The George and Fay Yee Centre for Healthcare Innovation exists to transform healthcare in Manitoba and to promote improved access to meaningful and appropriate care. CHI is a unique entity in Canada’s health care landscape. The Centre was established as a partnership between the University of Manitoba and the Winnipeg Regional Health Authority.

CHI brings together leaders and practitioners from all disciplines in academia and practice to ensure that the latest research and evidence are translated into improved patient outcomes, enhanced patient experiences and improved access to care for Manitobans.

**OUR VISION:**
To be a catalyst for healthcare providers, health-care decision makers and healthcare researchers in Manitoba and to generate and facilitate the use of knowledge to improve the health of Manitobans within a sustainable framework.

**OUR MISSION:**
To ensure the latest research or evidence is translated into improvements to care and outcomes for patients and citizens of Manitoba.

**OUR VALUES:**
CHI strives to be innovative, collaborative, transformative, objective and sustainable.

**OUR COMMITMENT TO MANITOBANS:**
- Engaging patients as full partners in care.
- Providing healthcare professionals and policy makers with the best available evidence to make informed decisions.
- Supporting the development of innovative and cutting edge research.
- Supporting strengthened clinical care process improvements and better delivery of health care services.
- Making crucial knowledge and research findings accessible

**OUR FUNDERS:**
CHI is funded and supported by the following organizations:
- University of Manitoba
- Winnipeg Regional Health Authority
- Canadian Institutes of Health Research (Strategy for Patient Oriented Research-SPOR)
- Government of Manitoba

**CONNECT WITH US:**
George & Fay Yee Centre for Healthcare Innovation
GE706- 820 Sherbrook St
Winnipeg, MB R3A 1R9
Phone: 204.787.8707 | Fax: 204.787.7567
Web: www.chimb.ca | Twitter: @CHIMbca
Email: info@chimb.ca
“At the end of the day our research is meaningless if it does not improve the lives of patients. We are actually a chain, a chain that starts with the patient and ends with the patient.” -CHI Staff member
TABLE OF CONTENTS:

Message from Academic Director & Executive Director ........................................ 5
Manitoba’s SUPPORT Unit ......................................................................................... 7
Data Science ............................................................................................................ 8
Evaluation ................................................................................................................ 9
Project Management Office ..................................................................................... 11
Knowledge Synthesis ............................................................................................... 13
Knowledge Translation ............................................................................................ 14
Health Systems Performance ..................................................................................... 15
Clinical Trials .......................................................................................................... 15
Publications ............................................................................................................. 16
Year in Review ......................................................................................................... 17
2013-2014 was a year of significant growth and expansion for the George and Fay Yee Centre for Healthcare Innovation (CHI). The Centre was established in 2008, with the primary mandate of improving healthcare for Manitobans. It facilitates seamless collaborations between academia and practice to ensure that the best evidence and latest research guide healthcare policy development and health systems transformation. In the last year CHI further established itself as an important voice in Manitoba’s healthcare landscape, undertaking important initiatives and forming key collaborations.

CHI’s success is rooted in its multi-disciplinary, collaborative approach. The Centre houses seven unique platforms, each of which are impacting different elements of the healthcare sector. A systematic review led by the Knowledge Synthesis Platform led to changes in practice across Canada, the United States, Europe and Africa. The Evaluation Platform continues work on a region wide community health assessment; an initiative that will significantly impact strategic and direction setting priorities for our province. The Project Management Office has supported several projects that are contributing to process and quality improvement in our province, such as the INSIXTY initiative, a project addressing the Cancer Patient Journey. The Data Science Platform launched REDCap, a secure web application designed to support data capture for studies by researchers across the province.

Finally, the Knowledge Translation, Health Systems Performance and Clinical Trials Platforms continue to directly engage researchers and health professionals, whilst providing crucial training and capacity building.

This year also marked two important achievements for CHI; in February CHI was awarded an IPAC Deloitte Leadership award for excellence in healthcare. This award recognizes strategic thinking innovation and visionary leadership. Secondly, CHI was officially recognized as the home of Manitoba’s SUPPORT Unit for Patient Oriented Research.

