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This was another pivotal year for the George and Fay Yee Centre for Healthcare Innovation (CHI). The past 12 months have been a period of growth, with the foundation we’ve built over the past two years yielding results that have been seen throughout Manitoba’s healthcare landscape.

The Centre engages in hundreds of collaborations and capacity development events a year. We’ve seen research transformed into life-changing technology, with CHI’s researchers involved in the development of the HIRT? (Hemophilia Injury Recognition Tool) app, the world’s first self-management app for people with Mild Hemophilia, and the development of a web application for monitoring pediatric growth and identifying aberrant patterns, which will be available to families and clinicians across the country. A cross-platform collaboration also saw the implementation of a new Massive Transfusion protocol at the Health Science Centre that sped up the delivery of blood to patients needing massive transfusions, reducing lab sample spinning times from 15 minutes to 4 minutes and contributing to an overall system change.

Work has also begun on our Patient Engagement Strategy. Recognizing the need for a respectful, inclusive and co-ordinated approach to building capacity for public involvement in health research, CHI is taking important steps toward a best practices framework that is locally responsive and embedded within research and community, contributing to the advancement of the science of patient engagement.

We’ve also continued to forge strategic partnerships at local, provincial and national levels. We look forward to expanding partnerships and collaborations with Research Manitoba, the Province of Manitoba and the Canadian Institutes of Health Research as we extend our services to healthcare organizations and researchers across Manitoba. We continue to work with Translating Emergency Knowledge for Kids (TREKK), EvidenceNetwork.ca, Children’s Hospital Research Institute of Manitoba (CHRIM), Diagnostic Services of Manitoba (DSM), ManitobaCPD.com and Canada’s Strategy for Patient Oriented Research (SPOR) to identify the best opportunities available to reach our goals.

CHI remains committed to positively transforming healthcare by engaging with, and facilitating collaborations between, patients, researchers, healthcare professionals and policy makers. Along with our founding organizations, the Winnipeg Regional Health Authority (WRHA) and the University of Manitoba (U of M), we invite you to join us in strengthening healthcare in our province and delivering lasting solutions to Manitobans.
The George and Fay Yee Centre for Healthcare Innovation is 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.

Who We Work With

- Patients
- Healthcare Leadership
- Clinicians
- Researchers
- Policy Makers

Our Commitment to Manitobans

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

Sponsoring Organizations

- University of Manitoba
- Winnipeg Regional Health Authority
- Canadian Institutes of Health Research (Strategy for Patient Oriented Research-SPOR)
- Government of Manitoba
Manitoba Chair in Health System Innovation

Manitoba Research Chair in Algorithms for Administrative Databases

Canadian Research Chair in Pharmacoepidemiology & Vaccine Evaluation

Canadian Institutes of Health Research (CIHR) New Investigator Salary Award

13 new courses and workshops

Manitoba Chair in Health System Innovation

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Canadian Research Chair in Pharmacoepidemiology & Vaccine Evaluation

Canadian Institutes of Health Research (CIHR) New Investigator Salary Award

13 new courses and workshops

Canadian Wireless Telecommunications Association (CWTA) Connected to the Community Award

216 collaborations
The Evolution of CHI

Since 2011, the Centre for Healthcare Innovation has:

- Evolved its mandate to align with the objectives of the Strategy for Patient Oriented Research (SPOR).
- Mobilized resources to position itself as a catalyst for healthcare innovation in Manitoba, and generator and facilitator of knowledge to improve the health of Manitobans within a sustainable framework.
- Grown synonymous with the Manitoba SUPPORT Unit.

What is the objective of SPOR?

The objective of SPOR is to foster evidence-informed health care by bringing innovative diagnostic and therapeutic approaches to the point of care, so as to ensure greater quality, accountability, and accessibility of care.

What is a SUPPORT Unit?

Support for People and Patient-Oriented Research and Trials (SUPPORT) Units are local multidisciplinary clusters of specialized research, policy, and patient resources and perspectives. SUPPORT Units:

- Promote collaboration in patient-oriented research
- Lead reforms to address local healthcare needs
- Lead and facilitate healthcare decision-making
- Foster the implementation of best practices

As of May 2015, CHI features over 80 staff across 7 platforms aligned with SPOR: Clinical Trials, Data Science, Evaluation, Health Systems Performance, Knowledge Synthesis, Knowledge Translation, and Project Management. Patient Engagement and Capacity Building are key areas of focus across all platforms.

