



CAHO

Discovering **Tomorrow's**
Health Care **Today**

2011-12 Annual Report



The Council of Academic Hospitals of Ontario is the non-profit association of Ontario's 24 academic hospitals and their research institutes. CAHO provides a focal point for strategic initiatives on behalf of our member hospitals.

As research intensive hospitals, CAHO members are fully affiliated with a university medical or health sciences faculty. Our hospitals provide the most complex and urgent care, teach the next generation of health care providers and foster health care innovation derived from discovery research.

The CAHO Vision and Mission

Vision

Improving lives for a stronger Ontario through the integration of health research, education, and specialized care.

Mission

As key partners in the health care system, the CAHO community will harness our collective research and innovation strengths to advance world-leading patient care and a sustainable health care system.

Values

Leadership: Our member hospitals employ world-class researchers and innovative leaders. Working together in new and innovative ways, CAHO takes a leadership role in finding solutions to the pressures facing health care in Ontario.

Collaboration: CAHO believes in working collectively as a community and in partnership with others to affect transformational change and build a strong health research enterprise in Ontario.

Innovation: As the creators and early adopters of health research and innovation, the contribution of Ontario's research hospitals is profound. Whether it is the research and discovery of novel new therapies, the education of the next generation of health care leaders, or caring for the most complex patients, Ontarians depend on CAHO hospitals to provide the hope in health care.

Quality: In all that it strives to do, CAHO believes that all activities should lead to positive outcomes and driving quality improvement.

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Drs. Douglas Ing, Cardiologist; Dheeraj Rajan, Interventional Radiology Specialist; and George Oreopoulos, Vascular Surgeon, Peter Munk Cardiac Centre perform Canada's first renal denervation procedure to reduce high blood pressure

Building an Innovative Health Research Enterprise for Ontario



2011-12 marks the second year of our five-year strategic plan. The continued focus on collaboration within our community and with our key partners is paramount to the continued success of our mission. Using this collaborative work to improve the lives of Ontarians through the integration of health research, education and specialized care is vital and remains at the core of what we do.

One of the key collaborative accomplishments achieved this year was the excellent work done by the *Research Hospital Resourcing (RHR) Task Force*. This Task Force examined critical factors required to ensure the success of a strong research hospital enterprise. Through their work, this Task Force has developed strategies and recommendations aimed at improving the resourcing of hospital-based health research, and improving the sustainability of a strong, robust health research enterprise for Ontario.

In 2011, the Ministry of Health and Long-Term Care committed \$6.3 million over three years to CAHO's Adopting Research to Improve Care (ARTIC) Program. This is welcomed news for our community. Improving the quality of health care starts with research, and this funding will help expand our efforts to share best practices and provide tangible ideas to improve the delivery of health care.

Another key accomplishment over the past year was the establishment of Clinical Trials Ontario (CTO). CTO aims to make Ontario a preferred location for global clinical trials and ensure a more attractive environment and robust health research enterprise. Given the size of the clinical trials industry in Ontario, CTO will have the opportunity to lead

consensus-building strategies that will reinforce Ontario as an ideal partner for clinical trials research. CAHO will continue to work with CTO to facilitate efforts to streamline research ethics reviews for multi-site trials.

On a personal note, I want to express my thanks to my fellow Council members for allowing me the opportunity to serve as CAHO Chair. It has been a privilege over the past year to represent such an exceptional and respected group of leaders and hospitals. I am also very thankful to Karen Michell and her team at CAHO for the support they provide me and the Council.

While there is still more work ahead, and building on the success of this past year, I look forward to our continued collaboration to ensure health research and innovation remains a central pillar for the Ontario health care system and economy, enabling Ontario to be a global leader in health care and health research.

Barry McLellan
Chair, CAHO Council
President and CEO, Sunnybrook Health Sciences Centre

Over the past year, CAHO has continued to develop and build on the strong foundation set by our Strategic Plan. Our focus is to ensure CAHO continues to play an integral role in building a strong health research enterprise to transform the health care system in Ontario.

Our community has shown a strong commitment and engagement to collaborate and support each other while achieving results through their tireless work. The collaborative effort of our community continues to encourage and inspire me.

The *Fueling the Innovation Report* is a great example of the collaborative work done by our members. The report, developed by CAHO's Research and Resources Committees, is fundamental to the work done by CAHO as it will address the improvement of a strong health research enterprise in Ontario, and guide us over the next few years.

We continue to make great strides with the CAHO Adopting Research to Improve Care (ARTIC) Program to help build a pathway to move research evidence into practice across the CAHO community and the health care system. Since its launch, we have grown the program from two projects to four with the inclusion of the CAHO Antimicrobial Stewardship Program (ASP) in Intensive Care Units (ICU) and the Mobilization of Vulnerable Elders in Ontario (MOVE ON) ARTIC Projects.

CAHO ARTIC Projects continue to demonstrate the leadership of our community in moving evidence into practice to improve health care. Moving forward, CAHO will begin to expand our ARTIC Program to develop another approach to identifying projects. CAHO will identify a health system priority, review the available research evidence to address that priority and

identify research evidence to be implemented to address this concern. Aligned with the Ministry of Health and Long-Term Care and Health Quality Ontario, the focus of the next round of ARTIC Projects will centre on *Transitions in Care*.

I am also very encouraged by the partnership between the provincial government and our sector. Over the past year, our community has supported the establishment of Clinical Trials Ontario (CTO), and the MaRS EXCITE initiative – two initiatives that will strengthen Ontario's role as a leader in health research and innovation.

Finally, I would like to take the opportunity to recognize Dr. Barry McLellan as CAHO Chair. Barry brings strong leadership and a system perspective to CAHO. His vision to realize our full potential as a collaborative community is fundamental to our efforts to continue to implement our Strategic Plan as we strive to harness our collective research and innovation strengths to drive quality and sustainability in the system.