We have laid important foundations over the course of the last year and anticipate continued growth in the future. We are committed to positively transforming healthcare by engaging with and facilitating collaborations between patients, researchers, healthcare professionals and policy makers. We invite you to join us in strengthening healthcare in our province.
“We look at what we’ve done in the past, how we can improve on it, learn from it and how we create a better future.” - CHI staff member
PATIENTS FIRST: MANITOBA’S SUPPORT UNIT

CHI houses Manitoba’s Support for People and Patient-Oriented Research and Trials (SUPPORT) Unit—a research infrastructure that provides guidance, support and services to researchers and clinicians looking to improve the quality and quantity of clinical research in the province by accelerating the integration of research findings into practice. SUPPORT Units are a part of Canada’s Strategy For Patient Oriented Research (SPOR). This strategy is intended to improve health outcomes and enhance patients’ healthcare experience by integrating research evidence at all levels in the health system. CHI houses seven unique platform each committed to achieving this mandate.
CHI’s Data Science Platform includes data analysts, biostatistical consultants, methods consultants, research data specialists and computational biologists. The platform facilitates the development, management, analysis, and linkage of clinical, administrative and other data resources for patient oriented research. The Data Science Platform works in close consultation with the Manitoba Centre for Health Policy to achieve its mandate.

Over the course of the last year this platform established a broad range of activities related to its mandate of research, consultations, collaboration, and training. The platform collaborated on approximately 30 partnerships and projects, providing assistance at every stage of the research process, from planning a study, through collecting data and statistical analysis, to the interpretation of results.

Additionally, the platform offered training and educational opportunities to researchers, including seminars and workshops on statistical methods, research design topics, and data management tools and practices.

In early 2014 the Biostatistical Consulting Unit, formerly housed within the University of Manitoba’s Department of Community Health Sciences transitioned into the Centre for Healthcare Innovation as part of Manitoba’s SUPPORT Unit. Additionally, the Platform implemented REDCap, a Research Electronic Data Capture Management system developed by Vanderbilt University to provide researchers with a highly secure, centralized, audited environment to store manage and analyze research data.

With support from biostatisticians in the platform, the CPEG (Canadian Pediatric Endocrine Group) Working Committee for National Growth Charts has re-analyzed and revised the WHO Growth Charts for Canada, to create a better tool for tracking growth of Canadian children at both the individual and population level. In February, the Public Health Agency of Canada (PHAC) officially adopted these revised charts to replace the 2010 WHO Growth Charts for Canada. Training material is currently being developed, and the new charts are being rolled-out across the country. In March, the group also received the Canadian Pediatric Society Noni MacDonald Award. The award recognizes an article, published in Paediatrics & Child Health, which has positively affected the practice of paediatric medicine. This year’s award goes to The Canadian Pediatric Endocrine Group extension to WHO growth charts: Why bother?

Biostatisticians in the Platform have introduced a series of workshops entitled Statistical Methods for Clinical Investigators, the first of which was on the topic of Propensity Scores: Making Sense of Non-randomized Observational Data. The workshop was well-received; it will be offered again in fall 2014 and additional workshops will be added to the series.

With the Royal College of Physicians and Surgeons renewed focus on training in research methodologies for medical residents, the Data Science Platform is actively cooperating with the Office of the Dean of Post-graduate Medical Education (PGME) and the College of Medicine’s Clinical Investigator Program (CIP) to develop a core curriculum in statistical methods to support residents seeking to fulfill the new CANMeds Research Competency Requirements. A series of 3 workshops is being developed to cover key topics, such as study design and sample size calculations, introduction to data analysis through the generalized linear model, and statistical computing.

The implementation of REDCap has been met with significant interest from the research community. From January to March 2014, eight hands-on introductory and intermediate REDCap workshops were led by platform members Dennis Bayomi and Dr. Upal Nath. These workshops were attended by 50 principal investigators, research coordinators/associates, and graduate students.
EVALUATION

The Evaluation Platform comprises the Winnipeg Regional Health Authority’s embedded Research and Evaluation Unit—a unit which has provided evidence to inform decision making within the Winnipeg Regional Health Authority for almost 10 years. The span of the Platform is wide as it conducts health services, health care system and community/population health research and evaluation to drive evidence-informed decision making.