CHI: a Timeline

November, 2008
George and Fay Yee gift $2.5 million to the University of Manitoba to create the Centre for Healthcare Innovation (CHI)

2008 - 2011
Dr. Luis Oppenheimer & Dr. Dan Roberts lead the Centre as an academic home for healthcare improvement science and system design

2011
Dr. Terry Klassen is appointed as Academic Director of CHI

2011
CHI’s vision and mission are redefined to align with the emerging pan-Canadian Strategy for Patient Oriented Research, with strong support from various provincial research, policy & health systems stakeholders, including the Winnipeg Regional Health Authority (WRHA), the University of Manitoba, Government of Manitoba, and Research Manitoba

2012 - 2013
Resources are reallocated to CHI and leadership is appointed to ensure a quick ramp up in anticipation of a successful SUPPORT Unit grant

2013
Manitoba SUPPORT Unit grant application is submitted

May 1, 2013
Grant is approved and the Manitoba SUPPORT Unit is established

As of May 2015, CHI features over 80 staff across 7 platforms aligned with SPOR: Clinical Trials, Data Science, Evaluation, Health Systems Performance, Knowledge Synthesis, Knowledge Translation, and Project Management. Patient Engagement and Capacity Building are key areas of focus across all platforms.
CHI’s Data Science (DS) platform, comprising the Biostatistical Group, Computational Biology and Bioinformatics Group and the Clinical Research Data Group, facilitates the development, management, analysis and linkage of clinical, administrative and other data resources for patient-oriented research. The platform works in close collaboration with the Manitoba Centre for Health Policy to achieve its mandate. The platform’s faculty, staff and students have backgrounds in statistics and biostatistics, computer science, information management, bioinformatics, computational biology, public health, pharmacoepidemiology and health services research.

Translating Research into Action
The DS platform was recently awarded a contract to develop on-line tools for monitoring pediatric growth based on the new 2014 WHO Growth Charts for Canada. The contract requires the development of a web application for monitoring growth and identifying aberrant patterns, which will be available to families and clinicians across the country.

Platform members worked with Manitoba Health, Healthy Living and Seniors to develop provincial, First Nations and regional health authority population projections to 2042, to inform health region healthcare delivery planning.

Applied Health Services Research Grant
Dr. Depeng Jiang was awarded a 2014 Applied Health Services Research Grant from Research Manitoba to support his research project entitled ‘The PAX Program in Manitoba: A Positive Approach to Promoting Mental Health and Wellbeing’. This project will extend the evaluation of the impact of the PAX program by examining its longer-term outcomes, including educational, mental health and social outcomes as children grow up in Manitoba. This focus area is important to the health systems in Manitoba and supports collaborations between policy makers, service providers and researchers interested in working together to address health system challenges.

Junior Investigator Grant Panel Travel Award
Dr. Pingzhao Hu has received a Junior Investigator Grant Panel Travel Award from the Canadian Cancer Society Research Institute. This unique opportunity will provide members with an “inside look” at how research grants are reviewed in order to help structure their own grant proposals in the future.

Dr. Hu also received a Visiting Scientific Researcher Travel Award to attend the Thematic Program on Statistical Inference, Learning and Models for Big Data, The Fields Institute, University of Toronto.

Thematic Program Workshop on Big Data in Health Policy
Dr. Lisa Lix, Director of DS, developed and led the five-day Thematic Program workshop on Big Data in Health Policy, which was held from March 23-27, 2015 at the Fields Institute, University of Toronto. She brought together a diverse range of junior and senior investigators who offered short talks and half-day workshops on causal inference in health policy research. Dr. Lix was funded by an Institute Community Support Travel Award from the Canadian Institutes of Health Research’s Institute of Population and Public Health to travel to the Fields Institute.

International Society for Quality of Life Research Top Poster Award
Dr. Lisa Lix was the recipient of the International Society for Quality of Life Research Top Poster Award for her research entitled ‘Differential Item Functioning in the SF-36 Physical Functioning and Mental Health Sub-scales: A Population-Based Analysis from Canada,’ which was presented at the Society’s annual meeting in Berlin, Germany in October 2014.

Highlights
• 47 workshops completed
• More than $15M in research funding support
• 56 conference presentations
• 69 peer review papers
Applied Longitudinal Data Analysis Workshop
CHI offered a three day workshop hosted by DS: Applied Longitudinal Data Analysis in April. By building on the familiarity with standard regression models, this workshop examined the theory of mixed models in longitudinal studies, including a hands-on opportunity to use real data to build and interpret a multilevel model using SAS in a computer lab.

