



# Ontario Stroke Evaluation Report 2010

## Technical Report



April 2010

# **Ontario Stroke Evaluation Report 2010 Technical Report**

## **Authors**

**Ruth Hall, PhD**  
**Christina O'Callaghan, BAppSc (PT)**  
**Mark Bayley, MD, FRCPC**  
**Sarah Meyer, BA**  
**Ferhana Khan, MPH**  
**Ying Liu, MSc**  
**Beth Linkewich, OT Reg (Ont)**  
**Jim Lumsden, BScPT, MPA**  
**Deborah Willems, MScPT**

**April 2010**



## Publication Information

Published by the Institute for Clinical Evaluative Sciences (ICES)

© 2010 Institute for Clinical Evaluative Sciences

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the proper written permission of the publisher.

### Canadian cataloguing in publication data

Ontario Stroke Evaluation Report 2010—Technical Report

Includes bibliographical references.

Online: 978-0-9738553-9-5

Print: 978-1-926850-00-9

### How to cite this publication

Hall R, O'Callaghan C, Bayley M, Meyer S, Khan F, Liu Y, Linkewich B, Lumsden J, Willems D. *Ontario Stroke Evaluation Report 2010: Technical Report*. Toronto: Institute for Clinical Evaluative Sciences; 2010.

## About ICES

### Ontario's resource for informed health care decision-making

The Institute for Clinical Evaluative Sciences (ICES) is an independent, non-profit organization that produces knowledge to enhance the effectiveness of health care for Ontarians. Internationally recognized for its innovative use of population-based health information, ICES' evidence supports health policy development and guides changes to the organization and delivery of health care services.

Key to our work is our ability to link population-based health information, at the patient-level, in a way that ensures the privacy and confidentiality of personal health information. Linked databases reflecting 12 million of 30 million Canadians allow us to follow patient populations through diagnosis and treatment, and to evaluate outcomes.

ICES brings together the best and the brightest talent under one roof. Many of our scientists are not only internationally recognized leaders in their fields, but are also practicing clinicians who understand the grassroots of health care delivery, making the knowledge produced at ICES clinically-focused and useful in changing practice. Other team members have statistical training, epidemiological backgrounds, project management or communications expertise. The variety of skill sets and educational backgrounds ensures a multi-disciplinary approach to issues and creates a real-world mosaic of perspectives that is vital to shaping Ontario's future health care system.

ICES receives core funding from the Ontario Ministry of Health and Long-Term Care. In addition, our faculty and staff compete for peer-reviewed grants from federal funding agencies, such as the Canadian Institutes of Health Research, and project-specific funds are received from provincial and national organizations. These combined sources enable ICES to have a large number of projects underway, covering a broad range of topics. The knowledge that arises from these efforts is always produced independent of our funding bodies, which is critical to our success as Ontario's objective, credible source of *Evidence Guiding Health Care*.

### Institute for Clinical Evaluative Sciences

G1 06, 2075 Bayview Avenue

Toronto, ON M4N 3M5

Telephone: 416-480-4055

[www.ices.on.ca](http://www.ices.on.ca)

## Authors' Affiliations

**Ruth Hall, PhD**

*Ontario Stroke Network Evaluation Specialist, Institute for Clinical Evaluative Sciences*

**Christina O'Callaghan, BAppSc (PT)**

*Executive Director, Ontario Stroke Network*

**Mark Bayley, MD, FRCPC**

*Medical Director, Neuro Rehabilitation Program, Toronto Rehabilitation Institute  
Associate Professor, Faculty of Medicine, University of Toronto*

**Sarah Meyer, BA**

*Research Assistant, Ontario Stroke Network Evaluation Office, Institute for Clinical Evaluative Sciences*

**Ferhana Khan, MPH**

*Project Manager, Ontario Stroke Network Evaluation Office, Institute for Clinical Evaluative Sciences*

**Ying Liu, MSc**

*Analyst, Institute for Clinical Evaluative Sciences*

**Beth Linkewich, OT Reg (Ont)**

*District Stroke Coordinator and Telemedicine Manager, Muskoka Algonquin Healthcare  
Assistant Professor, Clinical Sciences, Northern Ontario School of Medicine*

**Jim Lumsden, BScPT, MPA**

*Program Manager, Champlain Regional Stroke Program, The Ottawa Hospital*

**Deborah Willems, MScPT**

*Regional Rehabilitation Coordinator, Southwestern Ontario Stroke Strategy, London Health Sciences  
Centre—St. Joseph's Health Care*

## Acknowledgments

This technical report and the ongoing measurement and monitoring of the Ontario Stroke System are the products of many collaborative efforts. The authors wish to acknowledge the contributions of members of the 2009/10 Stroke Evaluation Advisory Committee and the following individuals:

### Programming and Biostatistics

**Jiming Fang, PhD**

*Senior Analyst and Biostatistician, Institute for Clinical Evaluative Sciences*

### Content Support

**Barb Ansley, RN**

*Manager, Research and Program Evaluation, Rehabilitation/Seniors Program, Hamilton Health Sciences Centre*

**Nancy Cooper, BSc, MHSA**

*Director, Policy and Professional Development, Ontario Long-Term Care Association*

**Gabrielle deVeber, MD, FRCP(C), MHSc**

*Director, Children's Stroke Program, Division of Neurology, Hospital for Sick Children*

**Linda Kelloway, RN, MN, CNN(c)**

*Best Practices Leader, Ontario Stroke Network*

**Nathania Liem, MD, MSc, FRCPC**

*Physical Medicine and Rehabilitation Medical Director, Regional Rehabilitation Program, Windsor Regional Hospital*

**Cally Martin, MSc**

*Manager, Regional Stroke Program, Southeastern Ontario, Kingston General Hospital*

**Jocelyne McKellar, MSW, RSW**

*Rehabilitation and Community Re-engagement Coordinator, Toronto West Stroke Network, University Health Network*

**Ann-Marie Pontigon, BScH**

*Research Manager, Child Health Evaluative Sciences Program, Hospital for Sick Children*

**Maria Zak, RN, MN, ACNP**

*Clinical Nurse Specialist/Nurse Practitioner, Division of Neurology, Hospital for Sick Children*