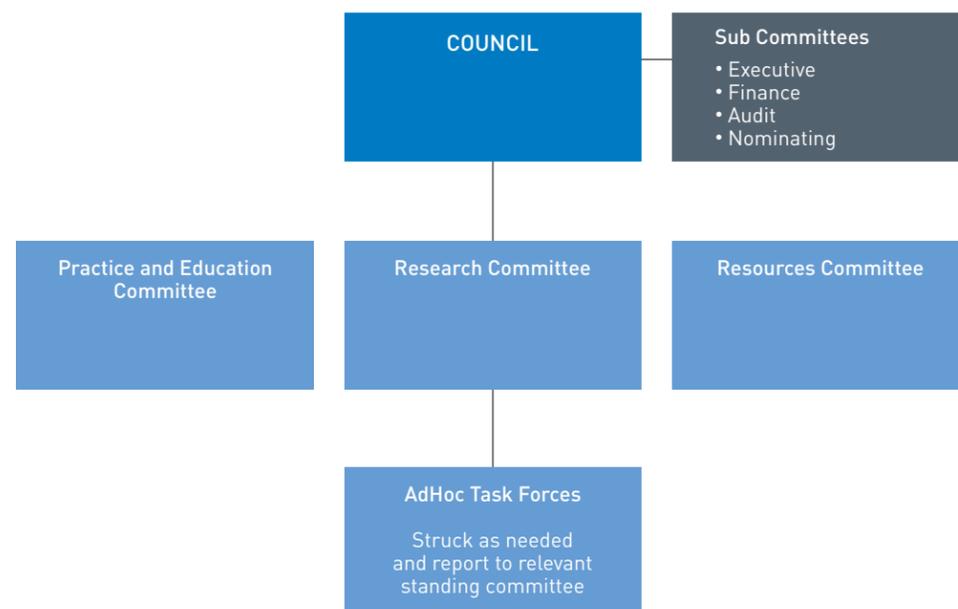
I would also like to acknowledge the team here at CAHO whose hard work, dedication and enthusiasm impress me every day. Their continued support and assistance with our committees, task forces and stakeholders is very much appreciated. I look forward to continuing our efforts to build and enhance an outstanding health research enterprise in Ontario.

Karen Michell
Executive Director
Council of Academic Hospitals of Ontario

In 2010, CAHO developed a **governance model** that aligns with the **goals** of the 2010-15 **Strategic Plan** and facilitates a **multidisciplinary approach** to leadership. Two years into this governance model the CAHO community has seen greater **collaboration** between our **member hospitals** and experts.



CAHO Governance Model and Committee Structure



This collaboration is specifically designed to facilitate the identification, assessment and rollout of health research evidence and innovations across our member institutions with the goal of transforming the health care system. In addition to the CAHO Council, the association is supported by three committees: the Practice and Education Committee, the Research Committee, and the Resources Committee.

Practice and Education Committee

The CAHO Practice and Education Committee provides strategic advice to CAHO Council on patient care, clinical practice and education matters stemming from and impacting CAHO's mission. The Committee is responsible for operationalizing and implementing CAHO's strategic focus of enabling the rapid and responsible movement of research evidence into practice to improve quality, in collaboration with other partners. In 2011-12, the Practice and Education Committee provided leadership to the development of, and oversight to, the CAHO Adopting Research to Improve Care (ARTIC) Program. In addition, the Practice and Education Committee is undertaking efforts to examine and enable the enhancement of quality and patient outcomes considering an optimal mix of health care providers within our hospitals. The Committee is also fostering greater collaboration with Health Quality Ontario (HQO) and the Ontario Health Technology Assessment Committee (OHTAC), focusing on evidence adoption, knowledge translation and the development of implementation plans for evidence-based technology recommendations.

Research Committee

The CAHO Research Committee provides strategic advice to CAHO Council on health research matters stemming from and impacting CAHO's mission, with a representative view of the full spectrum of health research that takes place at CAHO hospitals. This includes strategizing on how to advance the stability of and investment in the health research and innovation enterprise in CAHO hospitals. In 2011-12, the Research Committee provided guidance regarding CAHO's involvement in the Clinical Trials Stakeholders Association by

helping shape the recommendation to government on streamlining research ethics reviews for multi-site industry sponsored clinical trials in Ontario, and playing a key role in the establishment of Clinical Trials Ontario (CTO). The Committee has also advised on, and supported the advancement of, a number of provincial and federal government initiatives such as an Ontario focus for the CIHR's Strategy for Patient-Oriented Research (SPOR), research funding programs of the Ministry of Economic Development and Innovation (MEDI), and the development of a program for pre-market assessment of technologies (EXCITE).

Resources Committee

The CAHO Resources Committee provides strategic advice to CAHO Council on resourcing issues stemming from and impacting CAHO's mission. Resources are defined as operations, finances, people, facilities, technology and other resource implications arising from the CAHO mission. The Committee considers and advises on financial or other resource enablers to advance the stability of and investment in health research and innovation enterprise of CAHO members. In 2011-12, the Resources Committee worked collaboratively to consider the implications of the Ministry of Health and Long-Term Care's Patient-based Payment (PbP) policy and Health-Based Allocation Model (HBAM) as it relates to the mandate of a research hospital. The Resources Committee also collaborated with the CAHO Research Committee in providing recommendations to increase resourcing efficiency within the CAHO community. Recommendations include the adoption of a standardized reporting tool to illustrate hospital-based health research finances across the CAHO community.

CAHO **Task Forces** are developed on an as-needed basis. These task forces may be asked to address a **particular issue** or area of interest within the CAHO community. In addition to established task forces that met over the last year, several new task forces were created to focus on **specific initiatives**.



Hopital Montfort simulation laboratory allowing staff to practice in a safe clinical environment.

CAHO ARTIC Program Task Force

The *CAHO ARTIC Program Task Force* is charged with providing strategic oversight to the ARTIC Program. This Task Force reviews the overall approach of the ARTIC Program to ensure the CAHO community effectively achieves the purpose of the ARTIC Program which is to move evidence-based research into practice across CAHO hospitals to drive quality improvement for the benefit of the health care system.