Propensity Scores Modeling Workshop
Randomized, controlled trials remain the gold standard in medical research. Nevertheless, with the increasing availability of administrative data and ‘natural experiments’ in health policy, clinical investigators must be prepared to interpret and analyze observational data arising from non-randomized trials and quasi-experimental study designs.

Each session in this course is intended to support investigators as they design and interpret such trials. The focus is on the application of propensity score methods to account for the selection biases that can confound such studies, making it possible to analyze observational data as if they arose from a randomized trial.

CIHR STAGE International Speaker Seminar Series
The DS platform hosts a CIHR STAGE (Strategic Training for Advanced Genetic Epidemiology) seminar series aiming to expose trainees to high-caliber international research while fostering a cohesive research community of genetic epidemiologists, statistical geneticists and bioinformatician in Canada. Previous topics have included Genome-Scale Molecular and Computational Methodologies and Technologies and Identifying Personal Microbiomes Using Metagenomic Codes.

Practical Biostatistics Workshop Series
Offered by the Biostatistics Group in DS, these workshops target the educational needs of residents and fellows in the College of Medicine. The series focuses on practical issues of research design and data analysis and consist of three lecture/laboratory sessions on the following topics:
• Study Design, Sample Size and Power Calculations
• Introduction to Data Analysis: The Generalized Linear Model
• Introduction to Statistical Computing in R

Advanced Statistical Methods for Clinical Investigators Workshop
The Biostatistics Group also hosts a series of training workshops focused on Advanced Statistical Methods for Clinical Investigators. In the past year, these multi-day workshops have covered the following topics: Propensity score methods for non-randomized, observational data, hierarchical linear models and missing data methods.

Biostatistical Open House
To better support residents and fellows as they design and analyze their own research projects, DS offers medical residents a chance to sit down with 5 of our statistical consultants in an informal, open-house setting. By discussing their ideas with more than one consultant, medical residents were able to develop a better understanding of the study designs and analytic methods that could be applied to their specific research hypotheses. Four such workshops have been held and will become a regular part of the Postgraduate Medical Education (PGME) curriculum in 2015-16.
The Knowledge Translation (KT) platform focuses on both the science and practice of knowledge translation and is also responsible for the SUPPORT Unit patient engagement strategy. To address these important areas, the KT team has grown over the past year to include a wider range of expertise. New platform members include Laurie Ringaert, KT Manager; Dr. Kathryn Sibley, KT Scientist; Courtney Bell, Research Assistant; Patrick Faucher, KT Media Specialist; Carolyn Shimmin, KT Coordinator; and Amanda Osorio, Training, Education and Event Coordinator. Their combined expertise has allowed for the platform to expand to offer consultation and services in the areas of:

- Implementation strategies
- Implementation research
- KT training
- KT evaluation Strategies

- KT media (infographics, videos, posters, etc)
- Patient engagement strategies
- Physician engagement strategies

World's First Self-Management App for People with Mild Hemophilia Launches
Dr. Kristy Wittmeier, KT Director, worked with a multi-disciplinary team from the Health Sciences Centre, the Saskatoon Health Region, the University of Saskatchewan and MITACS to develop an app called HIRT? – Hemophilia Injury Recognition Tool - that helps men with mild hemophilia identify when a musculoskeletal injury might require medical attention.

The app assists users to assess their injury, explains first aid management and provides an alarm to remind the person to reassess their symptoms at regular intervals for up to 2 days post injury. Based on user input, HIRT? will also suggest when an individual should seek medical care, includes contact information for every Hemophilia Treatment Centre across Canada, and allows the individual to directly dial their closest treatment centre when deemed necessary.

The HIRT? app was recently awarded the Canadian Wireless Telecommunications Association Connected to the Community Award. The award honors outstanding organizations that have partnered with Canada's wireless industry to improve the lives of Canadians.

KT Canada
Manitoba, as an official node of KT Canada, participates in monthly webinars featuring unique and innovative KT related projects from across Canada. Dr. Terry Klassen, CHI’s Academic Director, is recognized as the Lead of the Node with Carly Leggett, KT’s Knowledge Translation Coordinator assuming the role of Coordinator. The node, called KT Manitoba, is undergoing exciting changes to understand and respond to the need for networking and collaboration around KT in the province.

Partnering with Patients on Research:
How a Social Media Campaign is Informing Healthcare Research in Winnipeg
The Knowledge Translation platform was also involved in a parent-led project centering on a social media campaign to improve resources and care for children affected by Hirschsprung's Disease (HD).

Liz Crawford, a mother of a child with HD, started the campaign in 2011. She created an online community using Twitter, Facebook and a personal blog to support families living with disease. This community has grown to reach over 28 countries and has a potential audience of over 100,000 people.

