ANNUAL REPORT
2014/15

ontario stroke network

Advancing the Ontario Stroke System

ontariostrokenetwork.ca

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Every **10 minutes**, someone has a stroke in Canada**.**

from leaders

Rehabilitation is key to recovery for stroke survivors to help them regain as much of their independence as they can and recover to the fullest extent possible.

Since the OSN was created eight years ago, our vision of fewer strokes, better outcomes has moved increasingly closer to reality. This has only been possible through the dedicated work of health care professionals and decision makers working together with patients and families to enhance the stroke care system in Ontario.

In 2014, the Ontario Stroke Network (OSN) Board of Directors undertook a mid-term review of the OSN Strategic Plan. Through this review, OSN strategic directions were revised to the following: 1) Be a credible leader and effective advisor, 2) Drive excellence and 3) Pursue strategic partnerships for vascular and brain health.

This Annual Report is organized to highlight OSN accomplishments according to the new strategic directions.

In collaboration with Ontario's Regional Stroke Networks, the OSN made significant progress towards helping drive improvements in stroke prevention and care in Ontario. Provincially, the OSN Stroke Report Cards showed statistically significant improvement in 16 of 19 indicators. Additionally, 14 of 17 Benchmarks have also improved. In comparison to the baseline year of 2003, significant and steady improvements in acute care outcomes and positive trends in the rehabilitation sector are being seen, with annual health system savings estimated to be $27 million.

A major focus of the OSN's work in 2014 was to advance development and implementation of stroke Quality Best Practices (QBP). In the 'Our Accomplishments' section of this report, you can read about our progress in this area, including the AlphaFIM® and the OSN Forum.

OSN has also been focusing on the Strategy for Patient Oriented Research (SPOR) Ensuring QUality in the Implementation of Quality Based Procedures (EQUIP) Demonstration project. The overarching goal of SPOR is to translate research results into improved health outcomes for Canadians.

For Stroke Month, OSN partnered with the Alzheimer's Society of Ontario to create a 'Stroke and Dementia' focused plan. The Stroke Month campaign was highly successful, with significant media attention and regional campaign satisfaction.

We also created a new online tool, the Professional Stroke Education Inventory, a repository of tools, resources and programs that support health care professionals working in stroke care.

We invite you to peruse our Annual Report and experience first-hand our accomplishments. Please visit our website at ontariostrokenetwork.ca and connect with us on Twitter (@ONStokeNetwork). Subscribe to our eBulletin for the latest information on stroke and the OSN.

Most of all, stay in touch! You can email us at info@ontariostrokenetwork.ca.

Malcolm Moffat
Board Chair

Christina O'Callaghan
Executive Director

accomplishments

Throughout fiscal year (FY) 14-15, OSN continued to make significant progress on its strategic directions and annual provincial work plans. Highlights of this progress and related accomplishments follow.

Strategic Direction 1: Be a credible leader and effective advisor

Quality Based Procedures (QBP)

A major focus of OSN's work in FY 1415 was to advance development and implementation of stroke QBP's. The OSN undertook the following activities in support of QBP development, implementation, clinical engagement and knowledge translation:

- Reviewed and supported consolidation of Phase 1&2 Expert Panel recommendations into Quality Based Procedures: Clinical Handbook for Stroke (Acute and Post-Acute)
- In October 2014, AlphaFIM® became a mandatory data element in the Canadian Institute for Health Information Discharge Abstract Data base (CIHI-DAD). AlphaFIM® data collection will support the QBP recommendation that patients with an AlphaFIM® score of 40-80 be discharged to inpatient rehabilitation, and patients with scores greater than 80, to outpatient/community based-rehabilitation
- Developed standards for data collection on Rehabilitation Intensity

OSN Strategy for Patient Oriented Research (SPOR) Demonstration Project: Ensuring QUality in the Implementation of Quality Based Procedures (EQUIP) Demonstration Project.

The overarching goal of SPOR is to translate research results into improved health outcomes for Canadians. The OSN project is one of two demonstration projects within SPOR. Key FY 14-15 activities include:

- Conduct a current state analysis of stroke QBP implementation
- Conduct patient/family consultations to understand impact of stroke

QBP implementation
- Development of a QBP evaluation framework
- Development and analysis of a Milestones and impacts report
- In collaboration with the MOHLTC, development of best practice recommendations for stroke QBP pricing
- Conduct a qualitative and quantitative evaluation of the impact of Stroke Distinction on QBP implementation

Research Projects

Investigating Stroke Unit (SU) Care:
Results showed a clear mortality benefit of SU care compared to General Wards (GW). Mortality rates within one and two years of acute care discharge was considerably lower in SUs than in GWs, consistent with findings of the 2013 Cochrane Review. In addition, SU care is associated with improvements in (quality adjusted) life expectancy compared to GW care without significant increases in total healthcare costs. The results of the study were shared with the regional program directors to further inform regional stroke unit planning activities.

Optimal TIA Management:
Analysis of in-patient trans-ischemic attack (TIA) admissions suggest that patient-level characteristics rather than system-level factors have a greater influence on decision to admit patients with minor stroke or Transient Ischemic Attack (TIA). These results will contribute to the review of stroke prevention clinic model of care led by the OSN Best Practice Subcommittee.