### Knowledge Transfer, Institute for Clinical Evaluative Sciences

**Susan Shiller**

*Director*

**Deborah Creatura**

*Media Advisor*

**Laura Benben**

*Senior Web and Graphic Designer*

**Randy Samaroo**

*Graphic Designer*

**Nancy MacCallum**

*Knowledge Transfer Coordinator*

**Paulina Carrión**

*Knowledge Transfer Coordinator*

## **Financial Support**

**Canadian Stroke Network**

**Ontario Ministry of Health and Long-Term Care**

## Contents

<b>Publication Information</b> .....	<b>i</b>
<b>Authors' Affiliations</b> .....	<b>ii</b>
<b>Acknowledgments</b> .....	<b>iii</b>
<b>About the Organizations Involved in This Report</b> .....	<b>vi</b>
<b>About This Report</b> .....	<b>vii</b>
<b>Executive Summary</b> .....	<b>1</b>
<b>List of Exhibits—Adult Stroke</b> .....	<b>7</b>
<b>Findings and Exhibits—Adult Stroke</b> .....	<b>10</b>
Section 1. Emergency Department Care .....	11
Section 2. Acute Inpatient Care .....	24
Section 3. Inpatient Rehabilitation .....	43
Section 4. Home Care Services .....	60
Section 5. Patient Outcomes .....	62
<b>List of Exhibits—Paediatric Stroke</b> .....	<b>67</b>
<b>Findings and Exhibits—Paediatric Stroke</b> .....	<b>68</b>
Section 6. Acute Inpatient Care .....	69
Section 7. Patient Outcomes .....	75
<b>Appendices</b> .....	<b>80</b>
Appendix A—ICD-10 codes used in the report.....	80
Appendix B—Calculation of stroke patient discharge disposition from acute care.....	81
Appendix C—Rehabilitation Reporting System coding for discharge destination .....	82
Appendix D—Designated rehabilitation beds/facilities by Ontario Stroke System region .....	83
Appendix E—ICD-10 codes used to generate the paediatric ICD cohort.....	85
Appendix F—Supplementary data by Sub-Local Health Integration Network—List of Exhibits .....	86
Exhibits 1.1A–5.4A .....	87



## About the Organizations Involved in This Report

### The Ontario Stroke Network and the Ontario Stroke System

The Ontario Stroke Network (OSN) provides the provincial leadership and coordination for the Ontario Stroke System (OSS). The OSN recommends, implements and evaluates province-wide goals and standards for the continuum of stroke care, including health promotion and stroke prevention, acute care, recovery and reintegration processes; it also supports the evaluation of and reports on the progress of the OSS. The OSS is a collaborative system of a provider organization and partners who deliver stroke care across the province and care continuum.

The OSN and OSS share a common vision: fewer strokes and better outcomes. Since the inception of the OSS in 2000, significant improvements have occurred in stroke prevention, diagnosis and treatment across the continuum of care. There have been positive impacts on access to stroke-related services, the integration and coordination of stroke care, treatment for stroke, and client and provider satisfaction.

### The Canadian Stroke Network

The Canadian Stroke Network (CSN, [www.canadianstrokenetwork.ca](http://www.canadianstrokenetwork.ca)), one of Canada's Networks of Centres of Excellence, is a collaborative effort that brings together researchers, students, government, industry and the non-profit sector. The CSN was first funded in 1999 and is a not-for-profit corporation with headquarters at the University of Ottawa. The CSN puts Canada at the forefront of stroke research through its multi-disciplinary research program, high-quality training for Canadian scientists and clinicians, and national and global partnerships.

The CSN is dedicated to decreasing the physical, social and economic consequences of stroke on the individual and on society. In pursuit of this goal, it aims to:

- promote research excellence,
- train researchers and practitioners,
- maximize economic benefits,
- build national consensus on stroke policy, and
- create added value through partnerships.

In partnership with the Heart and Stroke Foundation of Canada, the CSN formally launched the Canadian Stroke Strategy (CSS) in 2006. The strategy promotes education and awareness about stroke, the need to use effective treatments, best practices in providing coordinated care in integrated stroke programs, the importance of delivering rehabilitation at the right time and in the right intensity, and the need to support stroke patients and their families in the community. The Ontario Ministry of Health and Long-Term Care provides funding to the CSN to measure, monitor and evaluate stroke care in Ontario.

### The Children's Stroke Program

The Children's Stroke Program at the Hospital for Sick Children is a health care, teaching and research centre dedicated to children with stroke; the program is affiliated with the University of Toronto. The stroke service and stroke clinic are designed to provide acute and chronic care management to inpatients and outpatients, respectively. Since its inception in 1992, the program has led multiple education and research initiatives, including two well-established registries: the Canadian Paediatric Ischemic Stroke Registry and the International Paediatric Stroke Study.

The director of the Children's Stroke Program, Dr. Gabrielle deVeber, is a member of the Canadian Stroke Network and the Ontario Stroke Strategy.

## About This Report

### Purpose, Audience and Aims

In April 2003, the Ontario Ministry of Health and Long-Term Care launched the Ontario Stroke Strategy Monitoring and Evaluation Initiative. The purpose of the initiative was to address the need to monitor and evaluate the progress of the Ontario Stroke System (OSS) at the provincial, Local Health Integration Network (LHIN), regional, organizational and patient levels and to report on improvements and gaps in stroke care.

Over the past three to four years, the OSS has been dedicated to driving system change and implementing best practices across the province. The goal of the initiative is to measure changes and outcomes attributable to the OSS. This report reflects trends in stroke health service utilization and mortality in Ontario from 2003/04 to 2007/08.

The OSN Stroke Evaluation Advisory Committee (SEAC), in collaboration with the OSN Evaluation Specialist, is responsible for measuring, monitoring and evaluating the progress of the OSS by monitoring changes in stroke prevalence, stroke-related health service utilization, best practices and outcomes of stroke care.<sup>1</sup>

The 2010 SEAC Technical Report provides a comprehensive look at the variation in stroke care by stroke care sectors, including Emergency Department, Acute Inpatient, Inpatient Rehabilitation and Home Care Services. It builds on the template of the 2006 Technical Report but excludes data from the Registry of the Canadian Stroke Network, as that information is reported quarterly and annually to the Regional Stroke Centres and relevant OSS stakeholders, and is specific to 11 stroke centres in the province. This report uses limited data linkage across the administrative databases where appropriate, but more needs to be done to provide a more comprehensive picture of stroke patients (aged 0 to 108 years) as they move through the stroke care continuum. We intend to provide data from stroke patients residing in long-term or complex continuing care homes in the next edition of the SEAC Technical Report.