She has since partnered with clinicians and researchers, and together this team is working to understand the knowledge needs of patients and caregivers in this community related to the day to day management of HD, as well as the knowledge needs of pediatric surgeons. Patients and their families are engaging directly in this parent-led project through social media to help inform both research priorities and HD treatment protocols.
Research Study Examining Factors Influencing KT Among Health Researchers
Funded by the University of Manitoba’s University Research Grant Program, Dr. Kathryn Sibley is looking at the need for active strategies to engage health researchers in practicing KT that are tailored to meet their needs. Titled ‘Understanding Factors Influencing the Practice of Knowledge Translation Among Health Researchers in Manitoba,’ the study aims to understand the experiences of Manitoba health researchers in conducting KT in their work, and to identify their perceived needs for support to sustain and increase their participation in KT.

Highlights
• 5 publications including an invited editorial
• 3 presentations
• 2 grants awarded (CIHR and U of M)
• 3 workshops

Clinical Trials

Our Clinical Trials platform supports Manitoba’s researchers engaging in high quality, practice changing, patient-oriented research by supporting clinical trials in Manitoba. We also assist with industry sponsored clinical trials, investigator initiated trials and epidemiological studies.

In August 2014, Dr. Salah Mahmud joined the Clinical Trials platform as the Director. The platform continued to build the team, adding Dr. Xibiao Ye as the platform epidemiologist and Brendon Foot as a Project Manager. As team members are added to the team, they continue to connect with investigators, departments and organizations to determine their needs surrounding clinical research, using these encounters to develop the platform’s strategic plan for the coming year.

Clinical Trials Roadmap
The platform has developed a detailed roadmap comprised of the steps required to move research from conception of a research idea to conducting a clinical study. A comprehensive list of site locations, site requirements and institutional approvals required to begin a clinical research study or trial has also been developed.

CRINGe Speaker Series
The CRINGe (Clinical Research Information and Networking Group) Speaker series is aimed at clinical research investigators, managers, coordinators and assistants and consists of short clinical research presentations where participant can hear from, and ask questions of, experienced researchers; meet others working in clinical research; and suggest topics for future presentations. Past topics have included U of M Research Ethics Board Repeat Findings, PI Roles and Responsibilities and Intellectual Property Protection and Partnering with Industry.

Hacking Health Award
CHI’s Dr. Xibiao Ye has been awarded the Prize for Innovation at the 2014 Hacking Health event. Hacking Health is Winnipeg’s first ever weekend-long Hackathon bringing together the Health, Graphic Design, and New Media Industries to build prototypes and problem-solve new ways to deliver healthcare.
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. It utilizes process and quality improvement methods and clinical indicators to redesign and strengthen the healthcare system to ensure it is focused on meeting the needs and producing the best outcomes for patients.

Research Manitoba’s Applied Health Services Research Grant
Dr. Sara Kreindler, along with Dr. Eric Bohm and members of the Evaluation platform, received the 2014 Applied Health Services Research Grant from Research Manitoba entitled ‘Why is Soft Integration So Hard? Assessing and Improving System-Level Strategies for Primary Care Renewal.’ Supporting applied health services research, this focus area is important to the health system in Manitoba and supports collaborations between policy makers, service providers, and researchers interested in working together to address health system challenges.

Partnership for Health System Improvements
CHI’s Dr. Eric Bohm and Zaheed Damani collaborated with Michael Rachlis to host a one-day workshop that explored policy options for Central Intake Models. Interest generated by the workshop led to the development of a webinar on Central Intake Models, with both events supported by a Health Policy Renewal Grant from CIHR.

Studies Currently Underway
- Funded by Research Manitoba, a team including researchers from two CHI platforms and stakeholders from the Provincial Ministry, four RHAs and the Manitoba College of Family Physicians are currently exploring ways to assess and improve system-level strategies for primary care renewal.
- Funded by CIHR, a project to develop appropriateness criteria and selection tools to improve the outcomes of knee replacement surgery is currently in progress.
- The development of a predictive model for protracted (>24h) stays in the Emergency department titled, ‘Predicting Emergency Department Stays of Over 24 Hours.’

Researcher Spotlight
In June 2014, HSP’s Dr. Sara Kreindler was appointed the Manitoba Research Chair in Health System Innovation. Her research centers on the question of how best to design and implement models of health-services delivery. She conducts multi- and mixed-methods research and synthesis to help inform decisions on system-level issues, and also explores the dynamics of organizational decision-making and system change.