Presentations and Publications

- 2014 Canadian Stroke Congress: 33 OSN and regional stroke network posters and 10 platform presentations
- 2015 International Stroke Conference: one oral and seven poster presentations

Education Activities

- The 2014 Stroke Collaborative, co-chaired by OSN and Heart and Stroke Foundation, included a comprehensive program and was a highly successful event with more than 600 attendees (predominantly front line clinicians). 98 per cent of attendees strongly agreed or agreed that the conference was relevant to their practice/ work.
- Six (6) CME accredited Provincial Stroke Rounds were held, reaching more than 1,000 health care professionals. Topics included carotid stenosis, impact of stroke survivor and caregiver support groups on community reintegration, Cerebral Venous Thrombosis and Intracerebral Hemorrhage.
- OSN contributed to the National Best Practice Recommendations for Secondary Prevention and Acute Care and supported development of corresponding knowledge transfer resources.

Engagement and Knowledge Dissemination

- Partnered with the Alzheimer's Society of Ontario to create plan for Stroke Month, 2014, focused on Stroke and Dementia
- The Stroke Month campaign was highly successful, with significant media attention.
- Developed and distributed 26 OSN eBulletins. Since June 2013, subscribers

have increased more than 500 per cent.

- Social media strategy reviewed, updated and implemented. Followers on Twitter have increased more than 500 per cent since June, 2013. Social media platforms have expanded to include Twitter, Facebook, Google+, LinkedIn, Vimeo, Youtube and an up-to-date RSS feed

Strategic Direction 2: Drive Excellence

Telestroke

The Ontario Telestroke Steering Committee (OTSC), supported by the OSN and the Ontario Telehealth Network (OTN), continue to advance planning for the provincial Telestroke program and key recommendations arising from the Telestroke program review. Progress includes:

- Two new Telestroke sites (Bluewater Health Sarnia and Grey Bruce- Owen Sound) launched, bringing the number of active Telestroke Referring sites in Ontario to 24.
- Recruitment of four additional stroke neurologists increased Telestroke consultant capacity, bringing total Telestroke consultants to 14.
- Improved performance on many acute stroke indicators, based on Ontario stroke report card indicators one to 11, among facilities where stroke expertise is provided through Telestroke (compared to the 2010/11 performance). In particular:
  - A 10 per cent decrease in tPA door-to-needle time.
  - A five per cent absolute increase in referral to secondary prevention services.
- Telestroke indicators were captured in the FY 12-13 Ontario Stroke Audit data collection and were included in the 2014 Ontario Stroke Evaluation Report.
- Achievement of Telestroke program milestones; more than 1,000 (tPA) recommendations and more than 4,300 physician calls fielded.

TIA/Minor Stroke

The standardized provincial TIA algorithm was finalized and endorsed by the Regional Medical Directors and the BP Sub-committee. Development of a dissemination and evaluation plan is underway and targeted for completion in May, 2015. Based on best practices, the algorithm will serve as a decision making tool that can be used to identify high risk patients and quickly provide them with preventative therapies in a stroke prevention clinic setting.

Best Practice Resource Development

FY 14/15 saw development of resources to support best practice implementation across the care continuum. A Provincial Integrated Work Plan Committee (PIWPC) was created to provide leadership in the development, management and communication of provincial planning and project development. Activities during FY 14/15 include:

- Development of an Early Supported Discharge (ESD) backgrounder, Briefing Note to Phase 2 QBP Expert Panel Co-Chairs and a sample business case template.
- Navigation Model to Support Patient Transitions to Community literature review and identification of common elements and principles of navigation models completed.
- Resident Assessment Instrument (RAI) Stroke Care Plans pilot was completed.
  - Stroke care plans have been adopted by all Extendicare Long-Term Care Homes in Ontario (34) and all Jarlette Health Services Long-Term Care Homes in Central East LHIN (14).
- In collaboration with the Victorian Order of Nurses (VON) Canada, representatives from OSN Community and Long Term Care, Rehabilitation and Education Coordinators developed a two-part webinar series on Stroke and exercise. The webinar series is aimed to assist service providers learn about the impact of stroke on people.

OSN Evaluation Program

Ontario Stroke Report Cards

The 2014 Ontario Stroke Report Cards were released and for the first time included interpretative summaries capturing the collaborative work between the Regional Stroke Networks (RSNs) and the Local Integrated Health Networks (LHINs).

The interpretive summaries commented on accomplishments and areas for improvement related to assessment and delivery of stroke best practices within the LHINs. The Report Cards graded key stroke indicators for each of Ontario's 14 LHINs since 2011. The report cards remain a critical support to the Regional Stroke Networks in driving improvements in access to best practices and patient/health system outcomes at the LHIN level. The provincial report card showed statistically significant improvement in 16 of 19 indicators. Additionally, 14 of 17 benchmarks have also improved.

2014 Ontario Stroke Evaluation Report

- The 2014 Ontario Stroke Evaluation Report was released in September 2014 and included an update on the 2010/11 Ontario Stroke Audit (OSA) using FY 12-13 data (greater than 14,000 acute patient visits and inpatient stays) and provided a baseline for stroke QBP performance indicators. In addition, the 2014 report provided an update on progress toward OSN targets.
- Institute for Clinical Evaluative Sciences (ICES) annual report highlighted the Ontario Stroke Evaluation Program as one of four high impact projects.
- In comparison to the baseline year of 2003, significant and steady improvements in acute care outcomes and positive trends in rehabilitation are being seen with annual health system savings estimated to be $27 million.