Health Human Resources (HHR) Task Force

The *Health Human Resources Task Force (HHRTF)* is focusing on addressing the immediate system priorities of increasing or maintaining quality of care at the same or lower cost. In order to achieve this, the Task Force will consider the current model of care delivery in the context of optimizing health human resources. This includes identifying the best care models to ensure the patient is at the centre of these models. In carrying out their mandate, the Task Force will work closely with the Human Health Resources Division of the Ministry of Health and Long-Term Care.

CAHO Research Hospital Resourcing (RHR) Task Force

The *CAHO Research Hospital Resourcing (RHR) Task Force*, struck by the CAHO Resources and Research Committees, examined critical factors required to ensure the success of a strong research hospital enterprise. Through the development of the *Fueling the Innovation Engine Report*,

the RHR Task Force researched existing resourcing models, their processes, practices and mechanisms in order to catalogue how resources flow to and from research hospitals and their affiliated research institutes, as well as to inform recommendations as to how this could be done more efficiently.

This Task Force has developed an illustrative, scalable model to help research hospitals and institutes account for research revenue and expense streams in a consistent manner as a template for adoption across the CAHO membership. This model will increase transparency in reporting and facilitate the recognition of the full cost of hospital-based health research. The collaborative work of this Task Force along with the Resources and Research Committees provides a forum for members to learn from each other and design joint strategies for how best to enhance the health research enterprise in Ontario.

A new *RHR Coordination Task Force* has now been created to act as the primary reporting body to CAHO Council and track and coordinate the progress of five newly-created Task Forces against their respective action plans and evaluate the impact of the recommendations as they are implemented. These newly created Task Forces are expected to fulfill their mandates by January 2015.

CAHO Clinical Trials Task Force

The *CAHO Clinical Trials Task Force* will identify and share strategies with CAHO members to facilitate the adoption of a best practice whereby, overall, clinical trials will occur on a cost-neutral or revenue generating basis.

CAHO Infrastructure Collaborations Task Force

The *CAHO Infrastructure Collaborations Task Force* will identify and develop new potential areas of infrastructure collaboration. Opportunities to increase efficiency and productivity may be achieved through inter-institute collaboration.

CAHO Research Financials Task Force

The *CAHO Research Financials Task Force* will develop the value proposition to account for, and report, the full cost of research; and develop policies and guidelines necessary to build a public reporting structure for health research financials.

CAHO Research Metrics Task Force

The *CAHO Research Metrics Task Force* will identify metrics for the purpose of measuring research impact and commitment to and investment in research.

CAHO Resourcing Opportunities Task Force

The *CAHO Resourcing Opportunities Task Force* will explore and submit recommendations for innovative resourcing options by identifying, assessing and recommending innovative sources to strengthen and sustain the hospital-based research enterprise.

Physician Quality Improvement Initiative (PQII)

The *CAHO Physician Quality Improvement Initiative (PQII)* is a physician-led, collaborative initiative at CAHO member hospitals. PQII is based on the premise that providing feedback to physicians on their performance and tools to support their professional development can be useful in improving the quality of care provided by an individual practitioner and at the organizational level where best practices can be shared and consistency facilitated across all hospitals.

An essential component of PQII is the implementation of the Physician Achievement Review (PAR). The PAR enhances physician self awareness through the provision of meaningful feedback in relation to quality of patient care through the use of 360-degree surveys, providing opportunities for self review and active development of a plan with the support of physician leaders and analyzing evidence of progress against agreed upon goals.

Beginning in early 2012, the CAHO PQII began its implementation in a phased approach. The first phase will include select departments at participating hospitals to allow for refinement through the collaboration and shared learning of staff. Moving forward, the evaluation of the first phase will inform the decision-making about expanding the program so that all active staff physicians can benefit from this initiative.

Ontario currently lacks an overarching health research strategy to ensure the innovation cycle from discovery to practice is complete. An effective strategy would bring all stakeholders – government, researchers, academic health sciences centres, the private sector and the public – together to ensure the best health research turns into the best health care delivery.



The virtual reality system at The Ottawa Hospital is the first of its kind in Canada available for the rehabilitation of both military and civilian patients.



Health Research and Innovation Council – Closing the Loop on Ontario's Innovation Cycle

To facilitate the effectiveness of health research in Ontario, CAHO is also leading the call for the creation of a Health Research and Innovation Council.

Without sustainable research funding, Ontario risks losing its best and brightest research talent. The creation of a Health Research and Innovation Council would help make Ontario the pre-eminent research capital of the world. A Council would also deliver better health outcomes and unprecedented economic growth by attracting the best researchers to Ontario, fostering new discoveries, and translating them into practice.

Laboratory at UHN's IDAPT Centre for Rehabilitation Research applying aerospace technology in rehab research giving scientists the ability to recreate environmental challenges experienced by people with disabilities in a safe and controlled environment.

In concert with the provincial government, the Council would assume four chief roles:

1. Design a health research strategy for Ontario

The primary role of the Council would be to lead the creation and implementation of a long-term strategic plan for health research in Ontario, with government and broad stakeholder input. This strategy would balance and develop investments in discovery, translation, and commercialization across the spectrum of health research to ensure projects are complementary.

2. Leverage and Distribute Health Research Funding

The development of a Council would establish a balance between a blend of base funding and priority funding to contribute to supporting basic research, and the provincial health research priorities. Funding decisions would be based primarily on research excellence as judged by peer review, strategic fit with Ontario's priorities, partnership opportunities and economic outcomes.

3. Facilitate commercialization

There are several organizations in Ontario devoted to commercializing health research. The Council would work with these organizations to ensure the imperative to commercialize is embedded in any health research strategy for the province.