New to this report is the use of happy, neutral and sad faces. The faces relate to provincial performance over time on processes and outcomes of stroke care. A happy face indicates improvement a neutral face indicates no change, and a sad face indicates a need for investigation and/or improvement. In general, the exhibits in this Technical Report present the data by the 14 Local Health Integration Networks (LHINs) and 106 sub-LHINs, 11 OSS regions and the three types of stroke facility designation (regional, district and enhanced district stroke centres).

Since the report provides detailed information on progress across the care continuum and at multiple levels of analysis, the primary audience is the OSN and OSS regions. The OSS regions can compare results year over year for their LHINs/regions and also compare performance to other LHINs/regions. The OSS regions can use this report to provide a tailored region/LHIN-specific report on progress and gaps in Ontario's stroke care. All LHINs have identified chronic disease prevention and management as one of their strategic priorities. Stroke is a chronic disease and individuals that suffer stroke frequently have multiple co-morbidities. For example, according to the 2003 Canadian Community Health Survey more than 60% of stroke patients have hypertension, 45% have heart disease, 53% suffer from arthritis and 23% have diabetes.<sup>2</sup> Diabetes is currently the chronic condition that most LHINs have made the focus of their chronic disease prevention and management strategies. People with diabetes have a three-fold increased risk of stroke,<sup>3</sup> and 80% of them die from heart disease or stroke.

---

<sup>1</sup> As follow-up to an extensive strategic planning process, the Ontario Stroke Network (OSN) was established in August 2008 to provide coordination and leadership for the OSS, including evaluation and reporting responsibilities. The Stroke Evaluation Advisory Committee (SEAC) is now a committee of the Ontario Stroke Network Provincial Coordinating Council.

<sup>2</sup> Statistics Canada. Canadian Community Health Survey (CCHS), 2003.

<sup>3</sup> Baker D, Martin MM. Managing diabetes. In: *Stroke Prevention in Clinical Practice*. London: Springer; 2007. p. 65.

## Executive Summary

### Stroke Best Practices: How Does Ontario Measure Up?

#### Summary of Key Findings

- ▶ Annual age- and sex-adjusted first-hospital-visit rate for stroke/TIA (transient ischemic attack) per 1,000 population decreased by 23% between 2003/04 and 2007/08 in Ontario, despite an expected increase due to the aging population.
- ▶ Annual age- and sex-adjusted inhospital mortality rates due to stroke decreased by 6% between 2003/04 and 2007/08.
- ▶ More patients received care in stroke centres. More than half were cared for in non-designated centres. Patients admitted for inpatient acute stroke care at non-designated centres were less likely to be discharged to inpatient rehabilitation and have higher mortality.
- ▶ For stroke admissions, the wait time for carotid interventions was reduced significantly; in 2003/04 the median wait time was 41 days, and in 2007/08, it had dropped to 15 days.
- ▶ There was an overall increase in the proportion of stroke patients discharged to inpatient rehabilitation following an acute stroke hospitalization between 2003/04 and 2007/08 (from 20% to 23%), and a decrease going to long-term care (from 8.5% to 7%). However, it is estimated that the proportion discharged to inpatient rehabilitation should be closer to 40%.
- ▶ There was substantial variation in stroke outcomes and practice across Ontario's 14 Local Health Integration Networks (LHINs).

### Review of Progress by Sector




Best practices have been well defined for stroke care both in Canada and internationally. The following is an overview of progress on the status of practices that are important to optimizing outcomes for stroke patients in Ontario.

#### Acute Stroke Care

##### Best Practice 1

**Stroke can be prevented by better management of risk factors** such as hypertension, heart disease, diabetes and smoking.

#### Findings:

-  The annual age- and sex-adjusted first-hospital-visit rate for stroke/TIA per 1,000 population (measured by emergency department visits) dropped by 7%, from 1.5 visits in 2003/04 to 1.4 visits in 2007/08. This may reflect several trends, including reduced smoking, better blood pressure control and increasing secondary prevention clinic availability.
-  There was modest variability in the annual incidence of stroke/TIA-related emergency department visits per 1,000 population, with the highest rates in LHINs in Northern and Southeastern Ontario at 1.6 visits and the lowest rate in Mississauga Halton LHIN at 1.1 visits.
-  Province-wide, the annual incidence rate of hospitalization for stroke per 1,000 population dropped by 23%, from 1.3 hospitalizations in 2003/04 to 1.0 hospitalizations in 2007/08.




### Recommendations (Best Practice 1)

1. Health care providers should continue to aggressively focus on reduction of risk factors for stroke and advocate for reduction in salt intake that is linked to high blood pressure.
2. Both primary and secondary prevention programs and clinics should be expanded as these efforts to prevent stroke appear to be working and may continue to reduce readmissions.
3. More work needs to be done to improve access to best-practice stroke prevention and care, including access to designated stroke facilities.
4. LHINs with the highest incidence of stroke should continue to investigate the prevalence of risk factors and access to prevention/community services. ■

### Best Practice 2

**Stroke is a medical emergency;** the faster patients get to hospital, the better their chances of receiving treatments that could help reverse the effects of the stroke. There should be a coordinated emergency response system, and all members of the public should be able to recognize the signs and symptoms of stroke; these include the sudden onset of weakness, difficulty speaking, vision problems, headache and dizziness.

### Findings:

-  Overall, there was an increase in the proportion of stroke patients arriving at acute hospitals by ambulance: from 53% in 2003/04 to 55% in 2007/08.
-  There was a 25% increase in the proportion of patients arriving by ambulance at the stroke centres: from 39% in 2003/04 to 49% in 2007/08. The increase in the proportion of stroke patients arriving at designated stroke centres by ambulance may reflect the positive impact of new stroke centre designations, pre-hospital medical redirect protocols and the provincial paramedic prompt card that have occurred since 2003/04.
-  The extent of variation in the proportion of patients arriving at the emergency department by ambulance decreased across the LHINs from 17 percentage points (40–57%) in 2003/04 to 12 percentage points (47–59%) in 2007/08.