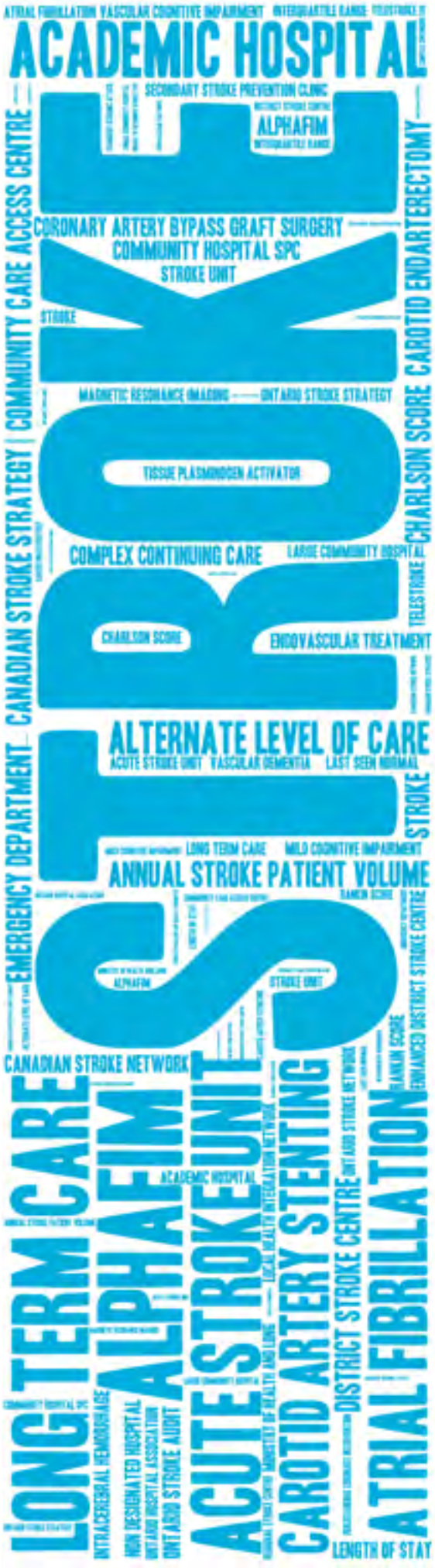
Findings include:

- almost 700 fewer deaths
- estimated 3960 fewer ED visits in 12/13
- estimated 4,400 acute care inpatient visits avoided annually
- total acute care inpatient length of stay decreased by one day
- Alternate Level of Care (ALC) length of stay decreased by one day
- time to carotid intervention among admitted patients reduced by 32 days
- wait times for admission to inpatient rehabilitation from acute care reduced by three days
- access to inpatient rehabilitation for severely disabled stroke patients increased two per cent over the past three years

Ontario Acute Stroke Audit Highlights

Findings of the 2012-13 OSA, released in FY 14/15, show steady improvements in Ontario's stroke system over the past 10 years, including acute care, access to inpatient rehabilitation and prevention. In addition, more stroke patients are receiving care at designated stroke centres and associated with this, are statistically significant improvements, including:

- Documentation of stroke type
- Neuroimaging within 24 hours
- Carotid imaging and median time to carotid intervention
- Administration of tissue plasminogen activator (tPA)
- Access to inpatient rehabilitation
- ED referrals to stroke prevention clinics
- Decline in:
    - in-hospital, 30-day and one-year mortality
    - 30-day all-cause readmission and 30-day readmission for stroke or TIA
    - admissions to long-term care within one year of a stroke event



The OSA was also used to analyze and validate the CIHI 340 data elements. Key findings of the comparison between OSA and CIHI 340 data were:

- Greater than 85 per cent agreement between neuroimaging and tPA indicators
- Higher levels of agreement for all variables between Stroke Distinction sites and stroke centres
- Date and time elements for 'discharged with anti-thrombotic prescription' requires improvement
- Agreement between administrative data and the OSA highly variable at individual hospital level

The definition of stroke unit care was modified to ensure best practice stroke unit care is being provided. Based on the revised definition, the proportion of Ontario's stroke patients receiving care on a stroke unit was 26 per cent in 2012/13.

Strategic Direction 3: Pursue Strategic Partnerships for Vascular and Brain Health

Hypertension Management Program

The Hypertension Management Program (HMP) is an evidence-based, interprofessional, collaborative program developed to support patients in managing their hypertension and associated chronic conditions.

In FY 14/15, there were 38 HMP sites located across Ontario; 24 in primary care clinics and 14 in aboriginal health centers. FY 14-15 accomplishments include:

- Criteria established for expansion of HMP to additional sites
- A call for interest to become an HMP site, resulted in expressions of interest from more than 55 clinics. Planning is underway for implementation of 16-20 additional HMP sites across Ontario
- Completed re-launch of HMP provider website, which includes 100 per cent of materials' access, system support, operations management and best-practices' delivery to participating healthcare organizations

- Completion of an evaluation of OSN/HMP Privacy framework and processes resulted in:
  - Updated hosting/data sharing agreements
  - Removed legacy patient consenting process;
  - Creation of new privacy policies and procedures
- Recommendations stemming from FY 13/14 Program Evaluation were assessed and implemented:
  - Aboriginal Hypertension Management Program (A/HMP) program materials and resource tools' to address a broader range of the demographics; materials and tools to better address heterogeneity in culture, language and literacy level
  - Emphasis placed on identifying methods to increase HCP confidence in their abilities to optimize patient adherence
  - Development of an internal verification system to help enhance validity of repository data
  - Increased efforts to integrate A/HMP with other chronic disease/risk management resources
  - Structural problems with the database, including duplicate records, test cases, and pre-baseline visits addressed
  - Broaden the scope of A/HMP beyond disease management and also focus on disease prevention education
- Development of an HMP Advisory Group and operating framework

Vascular Health Primary Care Working Group (PCWG)