4. Facilitate knowledge translation and evaluate impact of research

An emphasis on measurement and evaluation of the impact of health research would promote a culture of continuous improvement, help identify gaps in funding, facilitate priority setting and provide a system of accountability to government funders and the public. This focus on the evaluation of the impact of health research would also assure Ontarians that health research funding dollars are being spent optimally. The Council would improve health care in Ontario by fostering knowledge translation, building receptivity to research and facilitating the introduction of new ideas and technologies to clinical and health policy settings.

As a result of past government investments, a robust health research engine has been created. Continuing to leverage these investments should be part of an innovative economic development strategy for Ontario. This would directly help create a knowledge-based economy which will contribute to Ontario's long-term economic prosperity.

The Council would weave together the many moving parts of Ontario's health research enterprise, improve the efficiency of the delivery of new discoveries, provide evidence for best practices, and a stronger knowledge-based economy for our province. It would harness our collective innovation and direct it intelligently into the future.

CAHO recognizes that to truly affect **change** and to **assert** Ontario as a **world leader** for health research, we need to work **collaboratively** within our **community** and with our partners. CAHO continues to **advocate** and embark upon various **initiatives** in an effort to shape the health research **enterprise** in Ontario. CAHO has worked on a number of collaborative **initiatives** over the course of the last year to achieve this **goal**.



Surgical Centre at St. Joseph's Healthcare Hamilton - one of 12 new operating theatres showcasing cutting-edge technology, supported by new day surgery and post-anesthetic care units, a pristine sterile processing department and a minor procedures area to provide the very best care for our patients.

Clinical Trials Ontario

In 2010, the Ministry of Economic Development and Innovation (MEDI) tasked a group of key stakeholders, including CAHO, to make recommendations on how to streamline the ethics review process for industry-driven multi-centre clinical trials. From this process the Clinical Trials Stakeholders Association (CTSA) was developed with a mandate to establish Clinical Trials Ontario (CTO). In December 2011, CTO was established as a legal entity with a vision to increase Ontario's market share in clinical trials, while maintaining the highest standard of patient safety. CTO will help create a more competitive

environment for clinical trials in Ontario while ensuring patients have access to innovative preventative and treatment therapies in the safest possible environment. Given the size of the clinical trials industry in Ontario, CTO will have the opportunity to lead consensus-building on strategies that will reinforce Ontario as an ideal partner for clinical trials research. CAHO will continue to work with CTO to facilitate efforts to streamline research ethics reviews for multi-site trials. The goal is to contribute to a more attractive environment for clinical trials in Ontario so the overall share of such trials are maximized which contribute to a more robust health research enterprise for Ontario.

Medical Technology Sector Strategy

Through Ontario's Open For Business Sector Strategy, the Ontario Government established an open and collaborative relationship with business stakeholders in the medical technology sector through its industry association, MEDEC. CAHO has been identified as a collaborative partner to participate in this process given the unique role as both the creators and early adopters of medical technology, and as a key partner in building an economic strategy that leverages the health research enterprise as a key contributor to a growing knowledge-based economy. CAHO will assist in the identification of high priority health issues facing the system and work with the medical technology sector to identify potential solutions. CAHO will also provide expertise in assessing potential pre-market technologies as part of the MaRS Excellence in Clinical Innovation and Technology Evaluation (EXCITE) initiative. Catherine Zahn, President and CEO of CAMH and Karen Michell, Executive Director of CAHO sit on the MaRS EXCITE Management Board as CAHO representatives. The collaboration between health, academia, government and industry aims to establish Ontario as the leading jurisdiction for pre-market evaluation of medical technologies.

Ontario Health Technology Assessment Committee

CAHO has played an increasingly collaborative role with the *Ontario Health Technology Assessment Committee (OHTAC)*. Because CAHO member hospitals are often the early adaptors of new technology, they are considered the test bed for many of the new technologies that are adopted in the health system. CAHO will partner with OHTAC to develop implementation plans for recent hospital-specific evidence-based technology recommendations. Moving forward, CAHO will partner with OHTAC to develop implementation plans for OHTAC at the stage of public comment so as to enhance uptake once the recommendations are final.

Strategy for Patient-Oriented Research

The *Strategy for Patient-Oriented Research (SPOR)*, initiated by the *Canadian Institutes of Health Research (CIHR)*, aims to improve the translation of innovative diagnostic and therapeutic approaches to the point of care, helping provinces and territories meet the challenge of delivering high-quality, cost-effective health care. In 2011, CAHO was asked by MOHLTC and MEDI to facilitate a multi-stakeholder table to identify a focus for SPOR in Ontario. CAHO continues to lead a working group to conceptualize a plan and provincial focus. The principles that will guide this design include leveraging existing system strengths, linking existing strengths to maximize benefit across Ontario and a focus on improving platforms rather than investing in new research projects.

80% of publicly-funded health research in Ontario takes place in CAHO research hospitals. The unique mandate of a research hospital – the integration of **research**, **teaching**, and **specialized care** – provides an excellent environment for **innovation**. Being both the **creators** and early adopters of **research and innovation**, CAHO research hospitals provide immense value to the health care system. Health research provides the foundation upon which new treatments

are developed and patient care is improved. CAHO hospitals are the **living laboratories** where some remarkable medical **breakthroughs** have taken place. These breakthroughs have changed the way health care is delivered in Ontario, and **around the world**. Here are a few examples of the **valuable work** the CAHO community has accomplished over the **last year**:



Baycrest releases the first teaser version of the Virtual Brain software to clinicians and scientists to input data from brains suffering from disease, damage or degeneration. This will help inform a refined model of the virtual brain, a predictive modeling tool that will change the way we assess and rehabilitate brains that have suffered damage from stroke, epilepsy or the early stages of Alzheimer's.

Baycrest launches *Baycrest Toolkits* to provide clinicians with the latest research-based intervention techniques to help clients suffering from cognitive deficits. The toolkits provide clinicians with a validated, structured program for the rehabilitation of executive function, which is one of the most difficult cognitive deficits to address.



