell (left), Director of Research Operations at Thunder Bay Regional Research Institute & Director of Cyclotron Operations, with Branislav Kovac (right), Director of Project Management, Advanced Cyclotron Systems, Inc. in Richmond BC at the cyclotron manufacturing centre.

If there ever was a symbol of the TBRRI's growing research program, it's the cyclotron. It characterizes our successes, our expansion, and our plans for a sustainable research and development enterprise. The cyclotron will provide medical isotopes for Thunder Bay's research and patient care needs, as well as creating a revenue stream through the planned sale and distribution of isotopes to other parts of Canada and the United States. It represents the trust and credibility we've built over the years with our government and other funding partners who invested in this incredible piece of technology, making us one of the few research facilities in Canada that will be able to produce those specific medical isotopes most in demand.

Our first seven years have focused on building our research program: attracting scientists and physicians, equipping them with the latest technology, and building partnerships with healthcare institutions, educational institutions, and funding partners such as our government

investors and our community supporters through the Thunder Bay Regional Health Sciences Foundation's Health Sciences Discovery Fund.

We are seeing the fruits of these efforts already. Our Clinical Trials program is growing, helping patients and the community. Similarly, companies around the world are turning to the expertise of our scientists to help advance their equipment and test diagnostic/treatment options. The TBRRI has had a direct impact on Northwestern Ontario's economy as well, creating jobs and contributing approximately \$20 million each year. That will likely grow in the future as companies such as XLV Diagnostics Inc. begin to build their equipment right here in Thunder Bay. This year we are hiring a Director of Clinical Business Development to ensure those ventures succeed.

Our program has also had an impact on healthcare learners - including up-and-coming scientists - who come here to learn in the academic health sciences environment we've helped to create. Perhaps most importantly, we've helped

improve patient care for residents of Thunder Bay and Northwestern Ontario.

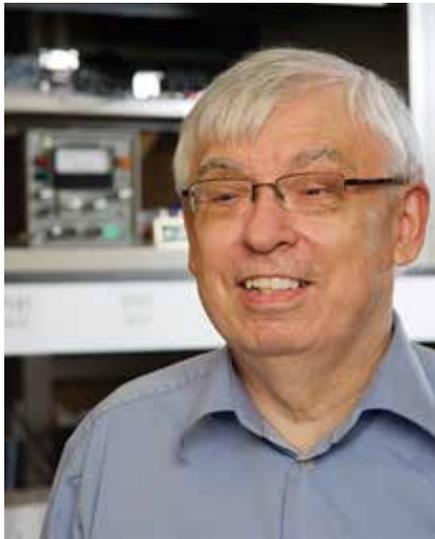
We have a solid plan to build a strong, sustainable research program focused on improving patient care and bringing new technologies to market. Building a research program in Canada is a balance, and we will always need the support of our government and community partners to move forward with specific projects and programs. It's a little like launching a ship - you plan well, you build well, you send it out to sea. It will always need support to keep sailing, but if you build it correctly from the start it will pay dividends in the future, and take you where you want to go.

So yes, the support of our partners is crucial to our success, but as our program grows we will rely less and less upon government for core funding. We are well on the way to creating a self-sustaining research model that will benefit Northwestern Ontario and beyond.



Summer School on Medical Imaging Piques Young Minds

Described as a “stunning success”, the 3rd Annual Summer School on Medical Imaging (SSMI) attracted 55 undergraduate and graduate students (as well as two high school students) to participate in the 16-week program. The students worked with Lakehead University faculty members and TBRI scientists on a number of projects in novel imaging techniques and technologies including probes to image potential biomarkers for cancers. The program ended with a two-day workshop in which students presented their findings, with the best presentations winning prizes in various categories. The program exposes students to medical imaging as a possible career path.



Lakehead/TBRI Host Prestigious Conference

Lakehead University and TBRI hosted the 16th Canadian Semiconductor Science and Technology Conference (co-chairs: Lakehead professors Drs. Alla Reznik and Dimiter Alexandrov) and the concurrent workshop “Innovations in Radiation Medical Imaging Detectors” (chair: Dr. John Rowlands, Founding Scientific Director, TBRI). The event attracted over 100 scientists and students from across Canada to promote knowledge exchange and interactions between academia and industry that use semiconductor materials and technologies. Hosting this prestigious event has helped put Lakehead University and partner TBRI “on the map” as a research centre of excellence in semiconductor technologies and, particularly, in medical imaging detector technologies.



XLV’s Next Step to Commercialization

XLV Diagnostics Inc. secured FedNor contributions in 2013 to begin work on a prototype of its state-of-the-art mammography technology. Developed by Dr. John Rowlands, TBRI’s Founding Scientific Director, the X-ray Light Valve (XLV) system provides hope for over 600 million women in the developing world who do not have adequate access to mammography services. This new technology also has the potential to provide image quality that makes images easy to analyze, manipulate, and transfer. XLV Diagnostics Inc. will create 10 new jobs in Thunder Bay and hopes to manufacture their device right here in our city in the future.