In FY 14/15, the OSN PCWG continued its work on two priorities:

- Development of a Vascular Health Assessment and Support Tool (VHAST). The VHAST proposes to function in Ontario MD funding-eligible EMRs with embedded capability for clinical data to be compared against best practice guidelines. Progress includes:
  - A Proof of Concept electronic Vascular Flow Sheet developed and positively received by stakeholders. The feedback informed the next phase prototype development
  - The OSN's PCWG and Canadian Cardiovascular Harmonized National Guidelines Endeavour (C-CHANGE) are collaborating to align the VHAST with C-CHANGE guidelines
  - The VHAST prototype development project commenced January, 2015. Prototype requirements gathering was initiated. A demo version of a user-ready VHAST prototype is on track for Fall, 2015
- Development of a Vascular Health QI Toolkit. Completed activities include:
  - Draft Vascular Health QI 'Companion' resource and framework for supplementary QI elements
  - Topics for QI elements identified (smoking cessation, hypertension screening and management, aortic abdominal aneurysm screening and VHAST implementation)
  - QI elements for Aortic Abdominal Aneurysm (AAA) and hypertension screening and management drafted

The PCWG met with various groups including ICES, Canadian Diabetes Association and Ontario Brain Institute seeking collaboration, alignment and potential linking of future evaluation activities.

Additionally, a Healthy Catering Checklist and

Implementation Guide has been developed by the VHC to support healthy food selection for events/ meetings held throughout Ontario. Dissemination of the Checklist and an Implementation Guide occurred and health care partners are encouraged to utilize the resources.

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After age 55, the risk of stroke
doubles every 10 years.

Trends in OSN Stroke Report Cards

Ruth Hall[1,2,3], Elizabeth Linkewich[4,5,6], Ferhana Khan[2], Jianbao Wu[2], Patrick Moore[1], Christina O'Callaghan[1]

Introduction

In 2011, the Ontario Stroke Network's Stroke Evaluation and Quality Committee created Ontario's Stroke Report Card, consisting of twenty indicators with potential to influence system performance and the flow of stroke patients across the care continuum. The provincial report card and 14 regional report cards serve as a valuable stakeholder tool to drive system change and consistent planning across the province.

Objective

To evaluate stroke system performance at the provincial and regional level by comparing recent performance to the previous three-year performance and if benchmarks improved.

Methodology

- The Canadian Stroke Strategy Performance Measurement Manual1 was used to identify indicators that capture the care continuum and have impact at a systems level.
- Performance for indicators with available data (19 of 20) was calculated and reported at the regional and provincial level. The performance range within regions and the facility/regional best performer were identified.
- Achievable Benchmarks of Care methodology2 was used to calculate the benchmark. For each indicator we rank ordered all facilities/sub-regional performance. The benchmark for each indicator is calculated among the top performing facilities/sub-regions that cared for at least 20% of all the patients in the province.
- Statistical significance was determined by comparing the most recent year's performance to the combined average of the previous three years performance. A chi-square test, Wilcoxon rank-sum test, and Poisson and logistic regressions were used where appropriate.
- Data Sources: Ontario Stroke Audit of acute care facilities from FY2004/05, FY2008/09, FY2010/11 and FY2012/13 for eight indicators; Canadian Institute for Health Information administrative databases from FY2009/10-FY2012/13 for eleven indicators; and, Ontario Home Care Database FY2008/09-FY2012/13 for one indicator.
- In Ontario, 15 of 19 indicators showed statistically significant improvement from the previous 3 years. Only one indicator showed a statistically significant decline and the remaining three indicators improved but were not statistically significant ($p > 0.05$).
- Fourteen of 17 benchmarks improved since the 2011/12 report card.
- Carotid imaging, neuroimaging, acute thrombolytic therapy administration and stroke unit utilization indicators had widespread (10 or more regions) statistically significant improvements.
- Indicators with little improvement are the proportion of ischemic stroke or transient ischemic attack patients with atrial fibrillation prescribed or recommended anticoagulant therapy and the proportion of severe stroke patients admitted to inpatient rehabilitation.
- Most regions (8 of 14) have not shown an improvement in the mean number of home care rehabilitation services provided to stroke/transient ischemic attack patients.

FIGURE 1 Number of Indicators with Statistically Significant Changes

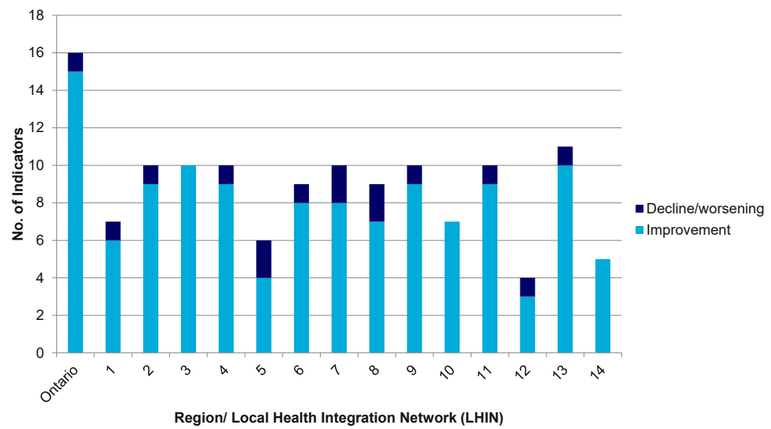
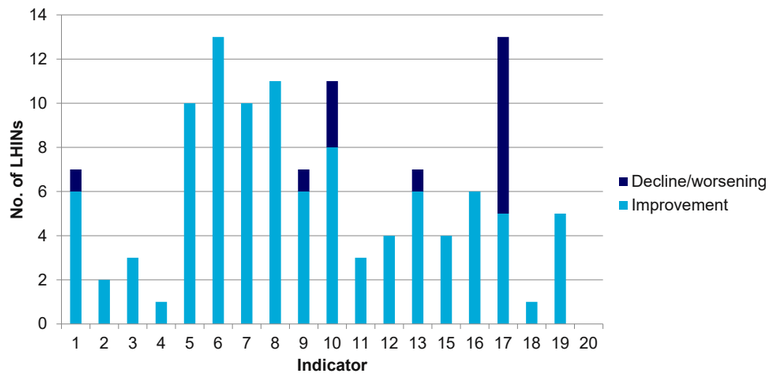