The Evaluation Platform includes six PhD educated health services researchers and another four research associates at the masters level. The team comes from a variety of disciplines including social psychology, medicine, pharmacy, speech language pathology, nursing, social work and economics. The Evaluation Platform’s products and services include:

1. Critical appraisal and evidence synthesis, with a specific focus on rapid reviews;
2. Community health assessment as an ongoing process of regional indicators of health, community area profiles, in-depth reports on special issues and community engagement;
3. Research which supports the Region’s strategic objectives;
4. Evaluation which is done on consultation basis often using realist review, a developmental approach (at the beginning of a programmatic change or intervention) and use of user-friendly frameworks like RE-AIM (reach, effectiveness, adoption, implementation and maintenance or sustainability) to describe impact.

All four of these foci include opportunities for capacity building with its respective client(s).

Over the course of the last year the platform continued its diverse consultation with clients from across the Winnipeg health region and within the province in all four areas of its work. In the area of critical appraisal the platform completed several rapid reviews, including summaries on compassion fatigue, waterless bathing choices, sub-acute units and effective health promotion strategies for early years’ nutrition. In the category of full evidence synthesis, the platform completed a CIHR-funded knowledge synthesis e-Mental Health Services for children, youth and adolescents, a Cochrane protocol for acute care surgical services consolidation and a review of “asking” language and ethnicity questions at the point of patient/client registration.

The platforms community health assessment (CHA) efforts will peak in December 2014 when the Winnipeg health region’s CHA report is due to the Government of Manitoba. Over the past two years the platform members have been deciding on province-wide indicators, the format in which they will be reported on and consulted interpretation of data which has been produced. The report will include over 80 health assessment indicators organized into different areas of foci amenable to health planning activities. For example, the platform report by 12 community areas and 25 neighborhood clusters on demographics, health status indicators such as premature mortality and infant mortality; social determinants of health, e.g. immunization and screening behaviours, health risk factors such as smoking, physical activity and nutrition; and, health system performance indicators across the system. This past year the platform focused on community consultations and how best to develop community-specific profiles. The platform will be continuing this work into the 2014-2015 year. Finally, the platform contributed substantially to the equity action plan report, “Health for All” by producing the indicators of health inequity across Winnipeg.
From a research perspective, the platform’s preeminent work for 2013-2014 was Dr. Sara Kreindler’s retrospective review and learning’s of patient-flow initiatives over the past 13 years. Her findings have been widely used by the region and are continuing to form the basis of changes to emergency department and inpatient length of stay across the region. Yang Cui’s work on the development and validation of a prediction model for all-cause hospital readmissions will help to inform the region and province on its implementation of ‘hospital home’ teams. Some in the platform continue to be involved as investigators on Manitoba Centre for Health Policy’s Programmatic Grant in the Health and Health Equity operating grant: PATHS Equity for Children. Over the last year, team members have led an evaluation of in school clinics on teen pregnancy and sexually transmitted infections using Manitoba’s administrative databases. In the coming year platform members will be preparing several explanatory case studies on policy and program interventions for children and their effect on equity.

The platform offers an in-depth consultation service regarding program and policy evaluation. Subsequently, in 2013-14 the team was involved in a variety of evaluation initiatives. These include evaluations of the Birth Centre, the Mental Health Crisis Response Centre, (provincial) Pre-natal connections (women travelling for birth), a Heart and Stroke initiative called ENCOURAGE which placed a clinical kinesiologist in primary care, advanced care planning, the Bell Hotel (housing-first model), P.I.E.C.E.S.® (dementia education & training model), (provincial) Cancer Patient Journey Initiative (IN SIXTY) and (provincial) Towards Flourishing (early childhood intervention).