MaRS Funding Could Lead to New Transducer Technology

Drs. Oleg Rubel and Laura Curiel in collaboration with Drs. Samuel Pichardo and Kullervo Hynynen from Sunnybrook Research Institute; students Sheikh Jamil Ahmed and Jeremy Cole were awarded \$25,000 in the MaRS 2013 Medical Sciences Proof of Principle (MScPoP) Competition to further research their “Methods of Driving Polarization Inversion in Ferroelectric Materials and Devices” project. The application was submitted with assistance from Project Support Specialist Amanda Moen. In order to protect the Intellectual Property (IP), Project Support Officer Terry Fodé helped file a provisional patent last November. This research could lead to the commercial development of a transducer to improve therapeutic ultrasound.

Cancer Research an Important Part of Cancer Care

When the **Thunder Bay Regional Health Sciences Foundation** launched its Exceptional Cancer Care campaign, we identified three areas of need: diagnosis, treatment, and research.

We've had a long history of supporting research in Thunder Bay. As TBRRRI scientist Dr. Laura Curiel so succinctly put it, research is the embodiment of hope. The Northern Cancer Research Foundation (NCRF), a precursor to today's Foundation, started funding cancer research in the early 90s - the seed for today's TBRRRI. The vision from the beginning was to encourage an academic research

environment here, not just for the breakthroughs it provides but because simply having a research program can improve overall healthcare.

We see proof of that every day. The Health Sciences Foundation directly and indirectly supports cancer research efforts of TBRRRI scientists as well as physician researchers at the Health Sciences Centre. The Exceptional Cancer Care Campaign continues that mission by raising funds to help the cancer centre reach its goals, including promoting Exceptional Research at the TBRRRI. With the support of our generous donors, we are able to provide

funding for research projects.

The focus is always on patient care. The goal of the Exceptional Cancer Care Campaign is to help the cancer centre become the best in the province, so that patients in Northwestern Ontario can get the care they need closer to home. Supporting research at the TBRRRI is just one way the Health Sciences Foundation is fulfilling that goal.



Funders and Partners

Collaboration for success

TBRRRI works hand-in-hand with crucial key partners including corporate member organizations, academic, healthcare, government, 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.



Government Partners Key to Research Efforts



Michael Gravelle is Minister of Northern Development and Mines and Chair of the Northern Ontario Heritage Fund Corporation (NOHFC).



(Left to right) Oleg Rubel, Janet Northan, Laura Curiel, Gary Polonsky, Minister Greg Rickford, Roxanne Deslauriers, Robert Paterson, Boguslaw Tomanek.

Dr. Jane Lawrence-Dewar's stroke research took a giant step forward in 2013 when FedNor and Northern Ontario Heritage Fund Corporation (NOHFC) each announced funding totalling almost \$2.5 million to TBRRRI for state-of-the-art MRI and functional MRI (fMRI) equipment.

"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."

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.

The new fMRI capabilities open up other research opportunities as well

at TBRRRI and enhance the growing health sciences cluster in Northwestern Ontario. It will also expose students and learners from the Northern Ontario School of Medicine (NOSM), Lakehead University, and Confederation College to the latest MRI technologies - and may even help attract new researchers to the Thunder Bay.

This investment underlines the importance of government partners in the development of a strong and sustainable research program that promotes community economic development, enhances business development and growth, and facilitates innovation throughout the region.

The Thunder Bay Regional Health Sciences Foundation has also been a strong partner of the research program from the beginning, funding equipment and programs over the years that benefit our community by advancing treatments and technologies. As the Council of Academic Hospitals of Ontario says, investments in health research and innovation truly do make our community healthier, wealthier, and smarter.

"The TBRRRI is becoming a recognized leader in medical imaging around the world - and that would not be

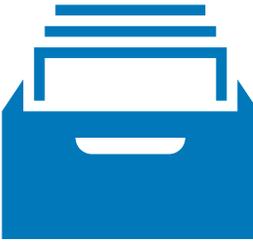
possible without the support of our government partners. These next-generation MRI units will help us build important revenue streams and advance our knowledge-based economy, and enable us to improve the quality of healthcare through excellence in patient-centred research," said TBRRRI Acting CEO Dr. Roxanne Deslauriers.



Dr. Lawrence-Dewar is investigating how the brain "rewires" itself after a stroke, reorganizing function to regain lost motor ability.