FIGURE 2 Number of LHINs with Statistically Significant Changes



Conclusions

- Ontario's stroke report card reflects steady improvement in stroke prevention, acute management and rehabilitation. These improvements have occurred in the absence of financial incentives such as pay for performance suggesting there is great capacity for the health system to improve using targeted performance reports.
- Most regions have seen significant improvements in neuroimaging and carotid imaging and access to thrombolysis.
- Despite improvement at the provincial level regional variation remains and there is a need for regional approaches to address these variances. In particular, access to inpatient rehabilitation for all stroke patients, especially for patients with severe disability, home care based rehabilitation and anticoagulant prescribing for patients with atrial fibrillation should be addressed.

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[1] Ontario Stroke Network, Toronto, Canada
[2] Institute for Clinical Evaluative Sciences, Toronto, Canada
[3] University of Toronto, Toronto, Canada
[4] North & East GTA Stroke Network, Toronto, Canada
[5] Sunnybrook Health Sciences Centre, Toronto, Canada
[6] Northern Ontario School of Medicine, Sudbury, Canada

publications

(REPRESENTING OSN AND/OR REGIONAL STROKE NETWORK SUPPORTED PROJECTS)

Title	Author	Publication/Conference
Adult daughters providing post-stroke care to a parent: A qualitative study of the impact that role overload has on lifestyle, participation and family relationships	Bastawrous M., Gignac M.A., Kapral M.K., Cameron J.I.	Clinical Rehabilitation Sep 25. pii: 0269215514552035
Community stroke rehabilitation teams: Providing home-based stroke rehabilitation in Ontario, Canada	Allen L., Richardson M., McIntyre A., Janzen S., Meyer M., Ure D., Willems D., Teasell R.	Canadian Journal of Neurological Science, 41:1-7
Computed Tomography Identifies Patients at High Risk for Stroke after Transient Ischemic Attack/ Nondisabling Stroke: Prospective, Multicenter Cohort Study	Wasserman J., Perry J., Sivilotti M., Sutherland J., Worster A., Emond M., Jin AY., Oczkowski W., Sahlas	D., Murray H., MacKey A., Verreault S., Wells G., Dowlatshahi D., Stotts G., Stiell I., Sharma M. Stroke. 2015;46:114-119
Daughters providing post stroke care: Perspectives on the parent-child relationship and well being	Bastawrous M., Gignac M., Kapral M.K., Cameron J.I.	Qual Health Res published online 22 August 2014 DOI:10.1177/1049732314548689

Title	Author	Publication/Conference
Enhancing Community-Based Rehabilitation for Stroke Survivors: Creating a Discharge Link	Langstaff C., Martin C., Brown G., McGuinness D., Mather J., Loshaw J., Jones N., Fletcher K., Paterson J.	Topics in Stroke Rehabilitation, Vol 21(6),November/December;510-519
iPAD technology for home rehabilitation after stroke(iHOME): A proof of concept randomized controlled trial	Saposnik G., Chow CM., Gladstone D., Cheung D., Brawer E., Thorpe K.E., Saldanha A., Dang A., Bayley , M., Schweizer T.A.	International Journal of Stroke Vol October; 9(7);p956-962
Stroke rehabilitation and patients with multimorbidity: a scoping review protocol	Nelson M.L.A., Kelloway L., Dawson D., McClure A., McKellar K.A., Menon A., Munce S., Ronald K., Teasell, R., Wasdell M., Lyons R.F.	Accepted for publication in Journal of Comorbidity 2015
Stroke survivors ,caregivers and health care professionals: Perspectives on the weekend pass to facilitate transition home	Cameron J.I., Bastawrous M., Marsella A., Forde S., Smale L., Friedland J., Richardson D., Naglie G.	Journal of Rehabilitation Medicine Oct; 46(9):858-63. doi: 10.2340/16501977-1854
The well-being of adult children caregivers: A scoping review	Bastawrous M., Gignac M.A., Kapral M.K., Cameron J.	I. Health Soc Care Community. 2014 Dec 4. doi: 10.1111/hsc.12144

abstracts & presentations

(REPRESENTING OSN AND/OR REGIONAL STROKE NETWORK SUPPORTED PROJECTS)