Dr. Kreindler also spent the spring of 2014 on a whirlwind tour of 8 cities, building a team for multi-jurisdictional research to improve patient flow. Following extensive stakeholder engagement, they achieved full participation of the urban health regions of Western Canada and the Western Healthcare CEO Forum and its associated Patient Flow Collaborative. The team also includes provincial stakeholders from the four provinces, Accreditation Canada and leading flow researchers weighing in at over 40 members. These efforts, which also included an environmental scan of regional characteristics, were funded by a CIHR Planning Grant.

Highlights
- 22 collaborative projects
- 4 workshops
- 15 presentations
- 3 PhD or Masters candidacy support
- 7 peer reviewed publications
- 7 academic journal reviewerships
- $425,000 in grant funding
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. From guidance and advice on particular aspects of the knowledge synthesis pathway to complete management of knowledge synthesis projects, the KS team is committed to providing clients with world-class experience and competence.

CIHR New Investigator Salary Award
In 2014, Dr. Zarychanski received the coveted Canadian Institute of Health Research (CIHR) New Investigator salary award which aims to provide outstanding new investigators with the opportunity to develop and demonstrate their independence in initiating and conducting health research.

Bruce Squires Award
Dr. Meghan Azad received the Bruce Squires Award presented by the Canadian Medical Association Journal (CMAJ). Dr. Azad was first author on the study titled: Gut microbiota of healthy Canadian infants: profiles by mode of delivery and infant diet at 4 months, one of CMAJ’s most highly-cited and downloaded articles in 2014.

Dr. Azad also received the CIHR Institute for Human Development, Child and Youth Health ‘IHDCYH Talks’ Competition Award for the Knowledge Translation video, ‘Breastfeeding: good for your baby and their gut bacteria!’

Systematic Reviews
The KS team is actively engaged in collaborative research that will advance the science and methods of systematic reviews. They are actively building systematic review capacity through a dedicated graduate level course in KS taught by members of the platform and through a series of topic specific seminars and mini-courses throughout the year.

Network Meta-Analysis: Understanding and Generating Indirect and Mixed-Treatment Evidence
CHI hosted a two day workshop featuring a nation-wide expert on comparative effectiveness research. The aim was to introduce participants to different types of evidence comparisons: direct, indirect and mixed treatment alongside core concepts of mixed treatment/network meta-analysis (NMA) comparisons. In addition, the workshop featured applied NMA/statistical analysis sessions; working through set examples using NMA (NetMetaXL) software.

Grant Funding
Dr. Zarychanski received funding from CIHR for research on ‘Transfusion of Plasma Prior to Invasive Procedures’ and Dr. Meghan Azad received funding from the Canadian Respiratory Research Network & AllerGen NCE for studying the ‘Developmental origins of asthma and role of breastfeeding, milk composition and maternal factors’ as well as from the Manitoba Medical Services Foundation & Children’s Hospital Research Institute of Manitoba for studying the ‘Effect of Human milk composition and early childhood overweight.’

Media Spotlight
CHI’s Dr. Meghan Azad, study author, was part of a team of scientists from the U of M and the University of Alberta who analyzed the gut bacteria in the dirty diapers to determine whether the child will develop allergies in the future. The research appeared in a recent edition of the journal Clinical and Experimental Allergy and was highlighted as the journal’s ‘editor’s choice.’ The research has garnered provincial media attention with articles appearing on Global News, Winnipeg Free Press and Wave magazine.

Highlights
• 14 publications
• More than $450,000 in grant funding
From discovery to implementation, the focus of the Project Management Office (PMO) is developing and implementing projects related to clinical service delivery, including building capacity in project management, process improvement and change management. They effectively integrate evidence to clinical practice and care models with the goal of improving patient outcomes, experiences and access to care.

Over the course of the last year the PMO has actively engaged in and supported over 59 projects. The projects vary in scope and nature, ranging from short term interventions to relatively long term projects focusing on complex system transformations. Additionally, the PMO offered extensive training and capacity building including 3 'Introduction to LEAN' workshops, Failure Mode and Effects Analysis (FMEA) as well as an Introduction of Lean Six Sigma to over 55 participants.

The following highlights some of the innovative projects that have been completed within the past year.

**Primary Care Clinics**
The PMO worked with the WRHA’s Chronic Disease Collaboration team, focusing on developing a standardized and streamlined primary care model with an emphasis on patient flow. Throughout the project, a total of 14 initiatives were executed between the clinics and the program team. Their goal was to maximize efficiency in WRHA primary care clinics and implement improvements aimed at increasing productivity and sustaining quality across these sites.