### Recommendations (Best Practice 2)

1. The recent decision of the Ontario Ministry of Health Promotion to fund the warning signs campaign is to be commended; however, the campaign needs to be sustained. The Ontario Stroke Network will continue to monitor the campaign to provide evidence of its impact.
2. The revised provincial Emergency Medical System stroke prompt card should be evaluated to determine if more suspected stroke patients have access to time-sensitive therapies at stroke centres and Telestroke sites. ■

Best Practice 3

**Acute stroke patients should be cared for by a team of experts in stroke**, preferably in a special dedicated unit. Expert care results in reduced complications and decreased death and disability.

Findings:

-  Fifty-two percent of stroke patients in Ontario were treated in facilities other than designated stroke centres in 2007/08.
-  Ontario's age- and sex-adjusted in-hospital stroke/TIA mortality rate decreased from 15.8% in 2003/04 to 14.8% in 2007/08.
-  Variation in the age- and sex-adjusted in-hospital mortality rate varied from 17.5% in the Southeast LHIN to 10.3% in the Central West LHIN in 2007/08.





**Recommendations** (Best Practice 3)

1. There should be continued efforts to transport persons with stroke to hospitals with specialized stroke units to continue the trend of reduced mortality due to stroke.
2. Hospitals with adequate volumes of stroke patients (more than 100 cases per year) should be encouraged to establish stroke units. ■

Best Practice 4

**Patients who present with symptoms suggestive of minor stroke or transient ischemic attack must undergo a comprehensive evaluation** to confirm the diagnosis and begin treatment to reduce the risk of major stroke as soon as is appropriate to the clinical situation.

Findings:

-  The proportion of patients discharged from an inpatient stay with an “unable to determine” (UTD) stroke decreased from 32% in 2003/04 to 25% in 2007/08. The decrease was most notable at the district stroke centres.
-  Two-thirds (66.4%) of strokes categorized as UTD were located outside regional stroke centres.
-  Thirty- and 90-day non-elective readmission rates for stroke or TIA increased between 2003/04 and 2006/07. Thirty-day age- and sex-adjusted stroke-related readmissions increased from 6.4% in 2003/04 to 6.9% in 2006/07. Ninety-day age- and sex-adjusted stroke-related readmissions increased from 8.3% in 2003/04 to 8.6% in 2006/07. Non-designated facilities had higher re-admission rates than designated stroke hospitals. Facilities in the Central LHIN had the lowest 90-day non-elective stroke-related readmission rate in 2006/07 (6.3%), while facilities in the Champlain LHIN had the highest rate that year (11.4%) in 2006/07.
-  The all-cause age- and sex-adjusted mortality rate within 30 days of discharge for stroke or TIA was 12.7% in 2006/07 compared to 13.4% in 2003/04. Due to the nature of hemorrhagic stroke, mortality rates were more than double compared to ischemic stroke.

**Recommendations** (Best Practice 4)

1. All people with mild stroke must be evaluated to identify the cause of stroke. This is another reason for referral to experts at specialized stroke centres or stroke prevention clinics.
2. All individuals with mild stroke who are not admitted to hospital should be followed up in a secondary prevention clinic, as the time of highest risk of major stroke occurs in the first 30 to 90 days after the initial stroke event. ■

### Best Practice 5

Patients with transient ischemic attack or non-disabling stroke and 70–99% internal carotid artery stenosis (narrowing) should be offered **carotid endarterectomy** within **two weeks of the attack or stroke**, unless contraindicated.

#### Findings:



The time to a carotid intervention (carotid stenting or carotid endarterectomy) within six months of an initial stroke decreased dramatically between 2003/04 and 2007/08. The median wait time was 41 days in 2003/04, dropping to 15 days in 2007/08. Some LHINs had patients wait less than 10 days in 2007/08.



In 2007/08, the variation in median days to carotid intervention across LHINs ranged from seven days for patients hospitalized in the North Simcoe Muskoka LHIN to 34 days for patients hospitalized in the Waterloo Wellington LHIN.

#### Recommendations (Best Practice 5)

1. Efforts to ensure carotid artery imaging is completed in a timely fashion with prompt referral to a surgeon should be continued.
2. Wait times for carotid endarterectomy should be monitored. ■

### Best Practice 6

Swallowing difficulties are common after stroke and can lead to choking and pneumonia. **Patients with stroke should have their swallowing ability screened** using a simple, valid and reliable bedside testing protocol as part of their initial assessment, and before initiating oral intake of medications, fluids or food.

#### Findings:



Provincially, pneumonia rates across all hospital designations decreased from 1.68% in 2003/04 to 1.25% in 2007/08. A rate of 1.25% is much lower than reported in the literature.



Improvements were seen at the non-designated centres, suggesting that best practices are reaching beyond the designated centres.



In 2007/08, facilities in the Mississauga Halton LHIN had the highest rate of in-hospital pneumonia among stroke patients (2.1%); facilities in the Waterloo Wellington LHIN had the lowest rate (0.57%).

#### Recommendation (Best Practice 6)






1. The Ontario Stroke System should continue its efforts to have best practices for screening and management of dysphagia implemented. ■

## Rehabilitation

### Best Practice 1

All patients with stroke who are admitted to hospital and who require rehabilitation **should be treated in a comprehensive or rehabilitation stroke unit** by an interdisciplinary team.

#### Findings:

-  The proportion of stroke/TIA patients discharged to inpatient rehabilitation increased from 20% in 2003/04 to 23% in 2007/08. The variation in the proportion of stroke patients discharged to inpatient rehabilitation following an acute stroke hospitalization varied widely across the LHINs in 2007/08, from a low of 14.1% in the Central West LHIN to 32.2% in the Erie St. Clair LHIN. Patients admitted for inpatient acute stroke care at non-designated centres were less likely to be discharged to inpatient rehabilitation. The benchmark for this is 39% based on data from the regional stroke centres in the Registry of the Canadian Stroke Network.
-  The mean waiting time from stroke onset to admission to an inpatient rehabilitation facility was 21 days in 2003/04, decreasing to 19 days in 2007/08. There was marked regional variation in wait times for rehabilitation admission.
-  Most patients made significant improvements in their ability to live independently.
-  Following inpatient rehabilitation in 2007/08, 45% of patients were discharged home with services, a decrease from 46% in 2006/07.
-  There was wide institutional variation in mean change in Functional Independence Measure (FIM<sup>®</sup>) scores and length of stay. Specialized rehabilitation centres had lower changes in functional improvement per day compared to general rehabilitation centres.