Bruyère Continuing Care breaks ground on the innovative *Bruyère Village* that will bridge the gap between independent living and long-term care. The Village concept matches care with needs and reduces the cost burden on the province.

The Bruyère Centre of Learning, Research and Innovation in Long-Term Care is a leading-edge initiative that brings together caregivers, researchers, and educators to improve the health of seniors living in long-term care homes.



Centre for Addiction and Mental Health (CAMH) establishes the *Campbell Family Mental Health Research Institute* to expand research on neural circuitry and brain plasticity. One focus will be to investigate less invasive brain stimulation treatments such as repetitive transcranial magnetic stimulations (rTMS) and magnetic seizure therapy (MST) for various conditions such as treatment-resistant depression.

Centre for Addiction and Mental Health (CAMH) deploys the first mobile research lab in Canada to advance knowledge on mental health, addictions and violence and conduct community-based research. At its first stops in Port Colborne and Welland, more than 300 people participated in research.



Children's Hospital of Eastern Ontario (CHEO) Research Institute in partnership with the Ottawa Hospital Research Institute opens the *Centre for Practice Changing Research* which is dedicated to improving health and patient care through clinical and translational research.

Children's Hospital of Eastern Ontario (CHEO) Research Institute discovers that triage nurse initiation of corticosteroids to children with asthma on presentation to the emergency department reduces length of stay and decreases admission to hospital.



Hamilton Health Sciences and McMaster University researchers partner up to lead the exploration of the prevention of influenza by immunizing small groups of children to protect entire communities, the prevention of heart disease and stroke by determining individual risk factors and working towards bridging the gap between discoveries and quicker translation to enhance patient care and improve the health of the community.

Hamilton Health Sciences develops a new initiative bringing together researchers from across 20 institutions in health, engineering, science and business to develop, validate and implement

"frugal innovations", which will assess the safety of water, lead to the development of bedside diagnostics for infections, and simple but effective low cost polypills to prevent cardiovascular disease – all efforts that will have a global impact within the next five to ten years.



Health Sciences North partners with four First Nations organizations to launch Northeastern Ontario's first-ever clinic for the assessment and diagnosis of children with Fetal Alcohol Spectrum Disorder (FASD). Families will be linked with community-based treatment services offered by First Nations.

Health Sciences North surgeons became the first outside of British Columbia to implant a NeuRx Diaphragm Pacing System in a spinal cord injury patient. Doctors performed the surgery on a 20-year-old victim who suffered damage to his spinal cord and diaphragm, preventing him from breathing on his own. The implanted pacing system will stimulate the diaphragm to open and close, allowing the patient to one day breathe on his own again.



Holland Bloorview Kids Rehabilitation Hospital scientists develop the Low Cost mechanical leg, a functional artificial limb for those who have had their leg amputated above the knee, at a cost of \$50. A key component of the limb is its unique mechanism that functions much like a human knee.

Holland Bloorview Kids Rehabilitation Hospital develops the Virtual Musical Instrument® (VMI). The VMI uses computer-based technology to allow people of all ages with limited mobility or impaired motor skills to make music using body movements or signals. The VMI was played in concert by Eric Wan, a quadriplegic engineering student at Holland Bloorview who also helped to develop the unique tool.





Hôpital Montfort participates in a pilot project for colorectal cancer screening by flexible sigmoidoscopy, to be carried out by registered nurses. This procedure offers several advantages that include limited preparation, no sedation and it allows the detection of 60 per cent of cancers and polyps.

Hôpital Montfort launches a cutting-edge simulation laboratory that will replicate human physical reactions allowing staff, medical residents and interns to safely develop and maintain their skills in a clinical environment. The simulation laboratory contributes to the improvement of competencies and the optimization of knowledge transfer, while minimizing clinical risks and guaranteeing patient safety.



The Hospital for Sick Children researchers determine the structure of rotary ATPase, a type of protein found in all cells. The findings help researchers understand how cells manage their energy supply, how certain bacteria, viruses and toxins enter human cells and even how certain types of tumours acidify and invade the tissue that surrounds them.

The Hospital for Sick Children leads a study finding a new way to predict the diagnosis of Multiple Sclerosis (MS) in children using MRI scans which may permit earlier initiation of treatment. Investigators created a rigorous scoring tool that was applied to MRI scans from paediatric patients following their first acute central nervous system (CNS) demyelinating attack – lesions developed in which the neurons have been stripped of their myelin. Physicians can then offer treatment designed to reduce the frequency of further attacks.



Hotel Dieu Hospital launches new regional bariatric assessment and treatment centre to provide pre- and post-surgical care to individuals seeking gastric bypass surgery. The centre will also facilitate inter-professional education and research to discover and disseminate the best evidence-based practices for managing patients with morbid obesity.

Hotel Dieu Hospital ophthalmologist, in collaboration with engineering experts at Queen's University, develops a surgical device that allows glaucoma surgeons to adjust sutures, and eye pressure, post-operatively with greater precision than before. Patented in the United States, the device will soon enter clinical trials at Hotel Dieu.



Kingston General Hospital and Queen's University identify a new mechanism that may contribute to immune resistance in cancer cells. The research is supported by a Phase II clinical trial which indicates that nitroglycerin may be effective for managing certain cancers, such as prostate cancer.

Kingston General Hospital and Queen's University establish the Maternal Health Clinic - one of the first clinics in the world to focus on cardiovascular disease prevention during pregnancy and the postpartum period. This clinic targets women who have had pregnancy complications, such as preeclampsia, and screens them for heart disease risk factors. Disease prevention strategies are discussed and forwarded to the woman's family doctor for further follow-up and management.



The Ottawa Hospital researchers show for the first time that an intravenously-delivered viral therapy can consistently infect and spread within tumours without harming normal tissues in humans. This represents a major advancement in the development of cancer-fighting viruses.

The Ottawa Hospital Rehabilitation Centre introduces one of the first virtual reality systems in Canada used for the rehabilitation of both military and civilian patients. It is a versatile, multi-sensory system used for diagnosis, evaluation and rehabilitation.