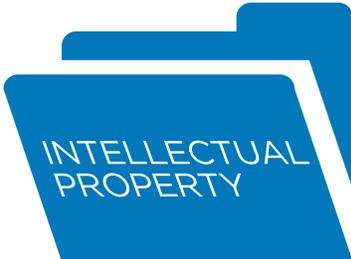
TBBRI by the numbers 2013-2014

26
Publications

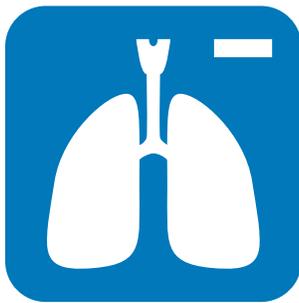
3 
Provisional
Patents filed

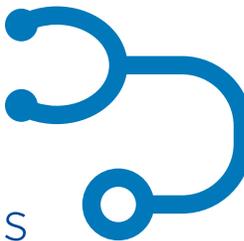
375
New
participants
in clinical
trials 

55
Students
enrolled in
Summer
School of
Medical
Imaging

6 IP
Disclosures


14
Courses
taught at
Lakehead
University
by TBRRI
scientists 



38 
Physicians
formally engaged
in research

\$1.6M In scientific grants
awarded to TBRHSC
and TBRRI



Grants Awarded in 2013-2014

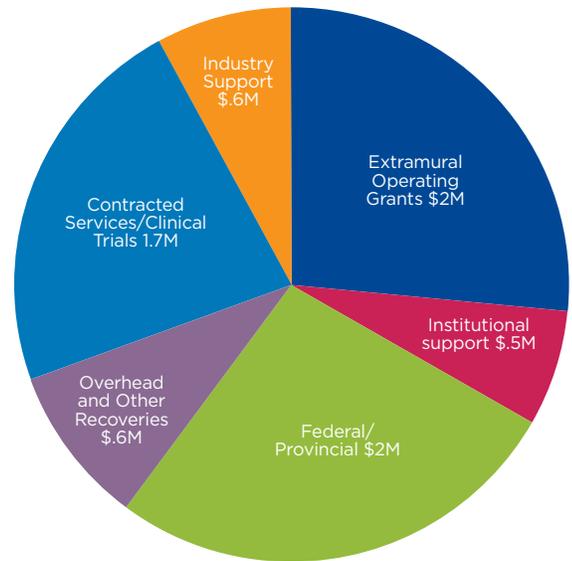
TBRI Scientists and TBRHSC Physician Researchers

Principal Investigator	Grant	Title	Amount (\$)	Term
Lily Wu	Heart & Stroke Foundation of Canada	Regulation of Adolase B Expression and Scavenging Methylglyoxal in Vascular Smooth Muscle Cells	\$415,038	3 years
Ashley Untereiner (Lily Wu's PhD Student)	CIHR Doctoral Research Award (ranked in the top 3.87%)	The Interaction of H2S and PGC-1alpha on Hepatic Gluconeogenesis in Diabetes	\$47,000	2 years
Lily Wu	Heart & Stroke Foundation: Ontario Mid-Career Investigator Award	Methylglyoxal Metabolism and Vascular Remodeling	\$320,000	4 years
Naana Jumah	Physicians' Services Incorporated Foundation	2014 Graham Farquharson Knowledge Translation Fellowship	\$300,000	2 years
Oleg Rubel (PI) Laura Curiel (Co-I) Samuel Pichardo (Co-I)	MaRS Innovation Medical Sciences Proof-of-Principle	Biaxial Driving of Piezoelectric Actuators for Therapeutic Ultrasound	\$25,000	1 year
Birubi Biman (PI) Mitchell Albert (collaborator)	NOAMA - AHSC AFP Innovation Fund	Monitoring Sputum Differential Cell Counts in Patients with Chronic Respiratory Disease	\$73,128	2 years
Eric Davenport (PI) Karen Davenport (Co-I) Mitchell Albert (Co-I)	NOAMA - AHSC AFP Innovation Fund	Tumour Trapping of 5-Fluorouracil in Vivo Using 19F MRS in Colorectal Tumour-Bearing Mice and Humans	\$50,000	1 year
Marios Roussos	NOAMA - Clinical Innovation Opportunities Fund	Regional Sepsis Patient Management Pathway	\$84,000	2 years
Ayman Hassan	NOAMA - Clinical Innovation Opportunities Fund	The Incidence of Carotid Artery Disease in Northwestern Ontario	\$49,544	1 year
Kevin Miller	NOAMA - Clinical Innovation Opportunities Fund	Early Palliative Care Referral for Non-Small Lung Cell Cancer Patients	\$9,418	2 years
Christopher Lai	NOAMA - Clinical Innovation Opportunities Fund	Validating the Formula from our Testing Phase for the Accuracy of Right Ventricular Systolic Pressure (RSVP) Obtained by Echocardiogram	\$50,000	2 years
Robert Sikorski	NOAMA - Clinical Innovation Opportunities Fund	Effect of Acute Pain Service on Postoperative Pain	\$48,070	1 year
Hassan Hassan	NOAMA - Clinical Innovation Opportunities Fund	Nasopharyngeal Bacteriology and Innate Immune Responses as an Indicator of Predisposition of Recurrent Upper Respiratory Infections among FN Children	\$43,967	1 year
Kurt Droll	NOAMA - Clinical Innovation Opportunities Fund	Efficacy of Surgical Skin Preparation Solutions in Hip Arthroplasty Surgery	\$36,567	1 year
David Puskas	NOAMA - Clinical Innovation Opportunities Fund	Non-Operative Management of Labral Hip Tears	\$50,000	2 years
Tracy Wilson	NOAMA - Clinical Innovation Opportunities Fund	Shoulder School - Education for Shoulder Patients	\$49,836	2 years
		TOTAL	\$1,651,568	

Financials

Revenue Sources

Total = \$7.5M



Funding Uses

Total = \$7.5M