#### Recommendations (Best Practice 1)

1. A structured approach for determining stroke rehabilitation needs is required to ensure equitable access to inpatient rehabilitation.
2. General and specialized rehabilitation hospitals displayed differences in length of stay and FIM<sup>®</sup> scores within Rehabilitation Patient Groups (RPGs). Staffing levels and therapy intensity should be compared in these facilities to better understand the differences. ■

### Best Practice 2

Survivors of a severe stroke **should be reassessed at regular intervals** for their rehabilitation needs.

#### Findings:

-  It is generally agreed that the target FIM<sup>®</sup> score for admission to stroke rehabilitation is 40 to 80. A provincial median admission FIM<sup>®</sup> score of 77 (average 76) on admission to inpatient rehabilitation suggests that a notable proportion of patients in the severe group (FIM<sup>®</sup> score less than 60) did not have access to inpatient rehabilitation. This also suggests that patients with mild disability were going to inpatient rehabilitation due to a lack of outpatient services and/or pressures on inpatient rehabilitation centres to reduce length of stay.
-  There was modest variation in admission median FIM<sup>®</sup> scores on admission to inpatient rehabilitation across the LHINs in 2007/08, ranging from 73 for stroke patients in the Central East LHIN to 89 for stroke patients in the Champlain LHIN.
-  The proportion of patients going to long-term care facilities following inpatient rehabilitation decreased from 13% in 2003/04 to 9% in 2007/08.

#### Recommendations (Best Practice 2)

1. The admission FIM<sup>®</sup> score trend should be monitored closely.
2. Rehabilitation programs should identify and reduce barriers to admission for severe stroke patients, as evidence indicates these patients stand to benefit from rehabilitation. Without access to rehabilitation services, they will continue to be a major source of acute care Alternative Level of Care days. ■

## Community Integration

### Best Practice 1

People with stroke living in the community who have difficulty with activities of daily living **should have access, as appropriate, to therapy services** to improve or prevent deterioration in these activities.

### Findings:



The mean number of rehabilitation services offered by Community Care Access Centres (CCACs) to patients discharged with an acute stroke hospitalization in 2006/07 was four visits for physical therapy, three for occupational therapy and three for speech-language pathology. There was little variation in service intensity across the LHINs; the Northeast LHIN provided, on average, 3.0 physical therapy visits per stroke client, and the Erie St. Clair LHIN provided 5.2 visits per stroke client.



CCAC service intensity was low and likely inadequate to make functional changes in those who had difficulty living independently.



There is no database collecting information on outpatient therapy offered in ambulatory settings at Ontario's hospitals and clinics.

### Recommendations (Best Practice 1)

1. Outpatient facilities should be surveyed to identify those providing therapies of benefit to stroke patients.
2. The National Ambulatory Care Reporting System (NACRS) database maintained by the Canadian Institute for Health Information needs to evolve to capture ambulatory rehabilitation being delivered at inpatient facilities (both acute and rehabilitation).
3. Investment in CCAC rehabilitation services could potentially reduce rates of readmission to hospitals and admission to long-term care institutions. ■



## List of Exhibits

### Adult Stroke

#### 1. Emergency Department Care

**Exhibit 1.1** Number and percentage of stroke/TIA patients and patient visits to the emergency department, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 1.2** Number and percentage of stroke/TIA patients arriving at the emergency department of regional stroke centres, district stroke centres or non-designated centres, in Ontario and by stroke type, OSS region and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 1.3** Age- and sex-adjusted rates of stroke/TIA patients arriving in the emergency department per 1,000 LHIN population, in Ontario and by Local Health Integration Network, 2003/04 to 2007/08

**Exhibit 1.4** Number and percentage of stroke/TIA patients and patient visits to hospital by ambulance, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 1.5** Number and percentage of stroke/TIA patients presenting to the emergency department, in Ontario and by age group and sex, 2003/04, 2006/07 and 2007/08

**Exhibit 1.6.1** Emergency department length of stay for stroke/TIA, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 1.6.2** Emergency department length of stay for ischemic stroke, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 1.6.3** Emergency department length of stay for transient ischemic attack, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 1.6.4** Emergency department length of stay for intracerebral hemorrhage, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 1.6.5** Emergency department length of stay for subarachnoid hemorrhage, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

#### 2. Acute Inpatient Care

**Exhibit 2.1** Number and percentage of stroke/TIA patients admitted to acute care hospitals, in Ontario and by age group and sex, 2003/04, 2006/07 and 2007/08

**Exhibit 2.2** Number and percentage of patients admitted to acute care hospitals with a diagnosis of stroke/TIA, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 2.3** Number and percentage of stroke/TIA patients admitted to regional stroke centres, district stroke centres and non-designated centres, in Ontario and by stroke type, OSS region and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 2.4** Age- and sex-adjusted inpatient admission rates per 1,000 LHIN population, in Ontario and by Local Health Integration Network, 2003/04 to 2007/08

**Exhibit 2.5.1** Inpatient length of stay for stroke/TIA, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 2.5.2** Acute inpatient length of stay for ischemic stroke, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 2.5.3** Acute inpatient length of stay for transient ischemic attack, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 2.5.4** Acute inpatient length of stay for intracerebral hemorrhage, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 2.5.5** Acute inpatient length of stay for subarachnoid hemorrhage, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 2.5.6** Acute inpatient length of stay for ill-defined stroke, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 2.6** Age- and sex-adjusted in-hospital complication rates for pneumonia among stroke/TIA patients, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 2.7** Discharge destination of stroke/TIA patients following an acute hospitalization, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 2.8** Time to carotid intervention within six months of hospitalization for stroke/TIA, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04 to 2007/08