Providence Care develops the Nurse-Led Outreach Team (NLOT) to ensure residents of local long-term care (LTC) homes have access to timely care without having to make additional trips to the hospital emergency room. The NLOT project was successfully launched in collaboration with LTC partners.

Providence Care leads the design and implementation of new Behavioural Support Services resources in the South East LHIN, part of the province's \$40 million commitment to improved community supports for seniors with cognitive impairments due to mental health problems, addictions, dementia, or other neurological conditions.



Royal Ottawa Health Care participates in the National Trajectory Project - the first multi-province study to comprehensively examine the histories and trajectories of persons found Not Criminally Responsible under Canadian law. This project, funded by the Mental Health Commission of Canada, has led to a new four-year, CIHR-funded study of forensic patients as they are discharged from hospital in Quebec, Ontario, or BC.

Royal Ottawa Health Care psychiatrists use modern genetic screening to look for abnormalities in the serotonin system functioning; the genetic results are being correlated to rapid eye movement (REM) sleep results to aid diagnostics.



St. Joseph's Healthcare Hamilton researchers assist with a study that indicates Cognitive Behaviour Therapy (CBT) helps patients with both their panic and/or anxiety disorders as well as Irritable Bowel Syndrome (IBS). Patients in the study experienced a significant reduction in their IBS symptoms after CBT.

St. Joseph's Healthcare Hamilton develops a new Lung Diagnostic Assessment Program in partnership with Niagara Health System; this program will provide a single point of access for timely diagnostic services for suspected lung cancer.





St. Joseph's Health Care London doctors conduct a community-based study, *Heal the Steps*, aimed at reducing heart disease by involving participants in their own preventative health care. The program offers personalized exercise, support, group coaching, goal setting and on-line tracking tools.

St. Joseph's Health Care London takes delivery of the first hybrid Positron Emission Tomography (PET) / Magnetic Resonance Imaging (MRI) scanner in Canada will provide a powerful new tool to explore the causes and potential treatments for conditions like dementia, cancer, mental illness, and heart disease.



London Health Sciences Centre opens the Centre for Clinical Investigation & Therapeutics (CCIT). The CCIT brings private industry and investigators together under one roof to develop the next generation of treatments for cancer, heart disease and chronic illness.

London Health Sciences Centre doctors solve the mystery of the role of the protein Maspin in predicting a cancer's aggressiveness. Their research shows when Maspin is present in the nucleus of the cancer cell, the cancer's growth is significantly limited. This discovery may help doctors more accurately assess a patient's outcome, choose more effective treatment, and may also lead to new targets for drug development.



Mount Sinai Hospital scientists are harnessing novel Next Generation DNA sequencing technologies to evaluate new means for discriminating between indolent and aggressive tumours in patients with bladder cancer. The collaboration is aimed at more personalized therapies for this common type of cancer, which is the most expensive to treat for our health-care system.

Mount Sinai Hospital scientists are developing specialized mass spectrometry tools for mapping and understanding protein networks underlying common illnesses. These tools include an innovative computational approach that is helping other researchers globally in their studies of cancer and other illnesses.



North York General Hospital launches its new academic strategy and embarks on a journey of patient-oriented research and innovation. By building on its academic foundation, NYGH staff and physicians will create and study better ways to meet the growing needs of its communities.

North York General Hospital receives top international eHealth designation for its sophisticated electronic medical record system. This new system provides intelligent, evidence-based reminders to physicians as they enter electronic patient orders. To further ensure patient safety, NYGH also implements barcode scanning to match medications with patients.



St. Michael's Hospital opens the *Allan Waters Family Simulation Centre*. This centre allows students and health-care workers to learn and practice new procedures and conduct research. The centre includes a full-size, state-of-the-art operating room where trainees are put through real-life medical scenarios or crises to learn how to respond quickly and as a team, and a skills lab where they learn and practice the newest surgical and diagnostic procedures.

St. Michael's Hospital performs plasmapheresis using a device known as the Glycosorb ABO for a kidney transplant – the first hospital in North America to use this state-of-the-art equipment for kidney transplants. Transplants involving a donor and recipient with different blood types are rare. Most people have natural antibodies in their blood that would cause their immune system to reject an organ from someone with a different blood type.



Sunnybrook Health Sciences Centre launches the first Canadian clinical trial of MRI-guided, high-intensity focused ultrasound for the treatment of brain tumours. This non-invasive paradigm-shifting technology was developed and commercialized by Sunnybrook, in partnership with industry. It enables the ablation of a tumour deep inside the brain or body, without breaking the skin.

Sunnybrook Health Sciences Centre discovers, and is commercializing, a peptide called vasculotide that stimulates the growth of new blood vessels, speeds wound-healing and helps wounds stay closed. This compound has many potential applications, including healing the chronic ulcers that afflict many of the world's 300-million people with diabetes and for which there is no satisfactory treatment.



Thunder Bay Regional Research Institute forms XLV Diagnostics to commercialize technology developed by Dr. John Rowlands and his team to produce x-ray imaging systems at a much lower cost than today, which should make x-ray imaging more accessible throughout the world.

Thunder Bay Regional Research Institute, in conjunction with Lakehead University, recruits the first LU-TBRRRI Research Chair. Dr. Mitchell Albert is recognized for pioneering efforts contributing to the development of hyperpolarized gas MR imaging to allow a regional assessment of lung ventilation in patients with asthma or cystic fibrosis, and provide information about blood perfusion in patients recovering from stroke.



Toronto Western Hospital and University Health Network scientists develop a new drug called Cethrin and conduct a Phase I trial to reverse paralysis in spinal cord injuries. The gel-like drug is applied to the spinal cord after injury in an effort to block the generation of a specific protein dubbed Rho, which can impede the ability of nerve cells to regenerate.