The first stage of the project was an assessment of the primary care clinics across the region. It quickly became evident that the clinics were not homogenous; they each dealt with unique challenges. Subsequently, each clinic focused on its specifically identified initiatives and developed best practices to address the issues, then sharing them at the regional level.

The results from these initiatives made an impact in all areas: some clinics saw the number of duplicate prescription requests reduced from 19% to 4%, staff satisfaction increase, the number of appointment types decrease from 78 to 15 and/or the average time to stock clinic rooms go from 6 hours 20 minutes to 1 hour and 5 minutes. The project also produced a series of future recommendations, setting tangible targets to improve provider productivity and ongoing training and development, ensuring ongoing work will lead to long term sustainability.

**Print Optimization**
Over the course of two years, print device assessments were completed in 9 hospitals, 39 Personal Care Homes and 51 community and corporate sites throughout the WRHA, gathering data on the existing environment and unique needs for each site. Recommendations for action to be taken for every print device were made and reviewed with user groups, directors and senior leadership to ensure requirements were identified correctly, resulting in over $1,800,000 in annual savings.

**New Partnerships**

**Operational Excellence Initiative**
Partnering with the U of M’s Faculty of Engineering, the Mechanical and Manufacturing Engineering Operational Excellence Initiative provides an opportunity for a team of graduate and undergraduate students to conduct a project within their industry of choice, i.e. healthcare.

A Process Engineer from the PMO provided the team with an understanding of the methodical application of Operational Excellence and Engineering principles and theory to address a real industry problem.

The students worked on the ‘Performance Improvement Project at ACCESS Winnipeg West Primary Care Clinic’ project which aimed to improve the inventory management system in order to assist caretakers with the growing demand of services at this clinic.

**Lean Six Sigma Mentorship**
Three certified Lean Six Sigma Black Belts from the PMO served as mentors to WRHA candidates working towards achieving their Green Belt certification through the Learning to See (LTS) Consulting Inc. with several WRHA programs/sites.
Virtual Central Intake
When the project began, there were 20 independently managed waiting lists for patients undergoing cataract surgery. The goal was to enhance these patients’ experience by streamlining referrals to ophthalmologists by sharing wait time data and creating informed choice discussions with patients at the time of referral.

As a result, 14 months after the implementation of a new referral process, the total number of cases for surgeons with the longest wait lists decreased from 52% to 40%, with the range of patients waiting for a cataract procedure improving from roughly 1-21 months to 2-9 months.

Another factor was the number of patients on the wait list whose information had not been validated. A signed letter of consent is now required for entry to the waitlist, increasing the total number of correctly defined patients waiting from 16% to 93%. The schedule for patients waiting for surgery was also prioritized, with the longest waiting patients being given priority, which resulted in a decrease in the number of patients waiting longer than 16 weeks for surgery from 77% to 49%.

Evaluation

The Evaluation platform provides leadership and support in creating an environment of evidence-informed decision making. Working collaboratively with program and service staff, care providers and the wider community, their expertise is recognized as a vital component to improving patient care and the health of the population.

They continue to use a variety of methods for evaluating programs and services including: the Birth Centre, the Mental Health Crisis Response Centre, Prenatal Connections (travelling for birth), Hospital Home Teams, In Sixty (Cancer Patient Journey), Choosing Wisely, SMD Wheelchair Services, Smoking Cessation (Hospital to Home), Interprofessional Interventions, Happy Child Happy Smile, Geographic Integration of Community Areas with hospitals (Winnipeg West & South), food security and the Bell Hotel.

Community Health Assessment
The community health assessment was delivered to the Government of Manitoba in March 2015, describing over 80 indicators of Winnipeg's health status, health services utilization and risk factors. The CHA reports indicator values 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 behaviors, health risk factors such as smoking, physical activity and nutrition; and health system performance indicators across the system.

Year of Evaluation
Did you know 2015 is the International Year of Evaluation? The aim is to advocate and promote evaluation and evidence-based policy making at international, regional, national and local levels. Visit chimb.ca for more information.

Highlights
• Completed a CIHR-funded knowledge synthesis e-Mental Health Services for children, youth and adolescents (Sept. 2014) and published three manuscripts as a result
• Two case studies resulting from a 5-year PATHS Equity for Children CIHR grant, focusing on the details behind In-School Clinics and MB’s Prenatal Benefit
• Several rapid reviews

The Evaluation platform also supports a variety of CHI multi-platform initiatives including the Manitoba Research Ethics Harmonization Strategy, along with significant contributions to Pharmacist Impact on the Home Care Team: A Pilot Study (PI: D.Woloschuk).