### **3. Inpatient Rehabilitation**

**Exhibit 3.1** Age and sex characteristics of stroke rehabilitation inpatients, in Ontario, 2003/04, 2006/07 and 2007/08

**Exhibit 3.2.1** Inpatient stroke rehabilitation by time to admission, referral source and Rehabilitation Client Group (RCG), in Ontario, 2003/04, 2006/07 and 2007/08

**Exhibit 3.2.2** Distribution of stroke rehabilitation inpatients in Rehabilitation Client Group (RCG) 1, by Functional Related Group, in Ontario, 2003/04, 2006/07 and 2007/08

**Exhibit 3.3.1** Stroke inpatient rehabilitation patient groups (RPGs), in Ontario and by Local Health Integration Network, 2006/07

**Exhibit 3.3.2** Stroke inpatient rehabilitation patient groups (RPGs), in Ontario and by Local Health Integration Network, 2007/08

**Exhibit 3.4** Inpatient stroke rehabilitation profiles, by facility type, in Ontario, 2006/07 and 2007/08

**Exhibit 3.5.1** Functional Independence Measure (FIM<sup>®</sup>) score, length of stay, and discharge status among stroke patients admitted to inpatient rehabilitation, in Ontario, 2003/04, 2006/07 and 2007/08

**Exhibit 3.5.2** Functional Independence Measure (FIM<sup>®</sup>) score, length of stay, and discharge status of stroke inpatient rehabilitation patients, in Ontario and by time from acute care discharge to inpatient rehabilitation admission, 2003/04, 2006/07 and 2007/08

**Exhibit 3.5.3** Functional Independence Measure (FIM<sup>®</sup>) efficiency, in Ontario and by Rehabilitation Patient Group (RPG) and type of inpatient rehabilitation facility, 2006/07 and 2007/08

**Exhibit 3.5.4** Length of stay in inpatient rehabilitation facilities, in Ontario and by Rehabilitation Patient Group (RPG), 2006/07 and 2007/08

**Exhibit 3.6** Inpatient stroke rehabilitation profiles, in Ontario and by Local Health Integration Network, 2003/04, 2006/07 and 2007/08

**Exhibit 3.7.1** Inpatient rehabilitation facility stroke patient profiles, in Ontario and by OSS region and National Rehabilitation Reporting System facility number, 2006/07

**Exhibit 3.7.2** Inpatient rehabilitation facility stroke patient profiles, in Ontario and by OSS region and National Rehabilitation Reporting System facility number, 2007/08

#### 4. Home Care Services

**Exhibit 4.1** Number and percentage of clients (active and new) receiving home care services following an acute hospitalization for stroke, in Ontario and by Local Health Integration Network, 2006/07 and 2007/08

**Exhibit 4.2** Support services provided to home care clients (active and new) following an acute hospitalization for stroke, in Ontario and by Local Health Integration Network, 2006/07 and 2007/08

#### 5. Patient Outcomes

**Exhibit 5.1** Age- and sex-adjusted readmission rates within 30 days following a stroke/TIA, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04 to 2006/07

**Exhibit 5.2** Age- and sex-adjusted readmission rates within 90 days following stroke/TIA, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04 to 2006/07

**Exhibit 5.3** Age- and sex-adjusted in-hospital mortality rates following stroke/TIA, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04 to 2007/08

**Exhibit 5.4** Age- and sex-adjusted mortality rates at 30 days following stroke/TIA, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04 to 2006/07

## Findings and Exhibits—Adult Stroke

## Findings and Exhibits—Adult Stroke

### 1. Emergency Department Care

#### Emergency Department Volumes

##### Findings:

- ▶ **Exhibit 1.1:** There was no notable change in overall emergency department (ED) visits. From 2003/04 to 2007/08, there was a gradual increase in the number of patients arriving at the EDs of designated stroke centres and a 7% decrease in arrivals at the EDs of non-designated centres (NDCs). However, over half (58%) of stroke patients in Ontario went to emergency departments in NDCs in 2007/08.
- ▶ **Exhibit 1.2:** ED visits by OSS hospital designation and stroke type indicate that use of the “unable to determine” diagnostic code for stroke decreased from 2003/04 across all designations and particularly in the regional stroke centres. In the Central, Central East and Central West Local Health Integration Networks, 75%, 86% and 100%, respectively, of stroke patients arrived at the EDs of NDCs, compared to 28% in the Erie St. Clair LHIN and 37% in the North East LHIN.
- ▶ **Exhibit 1.3:** There was a decrease in the number of stroke-related ED visits per 1,000 population at the provincial level. In 2007/08, the age- and sex-adjusted rate was 1.4 per 1,000 population compared to 1.5 per 1,000 population in 2003/04. There was and continues to be modest variation across the LHINs since 2003/04. In 2007/08, the Mississauga Halton LHIN had the lowest rate of stroke-related ED visits (1.1 per 1,000 population) and the North East, North West and South East LHINs had the highest rates (1.6 per 1,000 population).

##### Conclusions and recommendations:

Between 2003/04 and 2007/08, ED volumes increased only slightly; this is less than was expected given the aging population. On a per population basis, age- and sex-adjusted ED visits for stroke decreased by 7%. Stroke prevention efforts may be having an effect overall, and the decreasing variation across the LHINs suggests that the increasing availability of secondary stroke prevention clinics may be influencing this trend.

Although it appears that best practices are having more influence on access to stroke care at designated stroke centres, the majority of stroke patients were admitted to EDs in non-designated centres. More needs to be done to improve stroke patient access to designated stroke facilities. The proposed revision to the paramedic prompt card should assist in more patients being transported to stroke centres.

The quality of stroke administrative data is improving. Within routinely collected data, priority should be given to eliminating the unidentified stroke type. Improvements at both the diagnostic and health records data-capture levels are recommended.

---

## Arrival by Ambulance

### Findings:

- ▶ **Exhibit 1.4:** There was a 4% increase in the proportion of stroke patients arriving at the ED by ambulance. There was a 24% relative increase in the proportion of patients arriving by ambulance to designated stroke centres (39% in 2003/04 and 48% in 2007/08).