HIGHLIGHTS, 2013-2014

• 4 ongoing research studies
• 7 Presentations
• 7 Systematic Reviews or Rapid Reviews
• 10 Program Evaluations
• 18 Peer Reviewed Publications
PROJECT MANAGEMENT OFFICE

CHI’s Project Management Office (PMO) has a vast mandate. The PMO aims to advance CHI’s strategy to promote patient engagement in care and to integrate Patient Oriented Research into clinical practice and care models.

Furthermore the PMO is committed to carrying out projects identified as strategic priorities for the Winnipeg Health Region. The PMO supports, develops and implements projects related to clinical service delivery and in so doing contributes to enhancing the patient experience throughout the region. Over the course of the last year the PMO has actively engaged in and supported over 46 projects. The Projects vary in scope and nature, ranging from short term interventions to relatively long term projects focusing on complex system transformation. Additionally the PMO offered extensive training and capacity building to healthcare professionals including Project Management, LEAN, FMEA and Change Management training.

HIGHLIGHTS, 2013- 2014

• 2 full day FMEA training workshops
• 4 seminars (LEAN, Change Management and Introduction to Project Management)
• 5 consultations
• 5 full day Project Management Workshops
• 46 Projects
PROJECTS SPOTLIGHT

Cardiac Catheterization Flow Optimization
This project focused on the design and implementation of optimal scheduling and throughput, focusing on the improvement of patient access to care. As a result, wait times for patients waiting for Cardiac Catheterization were reduced from 5 to 6 weeks to 1.5 weeks for urgent outpatients, and from 8 months to 3 weeks for elective outpatients.

Mental Health Crisis Response Centre
Project Managers worked with key stakeholders in the region to support the development and implementation of operational processes necessary to support the timely opening of the Mental Health Crisis Response Centre (CRC). The CRC provides a 24 hour/day, 7 day/week primary access point for individuals in a mental health crisis in need of urgent assessment and treatment.

Cancer Patient Journey Initiative / In Sixty
This project is focused on improving processes to reduce the time from suspicion of cancer to first treatment. The goal is to reach wait times to no longer than 60 days, in a sustainable manner that also improves the quality of the cancer patient experience.

Women’s Hospital Redevelopment:
Members of CHI’s PMO are currently supporting the extensive Women’s Redevelopment Project. The team are developing and implementing efficient and effective operational processes reflecting industry standards and best practices in support of the timely opening of the new women’s & newborn hospital.

CHI’s Project Management Office relies on a multi-disciplinary, collaborative approach. Project Managers and Process Engineers work together to successfully implement interventions across our province.
KNOWLEDGE SYNTHESIS

CHI’s Knowledge Synthesis (KS) Platform aims to increase researchers’ capacity to synthesize knowledge for informing public policy, improving service delivery and optimizing Manitobans health. Over the course of the last year the Platform completed several reviews, produced ground breaking publications and continued to provide consultations, training and capacity building to Researchers in Manitoba.

In 2013 the platform led a systematic review and meta-analysis evaluating the use of hydroxyethyl starch (HES) in critically ill patients, and found “clear and irrefutable evidence that hydroxyethyl starch was causing death.” The paper was published in the Journal of the American Medical Association (JAMA) and received media attention around the world, resulting in changes in practice in North America, the European Union, Great Britain and South Africa. A second study analyzing health benefits of probiotics on babies in utero or up to 12 months old, was conducted by KS platform members Ahmed Abou-Setta and Ryan Zarychanski. The subsequent review was accepted for publication in the prestigious British Medical Journal.

2014 also marked the second offering of the Systematic Review and Meta-Analysis Course; a course designed to teach participants to summarize and analyze data from multiple studies and apply findings to ongoing research, policy and decision making and direct practice. The course is offered to graduate students at both Masters or PhD level, along with clinicians (including MD’s nurses and allied health professionals). The systematic Review and Meta-Analysis course clearly demonstrates CHI’s commitment to equipping researchers in Manitoba with crucial skills. Course participants build their research capacity and are better equipped to positively impact health care and health policy decision making. Reviews produced by participants have influenced healthcare in Canada and abroad, demonstrating the value of the course.

The Knowledge Synthesis Platform will continue to offer the Systematic Review and Meta Analysis course annually to a limited number of students. This format will ensure that students have the opportunity to learn from experts and in the field and benefit from hands on instruction.