Title	Author	Publication/Conference
Stroke Quality Based Procedure: Implementation Update and Feedback Opportunity	Bayley, M.	OHA Presentation - Apr 2014
A regional approach to creating a stroke passport	Pagliuso S.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Accuracy of Administrative Data for Coding Acute Stroke and Transient Ischemic Attack Events	Mondor L., Kapral M., Hall R.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Achieving regular multi-centre performance reporting within a stroke region	Gould L.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Building a sustainable strategy for acute stroke unit implementation within the Champlain Region	Martineau I.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Collaborative development of a regional carotid revascularization pathway	Fronzi L.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Communicative access measures for stroke (CAMS)	Kagan A.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Community reintegration of stroke survivors in Northeastern Ontario	Jermyn D.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Community stroke rehabilitation model in Brant Haldimand Norfolk	Fronzi L.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Decreasing wait times and increasing patient volumes in the stroke prevention clinic using a Lean Methodology	MaeBrae-Waller A.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Delivering content in the Champlain Regional Stroke Network: Assessment, Development and Delivery	Thornton M.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Developing a decision making model for investment in outpatient and community based rehabilitation for stroke patients in North Simcoe Muskoka	Meyer M.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Development of a hyperacute stroke unit at London Health Sciences Centre, Regional Stroke Centre	Tomaszewski G.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Development of a stroke staff orientation and competency framework using LEAN methodology	Whiteman R.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014

Title	Author	Publication/Conference
Drive-by learning: Visual representations of best practice stroke care for front line care providers in long term care homes	Brown G.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Enhancing use of interprofessional outcome measure tools across the continuum of care in southeastern Ontario	Saulnier S.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Improving stroke rehab through inter-professional quality and patient safety rounds	Fortin J.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Implementation of the 8-Item Morisky Medication Adherence ScaleTM and a Lifestyle Modifications Questionnaire to Measure Patient Compliance	Khan B., Mangroo S., Sewell A., Maebrae-Waller A., Hoy J., Crisp D.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Increased utilization of best practice with use of a standard admission package for stroke patients	Linkewich E.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Key foundations for sustaining and advancing changes in "our" stroke system	Sharp S.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Knowing each other's work: Evaluating the impact of essential professional conversations on care collaboration at times of transition and gaining insights for sustainability	Quant S.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Mobile/Online Technology and Best Practice Recommendations: A Perfect Fit	Brown A.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
My passport: The impact of a transition tool for persons with stroke and caregivers	Sharp S.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
New evidence based toolkit for triaging TIA and Non-disabling stroke in Northwestern Ontario	Jaspers S.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Out of the starting gate: Moving toward an integrated vascular health system in Southeastern Ontario	Murphy C.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Peers Fostering hope: Delivering hope and resilience through a hospital peer visiting program	McKellar J.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Peers fostering hope program: Peer support as a complement to stroke care in acute and rehabilitation	McKellar J.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Putting the patient at the centre of system planning	Linkewich E.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Recruitment challenges in a retrospective study on patient compliance to secondary stroke prevention treatment	MaeBrae-Waller A.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014

Title	Author	Publication/Conference
Recruitment Challenges in a Retrospective Study on Secondary Stroke Prevention	Mangroo S., Khan B., Sewell A., Maebrae-Waller A., Hoy J., Crisp D.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Secondary Prevention in Ontario: How do we measure up?	Khan F., Linkewich B., Hodwitz K., Zhou L., Hall R., O'Callaghan C.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Stroke and cognitive impairment: Who gets into rehabilitation?	Linkewich E.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Stroke navigators as an important element of an integrated stroke system	Pagliuso S.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Stroke rapid referral program: Quality assurance strategies for continued success	Hammond L.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Stroke virtual community of practice supports best practice dialogue about post-stroke depression screening	Donald M.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Supporting discharge decision-making and system planning in Ontario	Linkewich E.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Supporting stroke best practice implementation among stroke healthcare providers using social media technology.	Donald M.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
System and process factors influencing carotid endarterectomy timelines for patients seen in Champlain Stroke Prevention Clinics	Gocan S.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Taking Action: A Community Hospital Applies Stroke Best Practices	Murphy, C., Anderson, S., Bhatt, J., Gerritsen, J., Gibson, E., Huffman, S., Jin, A., Keddy, A., Kellam, M., Lynch, J., Martin, C., MacNeil, J., et al	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
The impact of a community re-engagement cue to action trigger tool on the re-engagement in valued activities post stroke	McKellar J.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
The impact of integrated systems of stroke care on 30-day mortality after stroke	Fang J.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
The launch of an integrated stroke unit at the Brant Community Healthcare System	Fronzi L.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
The patient post-stroke journey tool	Pagliuso S.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014

Title	Author	Publication/Conference
The use of social media to raise public awareness about stroke in Central South Ontario	Pagliuso S.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Therapy time: Reaching for best practice in stroke rehabilitation	Willems D.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
There's an iBook for that: How a contemporary technology helps meet patient's health literacy needs in collaboration with the healthcare partners	Bowman D.	Canadian Stroke Congress, Vancouver, Canada - Oct 2014
Education and partnerships: Keys to the expansion of TIME - a community-based exercise program	Howe J., Tee A., Brunton K., Matthews J., Salbach N.	GTA Rehab Network Best Practices Day 2014
Assessment of Key Variables Related to Investment in Outpatient and Community-Based Rehabilitation for Stroke Patients in the North Simcoe Muskoka LHIN	Meyer M., Sooley D., Tee A., Morrison K., Gallardi A., Byrch L., McConnachie S., Plewes S., Moher C. O'Callaghan C., Kelloway L., McClure A., Salter K., Foley N.,	Health Quality Ontario Health Transformation 2014
Challenges Associated with Access to Stroke Rehabilitation for Patients with Cognitive Impairment in Toronto	Linkewich E., Tahair N., Donald M., Quant S.	International Stroke Conference Nashville – Feb 2015
Delays in Presentation to Stroke Prevention Clinic after TIA or Minor Stroke are Associated with Increased Recurrent Events, Hospitalization and Mortality	Blacquiere D., Perry J., Stotts G., Bourgoin A., Pugliese M., Sutherland J., Van Gaal S., Dowlatshahi D., Sharma M.	International Stroke Conference Nashville – Feb 2015
Knowledge Translation in Stroke Care in Toronto: Impact of member informed improvements to a Virtual Community of Practice	Donald M., Skrabka K., Avinoam G., Willems J., Sharp S., Linkewich E.	International Stroke Conference Nashville – Feb 2015
Predictors of Hospitalization in Patients with Minor Stroke and TIA	Stamplecoski M., Fang J., Hall R., Austin P.C., Tu J.V., Casaubon L.K., Kapral M. K., Silver F.L.	International Stroke Conference Nashville – Feb 2015
Trends in Ontario's Stroke Report Cards	Hall R., Linkewich E., Khan F., Wu J., Moore P., O'Callaghan C.	International Stroke Conference Nashville – Feb 2015
What's Important for Post-Stroke Community Re-integration? NS16 Viewpoints of Stroke Survivors and Service Providers in Ontario, Canada	Jermyn D., Verrilli S.	International Stroke Conference Nashville – Feb 2015