Research Manitoba Establishment Grants
Three out of the five recipients of the 2014 Applied Health Services Research Grants from Research Manitoba were supported by Evaluation staff. Supporting applied health services research, this focus area is important to the health systems in Manitoba and supports collaborations between policy makers, service providers and researchers interested in working together to address health system challenges.

The platform contributed to the proposal for Why is “Soft Integration” So Hard? Assessing and Improving System-Level Strategies to Implement Primary Care Renewal and CHI’s Evaluation Director, Dr. Colleen Metge, was a co-investigator for two others: ‘Improving Access and Quality of Mental Health Services for Youth through Implementation of a Shared Care Stepped Approach’ and ‘Risk Based Triage and the Transition from Primary to Nephrology Care.’
Dr. Lisa Lix, DS Director, is a co-investigator on the Manitoba Personalized Lifestyle Research (TMPLR) Program. The interdisciplinary team is managed by Dr. Peter Jones, an expert in nutrition as the Senior Director and CHI’s Dr. Meghan Azad, an expert in developmental origins of health and disease, gut microbiome and knowledge synthesis as the Junior Director. The program is funded for five-years to bring together a team of Manitoba researchers to implement a cross-sectional study spanning multiple health and scientific disciplines. It aims to identify the complex interactions that exist between lifestyle, genetics and gut microbiota and explore how these relate to risk factors for chronic conditions in Manitoba.

This program will generate a unique research platform with a database of extensively phenotyped participants that will be used to develop and test strategies to improve the health of Manitobans. The research program will be centered on five components: Nutrition, Physical activity, Sleep, Genetics and Gut microbiota. Long-term viability of this research team will be maximized through mentorship of its junior researchers, allowing for continuity of the research expertise in Manitoba and creation of a sustainable research cluster.

A five year study, including contributors from CHI’s KS and DS platforms, has been awarded $2,500,000 from CIHR. The project is entitled ‘Defining the Burden and Managing the Effects of Psychiatric Comorbidity in Chronic Immunoinflammatory Disease’ and is led by Dr. Ruth Ann Marrie along with Co-PI Charles Bernstein, both from the University of Manitoba. CHI is supporting the conduct of systematic reviews on pharmacotherapies and non-pharmacotherapies related to psychiatric comorbidities in patients with inflammatory bowel disease, multiple sclerosis or rheumatoid arthritis. This grant highlights CHI’s capacity to facilitate research in Manitoba and their growing expertise to facilitate the attraction of top-tier research funding to the Province of Manitoba.

In collaboration with Jim Slater, CEO Diagnostic Services Manitoba and the Canadian Agency for Drugs and Technology in Health (CADTH), CHI’s Choosing Wisely project team, led by Dr. Eric Bohm, hosted a one-day ‘Think Tank’ workshop: Creating a Meaningful Physician Engagement Model to Enable Health System Improvement. The event brought together participants including physicians, provincial and regional administrators and researchers to understand current physician engagement best practices.

The Think Tank allowed for the beginning of authentic conversations due to the high ratio of physicians to administrators. It was a first step in bringing together these groups to discuss the importance of physician engagement from recent studies and practices; the current state of physician engagement in Manitoba and best strategies to move forward both with Choosing Wisely and with physician engagement as a whole.
Through collaboration across platforms, a team from CHI and researchers in Winnipeg have a spotlight on them as their findings make an impact on the delivery of healthcare at a local hospital.

This September, a life-saving Massive Transfusion protocol was introduced at the Health Sciences Centre (HSC) in Winnipeg. An internal review found that these high-risk patients were being compromised by slow delivery times for the blood needed to keep them alive. The group, including CHI’s Laurie Gosselin, Process Engineer and Dr. Ryan Zarychanski, KS Director, worked with multiple groups from HSC, the Winnipeg Health Region, Canadian Blood Services and Diagnostic Services Manitoba to implement changes that would speed up the delivery of blood to these patients.

The massive transfusion protocol project is already being touted for its contributions to system improvements. Under the new protocol, additional changes were introduced to centrifuge spinning times for lab samples, which have now been applied across the system leading to a dramatic reduction in spinning time from 15 minutes to 4 minutes, and a restructuring of hospital laboratory processes now allows for essential blood tests to be available to clinicians in a record 20 minutes.