Additionally, a series of 5-day workshops will be offered to participants who are unable to commit to an entire semester and special seminars on specific topics will be offered throughout the year.

Similarly to other platforms within CHI, 2013-2014 has been a year of growth and expansion for the Knowledge Synthesis team; a trend which is anticipated to continue in the next year. Review Managers, research assistants and a librarian are expected to join the team. These additions will result in expanded capacity and contribute significantly to the development of valuable expertise, putting Manitoban researchers on the global map.

HIGHLIGHTS, 2013-2014

- 1 practice guideline (Adult Enteral Nutrition - Starting a Collaborative Conversation)
- 2 methodological projects
- 8 publications (including 2 Cochrane reviews, and publications in BMJ and JAMA)
- 20 consultations

“We’re already proving that we can transform healthcare for the better in Manitoba and that work done at CHI can be adapted and applied in different contexts all over the world.” - CHI staff member
KNOWLEDGE TRANSLATION

This year the Knowledge Translation platform expanded to include new members of staff and a wider range of services.

The KT platform collaborated with the Manitoba Centre for Health Policy (MCHP) on the award-winning Need To Know Team. Nationally, the KT Platform became involved with the Canadian Network for Child and Youth Rehabilitation (CN-CYR) through ongoing participation on the Knowledge Translation Workgroup. The platform also recently became part of the newly formed KT Working Group, which links KT staff from each of the established and developing CIHR SPOR SUPPORT Units across Canada.

The KT Platform continues its work developing and piloting a framework for patient and family engagement— an initiative developed to assist researchers in accessing tools and resources to meaningfully involve patients in all stages of their research. In addition, the platform offers KT support to Translating Emergency Knowledge for Kids (TREKK) - a national knowledge mobilization initiative supported by the Government of Canada through the Networks of Centre’s of Excellence.

Throughout the year the platform offered extensive training and capacity building opportunities such as a half day media training workshop titled Tools for Translating Research Through the Media, and facilitated participation in monthly national KT webinars delivered through KT Canada.

HIGHLIGHTS

- Coordination of 1 CAPHC / CN-CYR webinar, featuring Dr. Roberta Woodgate
- 1 workshop (Tools for Translating Research Through the Media)
- 1 video produced
- 2 articles published
- 3 grants awarded:
  - Pre-natal education regarding prevention of deformational plagiocephaly: (Winnipeg Children’s Hospital Advisory Council)
  - An Integrated Knowledge Translation Approach to Address Knowledge Gaps in Hirschsprung’s Disease: Manitoba Institute of Child Health
  - Reducing Wait and Improving Referrals to physiotherapy – Evaluation and Dissemination of a Quality Improvement Project: Health Sciences Centre Allied Health Research Award.
- 12 Monthly KT Canada webinars
- 14 grant consultations
- 18 External Presentations.
HEALTH SYSTEMS PERFORMANCE

CHI’s Health System Performance (HSP) Platform is committed to developing and implementing solutions that promote access to appropriate, effective and safe healthcare for all Manitobans. This year, the platform welcomed Dr Michael Moffat as a senior advisor. He will assist CHI in promoting the principles of Choosing Wisely Canada, a campaign designed to help physicians and patients engage in conversations about unnecessary tests, treatments and procedures. This will assist patients and their providers in making effective choices that will ensure sustainable, high quality care.

As part of the Choosing Wisely collaboration, CHI is currently partnering with Diagnostic Services of Manitoba (DSM) on several projects, including improving implementation and sustainable adoption of standardized pre-operative testing guidelines, reducing unnecessary vitamin D testing, and improving deep venous thrombosis diagnosis through appropriate use of ultrasound and d-dimer tests. The pre-operative testing guideline project has also been submitted to the Manitoba Patient Access Network (MPAN) for consideration of 2 year funding in the order of $200 000.

The HSP platform continues to work on implementation of our Support Unit’s demonstration project to reduce the incidence of fragility fractures in high risk patients. This project, which proposes to improve the way fragility fracture patients are assessed and treated to prevent future fractures, has been submitted to the Manitoba Health Resource Council’s competition for Health Services Research.