### Conclusions and recommendations:

The increased proportion of stroke patients arriving at hospitals by ambulance is promising, and may be linked to the public service advertising campaign of the Heart and Stroke Foundation of Ontario, which was televised intermittently from October 2003 to April 2007. In light of a recent announcement by the Ministry of Health and Long-Term Care to provide funding to the HSFO in 2010/11 for further advertising, the Ontario Stroke Network will continue to monitor the campaign to provide evidence of its impact.

The dramatic increase in the proportion of stroke patients arriving at stroke centres by ambulance may reflect the positive impact of new stroke centre designations, pre-hospital medical redirect protocols and the paramedic prompt card, all occurring since 2003/04.

Despite these successes, almost one of every two patients (45.4%) is not transported by ambulance, reflecting an ongoing need to increase public awareness and potentially update the current campaign.

---

## Age and Sex of Patients Presenting to the ED

- ▶ **Exhibit 1.5:** There was an 8% relative increase in the prevalence of 19–55 and 56–65 year-olds presenting to the ED with suspected stroke or transient ischemic attack.
- 

## Emergency Department Length of Stay

### Findings:

- ▶ **Exhibit 1.6:** There was no change in emergency department length of stay. It is notable that the median length of stay (LOS) at the regional stroke centres decreased by almost one hour between 2003/04 and 2007/08.

### Conclusions and recommendations:

Overall, ED LOS has not increased in light of bed and system pressures—a positive trend. The Ontario Stroke Network will continue to monitor this, as ED access is a priority of the Ministry of Health and Long-Term Care.

---

**Exhibit 1.1 Number and percentage of stroke/TIA patients<sup>1</sup> and patient visits<sup>2</sup> to the emergency department, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Sub-Group	2003/04 Patients n (%)	2006/07 Patients n (%)	2006/07 Patient Visits n (%)	2007/08 Patients n (%)	2007/08 Patient Visits n (%)
<b>Ontario</b>	<b>19,061</b>	<b>19,178</b>	<b>21,439</b>	<b>19,395</b>	<b>21,689</b>
<b>Stroke Type</b>					
Intracerebral hemorrhage	1,144 (6.0)	1,180 (6.2)	1,326 (6.2)	1,313 (6.8)	1,456 (6.7)
Ischemic stroke <sup>3</sup>	10,664 (55.9)	10,572 (55.1)	11,677 (54.5)	10,492 (54.1)	11,617 (53.6)
Subarachnoid hemorrhage	623 (3.3)	674 (3.5)	828 (3.9)	721 (3.7)	866 (4.0)
Transient ischemic attack	6,630 (34.8)	6,752 (35.2)	7,608 (35.5)	6,869 (35.4)	7,750 (35.7)
<b>Ontario Stroke System Region</b>					
Central East	2,833 (14.9)	2,960 (15.4)	3,292 (15.4)	3,053 (15.7)	3,398 (15.7)
Central South	3,308 (17.4)	3,213 (16.8)	3,580 (16.7)	3,331 (17.2)	3,684 (17.0)
East – Champlain	2,020 (10.6)	2,047 (10.7)	2,414 (11.3)	2,032 (10.5)	2,383 (11.0)
Northeast	1,162 (6.1)	1,087 (5.7)	1,201 (5.6)	1,100 (5.7)	1,224 (5.6)
Northwest	486 (2.5)	496 (2.6)	556 (2.6)	442 (2.3)	493 (2.3)
South East	1,015 (5.3)	950 (5.0)	1,084 (5.1)	1,011 (5.2)	1,162 (5.4)
Southwest	2,599 (13.6)	2,760 (14.4)	3,069 (14.3)	2,679 (13.8)	3,003 (13.8)
Toronto – North & East	1,336 (7.0)	1,328 (6.9)	1,437 (6.7)	1,360 (7.0)	1,492 (6.9)
Toronto – Southeast	976 (5.1)	996 (5.2)	1,167 (5.4)	1,018 (5.2)	1,178 (5.4)
Toronto – West	1,419 (7.4)	1,432 (7.5)	1,583 (7.4)	1,450 (7.5)	1,610 (7.4)
West GTA	1,907 (10.0)	1,909 (10.0)	2,056 (9.6)	1,919 (9.9)	2,062 (9.5)
<b>Ontario Stroke System Classification</b>					
Regional stroke centre	4,302 (22.6)	4,851 (25.3)	5,527 (25.8)	5,033 (25.9)	5,783 (26.7)
District stroke centre	2,589 (13.6)	2,970 (15.5)	3,319 (15.5)	3,028 (15.6)	3,359 (15.5)
Non-designated	12,170 (63.8)	11,357 (59.2)	12,593 (58.7)	11,334 (58.4)	12,547 (57.8)
<b>Local Health Integration Network</b>					
1. Erie St. Clair	1,190 (6.2)	1,120 (5.8)	1,227 (5.7)	1,064 (5.5)	1,158 (5.3)
2. South West	1,409 (7.4)	1,640 (8.6)	1,842 (8.6)	1,615 (8.3)	1,845 (8.5)
3. Waterloo Wellington	882 (4.6)	885 (4.6)	975 (4.5)	884 (4.6)	976 (4.5)
4. Hamilton Niagara Haldimand Brant	2,426 (12.7)	2,328 (12.1)	2,605 (12.2)	2,447 (12.6)	2,708 (12.5)
5. Central West	787 (4.1)	647 (3.4)	696 (3.2)	673 (3.5)	730 (3.4)
6. Mississauga Halton	1,120 (5.9)	1,262 (6.6)	1,360 (6.3)	1,246 (6.4)	1,332 (6.1)
7. Toronto Central	1,808 (9.5)	1,962 (10.2)	2,243 (10.5)	2,078 (10.7)	2,368 (10.9)
8. Central	1,682 (8.8)	1,743 (9.1)	1,880 (8.8)	1,728 (8.9)	1,908 (8.8)
9. Central East	2,221 (11.7)	2,220 (11.6)	2,470 (11.5)	2,191 (11.3)	2,427 (11.2)
10. South East	1,015 (5.3)	950 (5.0)	1,084 (5.1)	1,011 (5.2)	1,162 (5.4)
11. Champlain	2,020 (10.6)	2,047 (10.7)	2,414 (11.3)	2,032 (10.5)	2,383 (11.0)
12. North Simcoe Muskoka	853 (4.5)	791 (4.1)	886 (4.1)	884 (4.6)	975 (4.5)
13. North East	1,162 (6.1)	1,087 (5.7)	1,201 (5.6)	1,100 (5.7)	1,224 (5.6)
14. North West	486 (2.5)	496 (2.6)	556 (2.6)	442 (2.3)	493 (2.3)

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack (TIA).