The goal of this Choosing Wisely campaign is to ensure all Manitobans receive necessary and appropriate preoperative diagnostic testing for elective surgeries through the sustainable implementation of standardized, evidence informed clinical practice guidelines. In support of this over-arching goal, the objectives for the campaign include:

- Understanding barriers for clinical adoption and implementation of best practice guidelines through stakeholder engagement
- Testing of implementation strategies through the Plan Do Study Act (PDSA) cycles and developmental evaluation approaches
- Creation of a sustainable process for on-going monitoring and to support guideline adherence that can be incorporated into existing operations

In Manitoba, testing for Vitamin D levels has grown significantly in the past 8 years from approximately 5,000 tests in 2006 to an estimated 50,000 by 2015/2016, an increase of approximately 900%.

The goal of this project is to identify patterns associated with unnecessary testing, as well as to quantify the number of unnecessary tests being ordered and/or completed. Once the findings of the project have been verified, a baseline for appropriate testing levels will be established. Alongside this project is another titled Appropriate Vitamin D Deficiency Testing, which aims to reduce the amount of unnecessary Vitamin D tests to more appropriate levels as indicated by the Characterization of Vitamin D in Manitoba project, leading to an enhanced patient experience.

This project involves a partnership between CHI and Diagnostic Services of Manitoba (Jim Slater, CEO, Executive Sponsor). Core CHI team members include: Dr. Eric Bohm (Project Sponsor) and Dr. Mike Moffat (HSP), Albert Mota (PMO), with Dr. Lisa Lix (DS) and Wendy Doig (DS) working exclusively on the Characterization of Vitamin D Testing In Manitoba project.
Education and Capacity Building

Academic Health Sciences Leadership Program

Starting its fifth session in the fall of 2015, this program identifies and mentors future leaders in the Faculty of Health Sciences at the U of M, Government of Manitoba and the Winnipeg Health Region. It focuses on developing skills to assist individuals to prepare for leadership roles while understanding the dynamics of the healthcare system and academic environments.

This program features selected experts and University, Health Authority and Government senior leaders. Participants are mentored to lead academic health sciences units while fostering organizational growth, learning and innovation.

Collaborating with EvidenceNetwork.ca

The Evidence Network of Canadian Health Policy (commonly known as EvidenceNetwork.ca) is an evolving Canadian healthcare resource designed to connect researchers and experts in health policy with journalists in order to provide healthcare consumers, professionals and policymakers with the best available evidence in order to make informed decisions. They help bridge the gap between researchers and journalists to ensure that the latest research and evidence around important health policy issues leads to improved patient outcomes, enhanced patient experiences and improved access to care for all Canadians. This means that the right information gets to the right people at the right time.

Recognizing that an investment in EvidenceNetwork.ca is an investment in a proven, comprehensive national knowledge translation strategy that will assist in the translation and dissemination of quality research and evidence, CHI’s KT platform has created a unique partnership with EvidenceNetwork.ca providing both funding and in-kind contributions in the way of staff time and work. In partnership with EvidenceNetwork.ca, the KT platform has assisted with: presentations; Op-Ed training for researchers; the writing of topical backgrounders and OpEds; the writing of grant proposals for EvidenceNetwork.ca; and networking and promoting the work of EvidenceNetwork.ca both locally, provincially and nationally.

Developing CHI’s Patient Engagement Strategy: Key Principles

1. Support and facilitate the practice of patient engagement
2. Build and strengthen patient engagement partnerships
3. Advance the science of patient engagement
REDCap Workshops

CHI, in collaboration with the U of M Health Sciences Faculty, has launched an innovative data collection tool to support researchers in Manitoba. REDCap (Research Electronic Data Capture) is a secure web application designed to support data capture for research studies. CHI has implemented REDCap at the U of M and offers frequent hands-on workshops to give researchers a basic introduction to REDCap throughout the year.

Postgraduate Course: Systematic Reviews and Meta-Analysis

2015 marked the third 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. **50% of reviews produced by participants publish their course assignment**, a complete systematic review and meta-analysis, in a high quality peer-review journal.

Partnering with the Government of Manitoba

CHI has partnered with the Government of Manitoba to bring Physician Management Institute (PMI) courses to Manitobans for the past **3 years** that are highly interactive, featuring training developed specifically for physicians. PMI is the Canadian Medical Association’s leadership development program designed specifically for physicians in Canada’s healthcare system. It’s an accredited professional and personal development program designed to prepare physicians, at any career stage, to be effective leaders and managers.

Project Management for Managers Workshops

This year the PMO hosted **six** Project Management for Managers workshops to over 80 participants. This workshop is designed for managers who have a need for the tools and skills available to effectively manage small to medium-sized projects in their departments.