HSP continues to remain actively engaged with researchers across Canada. One of these partnerships, with the Western Canada Waitlist Group (WCWL), has resulted in the awarding of $85 870 in CIHR funding from the Healthcare Renewal Policy Analysis Grant to facilitate the development of policy options around central intake services to improve access to and quality of medical care. Part of this grant is supporting meetings that engage patients, providers, administrators and government in a collaborative undertaking to facilitate the adoption and uptake of central intake models to deliver specialist care.

This year saw completion and submission of the HSP’s first manuscript. This work examines the effectiveness of region wide interventions aimed at improving the timeliness of hip fracture surgery. This undertaking involved several current and past CHI members, and is currently under consideration by the Canadian Medical Association Journal.

CLINICAL TRIALS

The Mandate of the Clinical Trials Platform is to support researchers in Manitoba to engage in high quality, practice changing, and patient-oriented research by supporting clinical trials. CHI welcomed a new Clinical Trials Manager & Intake Coordinator, Connie Feschuk, in 2013. Under Connie’s leadership the platform implemented the first phase of work in launching CHI’s clinical Trials platform. The platform conducted extensive consultations with stakeholders and formed a working group with these stakeholders to develop a provincial road map for conducting trials in Manitoba.

The platform now offers researchers and their staff, through the N2 organization, over 30 research related SOPs and CITI training in good clinical practices in research. The platform is focusing on developing expanding services to include clinical research mentorship and orientation, methodological input into investigator-driven clinical research, and project management support for clinical trials.
SELECT PUBLICATIONS

DATA SCIENCE:


KNOWLEDGE SYNTHESIS:


16 participants graduated from CHI’s Academic Health Sciences Leadership Program in March, 2014. The program identifies and mentors future health leaders, with a focus on developing skills to assist individuals to prepare for leadership roles while understanding the dynamics of the healthcare system and academic environment. The program develops critical, creative and lateral thinking individuals who are able to lead academic health sciences units, while fostering organizational growth, learning and innovation. 2013-2014 graduates described the program as engaging and invaluable.

In February 2014, Federal Health Minister Rona Ambrose and Manitoba Health Minister Erin Selby were joined by Dr. Alain Beaudet, President of the Canadian Institutes of Health Research (CIHR), and Dr. Digvir Jayas, Vice-President Research, University of Manitoba, to announce the launch of the Manitoba SUPPORT Unit for patient-oriented research, housed within CHI. The support Unit received $22.4 million over 5 years.

“The SUPPORT Unit will provide unprecedented, province-wide support to healthcare researchers and clinicians through the George and Fay Centre for Healthcare Innovation that will foster patient engagement, advance the quality and quantity of clinical research within Manitoba, and ultimately improve patient care,” said Dr. Terry Klassen, Academic Director of CHI.

In early 2014 CHI was awarded an IPAC/Deloitte Public Sector Leadership Award for exceptional leadership in Canada’s healthcare sector. CHI was awarded the silver medal in a category including Saskatchewan’s Ministry of Health (gold) and the Central Community Care Access Centre in Toronto, (bronze).

According to award organizers, winning projects were nominated for their strategic thinking, innovation and visionary leadership.

CHI was recognizes for outstanding leadership and taking bold steps to improve Canada, through advancements in public policy and management.

“Patients First” is a phrase repeated consistently individuals across platforms at CHI. Improving access to healthcare, the quality of care and meaningfully engaging patients are central elements of CHI’s mandate; CHI has demonstrated commitment of meeting these goals and creating meaningful change in Manitoba. Be it through innovative projects, such as a the Massive Transfusion Project which is facilitating complex system change within Winnipeg’s Health Sciences Centre, or through providing world-class research data management tools such as REDCap,

CHI is changing the face of healthcare in Manitoba. In the coming year CHI commits to continuing to meaningfully engage patients and promote innovations in our healthcare systems that will positively impact Manitobans.

“I’ve already seen so much positive change in our healthcare system. Engaging Patients creates a better, stronger health care system.”- Member of parent advisory group