reports

Title	Author	Publication/Conference
2014 Ontario Stroke Evaluation Report: Targeting Quality Stroke Prevention and Care Spotlight on Secondary Stroke Prevention and Care	Hall R., Khan F., O'Callaghan C., Kapral M.K., Cullen A., Levi J., Wu J., Fang J., Bayley M., Nov 2014, June 2014 respectively	N/A
2014 LHIN Report Cards	Hall R., Khan F., O'Callaghan C., Kapral M.K., Cullen A., Levi J., Wu J., Fang J., Bayley M., Nov 2014, June 2014 respectively	N/A

Number of individuals suffering from the effects of stroke in Ontario:

2000
129,000

2013
170,000

2038
285,000+

auditor's report

July 6, 2015

To the Board of Directors of Ontario Stroke Network

We have audited the accompanying financial statements of Ontario Stroke Network, which comprise the statement of financial position as at March 31, 2015 and the statements of revenue and expenditures, changes in fund balances and cash flows for the year then ended, and the related notes, which comprise a summary of significant accounting policies and other explanatory information.

Management's responsibility for the financial statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit

auditor's report, cont.

also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of Ontario Stroke Network as at March 31, 2015 and the results of its operations and its cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations.

Chartered Professional Accountants, Licensed Public Accountants

financial statements

Statement of Financial Position As at March 31, 2015	**2015** **$**	**2014** **$**
Assets		
Current assets		
Cash	885,787	535,478
Accounts receivable	18,732	102,163
HST recoverable	39,073	54,295
	943,592	691,936
Liabilities		
Current liabilities		
Accounts payable and accrued liabilities	260,757	314,299
Repayable to Ministry of Health and Long-Term Care (note 3)	196,349	43,884
Payable to Heart and Stroke Foundation	96,799	135,458
	553,905	493,641
Fund Balances		
Unrestricted fund	290,366	98,974
Internally restricted fund	99,321	99,321
	389,687	198,295
	943,592	691,936
Commitments (note 4)		

financial statements

Statement of Revenue and Expenditures For the year ended March 31, 2015	**2015** **$**	**2014** **$**
Revenue		
Government grants (note 3)	2,454,372	2,792,709
Other contributions (note 3)	202,400	100,689
Cost recovery from Canadian Stroke Network (note 3)	-	29,202
Interest income	4,457	5,455
	2,661,229	2,928,055
Expenditures		
Grant disbursements	560,893	1,062,796
Salaries	999,990	823,140
General administration	562,532	736,582
Consultants	43,865	198,203
Meeting and travel	61,803	64,448
Training and education	35,177	23,497
Research awards	205,577	-
	2,469,837	2,908,666
Excess of revenue over expenditures for the year	191,392	19,389

The accompanying notes are an integral part of these financial statements.

financial statements

Statement of Changes in Fund Balances
For the year ended March 31, 2015

	Internally restricted $	Unrestricted $	2015 Total $	2014 Total $
Fund balances - Beginning of year	99,321	98,974	198,295	178,906
Excess of revenue over expenditures for the year	-	191,392	191,392	19,389
Fund balances - End of year	99,321	290,366	389,687	198,295

financial statements

Statement of Cash Flows For the year ended March 31, 2015	**2015** **$**	**2014** **$**
Cash provided by (used in)		
Operating activities		
Excess of revenue over expenditures for the year	191,392	19,389
Changes in working capital		
Accounts receivable	83,431	(102,163)
Grants receivable	-	21,399
HST recoverable	15,222	(16,487)
Prepaid expenses	-	-
Accounts payable and accrued liabilities	(53,542)	244,651
Repayable to Ministry of Health and Long-Term Care (note 3)	152,465	(260,746)
Payable to Heart and Stroke Foundation	(38,659)	74,807
Research grants and awards payable	-	(98,247)
	158,917	(136,786)
Increase (decrease) in cash during the year	350,309	(117,397)
Cash - Beginning of year	535,478	652,875
Cash - End of year	885,787	535,478

notes to financial statements

1. Nature of the organization

The Ontario Stroke Network (OSN) was incorporated under the Ontario Corporations Act as a corporation without share capital on June 12, 2008. It is a not-for-profit organization in accordance with the Income Tax Act (Canada Revenue Agency business number 857555296) and accordingly is exempt from income taxes, provided certain requirements of the Income Tax Act (Canada) are met. OSN is funded primarily by the Ministry of Health and Long-Term Care (MOHLTC). Other funding is provided by the Heart and Stroke Foundation of Canada and the Heart and Stroke Foundation of Ontario (collectively HSF).