Toronto Rehab is a part of UHN. Toronto Rehabilitation Institute and University Health Network unveil the *IDAPT Centre for Rehabilitation Research* which features 15 unique labs and workshops aimed at developing new mobility devices and other technologies to help people overcome disabling injuries, illnesses or age-related health conditions that prevent them from living full, independent and healthier lives.



One of the **challenges** for the health care system is the successful and rapid **adoption of innovation** into **practice**. Ontario has not realized the full **potential** of **collaboration** and **systematizing** efforts to move research evidence into **practice**. Too often, health researchers have found pathways to improve care and drive quality improvement in the health care system, but that knowledge never leaves the organization that creates it.

Quadriplegic engineering student Eric Wan playing the Virtual Musical Instrument (VMI), a computer-based technology that Wan helped develop at the Bloorview Research Institute, which allows people with limited mobility or impaired motor skills to make music using body movements or signals.



North York General Hospital is the first hospital in Canada to implement barcode scanning that uniquely identifies each medication and each patient, across all medical, surgical and critical care units. Part of the 'eCare' strategy, this reduces the risk for potential medication errors by alerting health care providers when administering medication.



The goal of CAHO's Adopting Research to Improve Care (ARTIC) Program is to learn from this experience and build a sustainable pathway for broader adoption of research evidence across Ontario. By building a pathway for greater evidence adoption, the quality of patient care and the health care system will achieve better health outcomes and more cost-efficient care.

CAHO Adopting Research to Improve Care (ARTIC) Program

Developed in 2010, the *CAHO Adopting Research to Improve Care (ARTIC)* Program commits to fostering better collaboration and establishing a systematic approach of moving research evidence from the lab to the bedside. The CAHO ARTIC Program moves research evidence into practice from one hospital across many CAHO hospitals in order to drive quality improvement and benefit the health care system as a whole.

Through the ARTIC Program, CAHO is working to understand the challenges and opportunities that underpin the realization of efforts to move evidence into practice simultaneously across a large number of institutions. We also recognize the tremendous impact this can have not only in providing better care to Ontarians, but also in managing the finite health resources we have available to us.

CAHO is committed to continuing our journey of learning through the ARTIC Program. CAHO believes the development of this knowledge should not be experienced by our community alone. Working with the Ministry of Health and Long-Term Care (MOHLTC), Health Quality Ontario (HQO) and world-renowned experts in knowledge translation, we aspire to build a sustainable pathway for implementing evidence that can improve care and Ontario's health care system.

Ontario Government Invests in CAHO ARTIC Program

The CAHO ARTIC Program began as a self-funded initiative. Recognizing the power of this platform to test systematic implementation of new evidence and CAHO's ARTIC Program's alignment with the *Excellent Care for All Strategy*, in July 2011, the Ministry of Health and Long-Term Care invested \$6.3 million over three years to support the implementation of the CAHO ARTIC Program. This funding has helped expand CAHO's efforts in the development of a systematic and sustainable implementation program for evidence adoption which will improve the delivery of health care and improve health care outcomes.

"The CAHO ARTIC Program is a wonderful example of collaboration and using evidence to drive decisions in the delivery of care. I applaud CAHO for the leadership and ongoing commitment to the continuous improvement of our health care system."

Hon. Deb Matthews, Minister of Health and Long-Term Care.



Dr. Phillip Marsden,
St. Michael's Hospital

Over the last year, the CAHO ARTIC Program has successfully launched two additional CAHO ARTIC projects:

- 1) CAHO Antimicrobial Stewardship Program (ASP) in Intensive Care Units (ICU) ARTIC Project
- 2) CAHO Mobilization of Vulnerable Elders in Ontario (MOVE ON) ARTIC Project

CAHO Antimicrobial Stewardship Program (ASP) in Intensive Care Units (ICU) ARTIC Project

Patients in the intensive care units (ICU) are the sickest and most vulnerable patients in the hospital, and upwards of 70% of ICU patients are on antimicrobials. Some of these antimicrobials may be unnecessary and exposure to unnecessary antimicrobials places patients at risk for adverse drug events, and drug-resistant infections including *C. difficile*, Methicillin-Resistant Staphylococcus Aureus (MRSA), Vancomycin-Resistant Enterococci (VRE) and invasive fungal infections.

Through the establishment of the CAHO ASP Project it is anticipated the resistance profile in ICUs to commonly used antimicrobials will improve considerably over time. Developed by Mount Sinai Hospital in collaboration with the University Health Network, this program will help reduce unnecessary antimicrobials use and complications from this in ICUs and develop a system for hospitals to compare their results and develop best practices that will benefit the entire healthcare system.



Based on the experience at Mount Sinai Hospital and the University Health Network, it is anticipated that antimicrobial stewardship will reduce ICU antimicrobial use by 12-25% and will reduce ICU antimicrobial costs by 23-41%.

Mobilization of Vulnerable Elders in Ontario (MOVE ON) ARTIC Project

Rates of mobilization in patients admitted to acute care hospitals are unacceptably low. Studies show that hospitalized older adults who were ambulatory during the 2 weeks prior to admission spent a median of only 43 minutes per day standing or moving.

Without mobilization, elderly patients lose 1 to 5% of muscle strength each day in hospital. In addition, one-third of older adults develop a new disability in an activity of daily living during hospitalization and half of these are unable to recover function. Data from observations on inpatient units conducted in 2010-2011 in academic hospitals in Toronto found that less than 30% of patients were mobilized regularly in hospital.

Developed jointly by Sunnybrook Health Sciences Centre and St. Michael's Hospital, the CAHO MOVE ON ARTIC Project team is working collaboratively with 14 CAHO member hospitals to use an inter-professional approach that focuses on early and consistent mobilization of older patients through their hospital stay. This program promotes early mobilization and prevents further decline in older patients admitted to hospital.