Subsequent to year end, OSN received MoHLTC approval of funding up until September 30, 2015, as well as a commitment of funding beyond that period to support OSN's evolving mandate.

The purpose of OSN is to provide leadership and support of system coordination across the continuum of stroke care in Ontario, including health promotion, primary, secondary and tertiary prevention, pre-hospital care, emergency, diagnostic and acute care, rehabilitation, long-term care, and community reintegration.

Funded through MOHLTC Health System Accountability and Performance Division (Ontario Diabetes Strategy), OSN also has responsibility for the Heart and Stroke Hypertension Management Program (HMP) which is an evidence-informed, chronic disease management program designed to improve the diagnosis, management and control of hypertension according to clinical best practice guidelines.

OSN also provides provincial leadership and coordination for the Ontario Stroke System (OSS), including the following functions:

- support accountability, performance measurement, evaluation, and reporting on the progress of OSS;r
- ecommend and implement province-wide goals and standards for the continuum of stroke care, including health promotion and stroke prevention, acute care, recovery and reintegration processes;
- conduct ongoing strategic and operational planning, including trend and needs analysis;
- coordinate and enable relationships and initiatives across the continuum of stroke care to carry out the strategic and operational plans; and
- facilitate regional and provincial roles, responsibilities, activities and interfaces.

2. Summary of significant accounting policies

The financial statements are prepared in accordance with Canadian accounting standards for not-for-profit organizations (ASNPO) and include the following significant accounting policies.

Revenue recognition

OSN uses the deferral method of accounting for contributions. Accordingly, unrestricted contributions are recognized as revenue when received or receivable if the amount can be reasonably estimated and collection reasonably assured.

Restricted contributions, arising primarily from government grants, are recognized as revenue in the year in which the related expenditures are incurred.

Interest income represents interest amounts accumulated on the unrestricted cash balance during the year and is recognized as revenue when earned.

Cash

Cash represents cash in the bank. There are no restrictions on the cash balances held at the financial institution.

Research grants and awards

Research grants and awards are awarded on an annual basis for up to a two-year period and are expensed when the amounts are committed.

At the discretion of the funder, any unspent funds of terminated grants will become due on demand or are adjusted against instalments of future grants.

Internally restricted fund balances

The internally restricted fund balances represent funds that have been restricted by OSN's Board of Directors (the Board) as a contingency fund in the event that OSN ceases to exist. The purpose of the fund is to ensure that OSN has sufficient funds to pay costs related to adverse future circumstances. In the current year, no transfers were made from unrestricted to the internally restricted fund (2014 - $29,889).

Financial instruments and risk management

OSN initially measures its financial assets and financial liabilities at fair value. OSN subsequently measures all financial assets and financial liabilities at amortized cost.

Financial assets measured at amortized cost include cash, accounts receivable, grants receivable and HST recoverable.

Financial liabilities measured at amortized cost include accounts payable and accrued liabilities, repayable to MOHLTC, and payable to HSF.

Unless otherwise noted, it is management's opinion that OSN is not exposed to significant liquidity or credit risks arising from its financial instruments.

Use of estimates

The preparation of financial statements in accordance with ASNPO requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenditures during the reporting period. Actual results could differ from those estimates.

3. Deferred contributions

Deferred contributions include amounts that have been advanced by MOHLTC for various projects. These projects are managed and executed by OSN in partnership with other health organizations and stakeholders in Ontario. The contributions are recorded as deferred until the designated costs have been incurred.

The changes in the deferred contributions balance during the year are as follows:

	2015 $	2014 $
Balance - Beginning of year	-	-
Amounts received or receivable during the year	2,650,721	2,866,484
Amounts recognized as government grants	(2,454,372)	(2,792,709)
Amounts recognized as other contributions	-	(689)
Amounts recognized as cost recovery from Canadian Stroke Network	-	(29,202)
Amounts repayable in the year	(196,349)	(43,884)
Balance - End of year	-	-

4. Commitments

As at March 31, 2015, OSN has a contractual commitment to one of its vendors for development of a Prototype Vascular Health Assessment and Support Tool in the amount of $58,060. The amount is expected to be fully paid by August 2015.

osn board

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Chair

Ilsa Blidner
Vice-Chair

Lori Marshall
Treasurer

Mark Bayley
Champion, Evaluation

Leanne Casaubon
Champion, Best Practice

Sandra Black
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Mary Lewis
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Board Member

Mario Tino
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Tim Murphy
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Katie Lafferty
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Jill Cameron
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Executive Director

Tracey Carter
Manager, Business Operations

Linda Kelloway
Best Practice Leader

Patrick Moore
Manager, Communications

Ruth Hall
Management and Evaluation Specialist, ICES

Linda Nutbrown
Senior Administrative Assistant

hmp staff

Stephen Sundquist
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Christopher Beaudoin
Project Manager, Health Information Initiatives

Colleen Murphy
Project Manager, Primary Care Working Group

Pauline Therrien
Clinical Specialist, Outreach and Practice Support, HMP

Kathy Godfrey
Clinical Coordinator, HMP

Malaena Lynch
Senior Administrative Assistant

Sarah Winterton
Clinical Specialist

ontario stroke network
Advancing the Ontario Stroke System

2300 Yonge Street, Suite 1300, P.O. Box 2414
Toronto, ON M4P 1E4 • P: 647.943.3198 • F: 416.489.9343
info@ontariostrokenetwork.ca • www.ontariostrokenetwork.ca