Health System Need Pathway

Currently, CAHO ARTIC Projects are selected from available research evidence that is ready to be implemented into practice across CAHO member hospitals. Moving forward, the CAHO ARTIC Program will expand to include an additional strategy to determine and develop future CAHO ARTIC Projects. This strategy will identify a health system priority, review the available evidence to address the priority and then identify research evidence to be implemented to address the concern.

A health system priority of *Transitions in Care* was recommended by the CAHO Practice and Education Committee following its review of common themes across Ministry of Health and Long-Term Care (MOHLTC), Health Quality Ontario (HQO) and CAHO hospitals' priorities. *Transitions in Care* refers to the movement patients make between health care practitioners, clinical services and/or settings as their needs change throughout the course of their treatment and care.

Projects must present an innovation that supports the coordination and continuity of health care as patients transfer between different care locations or different units of services within the same location, with the goal of improving quality, such as patient outcomes, and/or reducing costs to the system. The innovation may be a best practice or product developed at a CAHO member hospital or a local knowledge translation strategy to implement published research evidence. The CAHO ARTIC Program will seek submissions for *Transitions in Care* projects in 2012 with an expected launch in early 2013.

Financials

Report of the Independent Auditor on the Summary Financial Statements

To the Members of Council of Academic Hospitals of Ontario

The accompanying summary financial statements, which comprise the summary statement of financial position as at March 31, 2012, and the summary statement of revenue and expenses for the year then ended, and related note are derived from the audited financial statements of the Council of Academic Hospitals of Ontario ("CAHO") for the year ended March 31, 2012. We expressed an unmodified audit opinion on those financial statements in our report dated June 1, 2012. Those financial statements, and the summary financial statements, do not reflect the effects of events that occurred subsequent to the date of our report on those financial statements.

The summary financial statements do not contain all the disclosures required by Canadian generally accepted accounting principles. Reading the summary financial statements, therefore, is not a substitute for reading the audited financial statements of CAHO.

Management's Responsibility for the Summary Financial Statements

Management is responsible for the preparation of a summary of the audited financial statements on the basis described in the Note to the summary financial statements.

Auditor's Responsibility

Our responsibility is to express an opinion on this summary of financial statements based on our procedures, which were conducted in accordance with Canadian Auditing Standard ("CAS") 810, "Engagements to Report on Summary Financial Statements".

Opinion

In our opinion, the summary financial statements derived from the audited financial statements of CAHO for the year ended March 31, 2012 are a fair summary of those financial statements, on the basis described in the Note to the summary financial statements.

Deloitte & Touche LLP

Chartered Accountants
Licensed Public Accountants
Toronto, Ontario
June 1, 2012

CAHO Summary statement of revenue and expenses

year ended March 31, 2012

	2012		2011		
	Special Projects Fund	Operating Fund	ARTIC Project Fund	Total	Total
	\$	\$	\$	\$	\$
Revenue					
Bank interest	298	2,237	-	2,535	2,069
Membership revenue	-	1,111,094	-	1,111,094	1,064,281
Investment revenue	17,228	-	-	17,228	184,538
Funding revenue	-	-	467,575	467,575	142,328
Other revenue	-	156,969	-	156,969	101,348
	17,526	1,270,300	467,575	1,755,401	1,494,564
Expenses					
Salaries and benefits	73,694	771,891	184,349	1,029,934	862,614
Business travel	-	18,116	857	18,973	16,025
Committee	160	18,544	-	18,704	50,536
Office	475	31,625	3,557	35,657	30,460
Rent	-	93,216	26,000	119,216	44,000
Fees - legal, financial, professional and insurance	47,176	62,756	202,812	312,744	188,987
Management fees	-	64,167	50,000	114,167	63,000
Other sundry	-	18,114	-	18,114	16,176
	121,505	1,078,429	467,575	1,667,509	1,271,798
(Deficiency) excess of revenue over expenses	(103,979)	191,871	-	87,892	222,766

CAHO Summary statement of financial position

as at March 31, 2012

	2012	2011
	\$	\$
Assets		
Cash and cash equivalents		
Special Projects Fund	131,382	252,500
Operating Fund	367,234	204,650
Short-term investments	1,819,021	1,809,860
Prepays	792,500	-
Accounts receivable	89,352	69,140
	3,199,489	2,336,150
Liabilities		
Accounts payable and accrued liabilities	193,629	206,956
Deferred revenue	805,283	9,220
	998,912	216,176
Net assets		
Special Projects Fund	1,291,572	1,402,840
Operating Fund	909,005	717,134
	2,200,577	2,119,974
	3,199,489	2,336,150

Note:

Basis of the summary financial statements

The Council of Academic Hospitals of Ontario ("CAHO") has prepared the summary financial statements to be included as part of its annual report. CAHO has determined that the level of aggregation presented is adequate for the readers of their annual report. The audited financial statements may be obtained from CAHO, on request.

Every day members of Ontario's **research** hospitals make great strides in **improving** the health of all Ontarians. Often being the first in Canada, or the world, to make **discoveries** and adopt new **technology**, CAHO members are intently **focused** on ensuring that best **practices** are adopted to make the **health care** experience as **effective** for patients as possible.



Client demos video gaming system being explored as part of Dr. Fehlings' "CP Net" project to help strengthen the weaker (hemiplegic) limbs in children with Cerebral Palsy. Minister Duguid in photo with Holland Bloorview President and CEO, Sheila Jarvis.

Over the last year, CAHO has focused on building on its core values: leadership, collaboration, innovation and quality. This has allowed us to leverage our collective research and innovation strengths and enable the rapid movement of evidence into practice to advance health care in Ontario.

Looking forward to 2012-13, CAHO will continue to work with stakeholders and the health care and research communities to develop initiatives that deliver better value for the health care system and improve lives in Ontario through the integration of health research, education, and specialized care.

Despite the economic challenges facing Ontario, the future of health research is more important than ever. The focus of the CAHO community is to ensure we build on the success developed together, continue to advocate for a strong health research enterprise and facilitate collaboration across our membership to ensure Ontario is the preferred global destination for health research and innovation that transforms care.



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