<sup>1</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>2</sup> Analysis includes all visits (i.e., a patient may be counted more than once).

<sup>3</sup> Ischemic stroke includes ICD-10 codes H341, I63 and I64.

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

**Exhibit 1.2 Number and percentage of stroke/TIA patients arriving at the emergency department of regional stroke centres, district stroke centres or non-designated centres, in Ontario and by stroke type, OSS region and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Sub-Group	2003/04				2006/07				2007/08			
	All n (%)	Regional Stroke Centre n (%)	District Stroke Centre n (%)	Non-designated n (%)	All n (%)	Regional Stroke Centre n (%)	District Stroke Centre n (%)	Non-designated n (%)	All n (%)	Regional Stroke Centre n (%)	District Stroke Centre n (%)	Non-designated n (%)
<b>Ontario</b>	<b>19,064</b>	<b>4,303</b>	<b>2,589</b>	<b>12,172</b>	<b>19,178</b>	<b>4,851</b>	<b>2,970</b>	<b>11,357</b>	<b>19,395</b>	<b>5,033</b>	<b>3,028</b>	<b>11,334</b>
<b>Stroke Type</b>												
Intracerebral hemorrhage	1,144 (6.0)	375 (8.7)	125 (4.8)	644 (5.3)	1,180 (6.2)	363 (7.5)	192 (6.5)	625 (5.5)	1,313 (6.8)	399 (7.9)	215 (7.1)	699 (6.2)
Ischemic stroke	978 (5.1)	304 (7.1)	151 (5.8)	523 (4.3)	1,428 (7.4)	406 (8.4)	378 (12.7)	644 (5.7)	1,662 (8.6)	608 (12.1)	385 (12.7)	669 (5.9)
Subarachnoid hemorrhage	623 (3.3)	206 (4.8)	70 (2.7)	347 (2.9)	674 (3.5)	215 (4.4)	77 (2.6)	382 (3.4)	721 (3.7)	228 (4.5)	78 (2.6)	415 (3.7)
Transient ischemic attack	6,630 (34.8)	1,352 (31.4)	925 (35.7)	4,353 (35.8)	6,752 (35.2)	1,531 (31.6)	992 (33.4)	4,229 (37.2)	6,869 (35.4)	1,560 (31.0)	1,001 (33.1)	4,308 (38.0)
Unable to determine	9,689 (50.8)	2,066 (48.0)	1,318 (50.9)	6,305 (51.8)	9,144 (47.7)	2,336 (48.2)	1,331 (44.8)	5,477 (48.2)	8,830 (45.5)	2,238 (44.5)	1,349 (44.6)	5,243 (46.3)
<b>Ontario Stroke System Region</b>												
Central East	2,833 (14.9)	253 (5.9)	643 (24.8)	1,937 (15.9)	2,960 (15.4)	250 (5.2)	765 (25.8)	1,945 (17.1)	3,053 (15.7)	324 (6.4)	741 (24.5)	1,988 (17.5)
Central South	3,309 (17.4)	459 (10.7)	661 (25.5)	2,189 (18.0)	3,213 (16.8)	459 (9.5)	922 (31.0)	1,832 (16.1)	3,331 (17.2)	520 (10.3)	973 (32.1)	1,838 (16.2)
East – Champlain	2,020 (10.6)	432 (10.0)	115 (4.4)	1,473 (12.1)	2,047 (10.7)	543 (11.2)	169 (5.7)	1,335 (11.8)	2,032 (10.5)	489 (9.7)	147 (4.9)	1,396 (12.3)
Northeast	1,162 (6.1)	321 (7.5)	443 (17.1)	398 (3.3)	1,087 (5.7)	302 (6.2)	377 (12.7)	408 (3.6)	1,100 (5.7)	290 (5.8)	398 (13.1)	412 (3.6)
Northwest	486 (2.5)	235 (5.5)	-	251 (2.1)	496 (2.6)	279 (5.8)	-	217 (1.9)	442 (2.3)	270 (5.4)	-	172 (1.5)
South East	1,015 (5.3)	390 (9.1)	143 (5.5)	482 (4.0)	950 (5.0)	351 (7.2)	123 (4.1)	476 (4.2)	1,011 (5.2)	402 (8.0)	145 (4.8)	464 (4.1)
Southwest	2,599 (13.6)	740 (17.2)	584 (22.6)	1,275 (10.5)	2,760 (14.4)	834 (17.2)	614 (20.7)	1,312 (11.6)	2,679 (13.8)	807 (16.0)	624 (20.6)	1,248 (11.0)
Toronto – North & East	1,336 (7.0)	385 (8.9)	-	951 (7.8)	1,328 (6.9)	457 (9.4)	-	871 (7.7)	1,360 (7.0)	499 (9.9)	-	861 (7.6)
Toronto – Southeast	976 (5.1)	169 (3.9)	-	807 (6.6)	996 (5.2)	274 (5.6)	-	722 (6.4)	1,018 (5.2)	312 (6.2)	-	706 (6.2)
Toronto – West	1,420 (7.4)	328 (7.6)	-	1,092 (9.0)	1,432 (7.5)	423 (8.7)	-	1,009 (8.9)	1,450 (7.5)	450 (8.9)	-	1,000 (8.8)
West GTA	1,908 (10.0)	591 (13.7)	-	1,317 (10.8)	1,909 (10.0)	679 (14.0)	-	1,230 (10.8)	1,919 (9.9)	670 (13.3)	-	1,249 (11.0)
<b>Local Health Integration Network</b>												
1. Erie St. Clair	1,190 (6.2)	444 (10.3)	370 (14.3)	376 (3.1)	1,120 (5.8)	409 (8.4)	400 (13.5)	311 (2.7)	1,064 (5.5)	384 (7.6)	384 (12.7)	296 (2.6)
2. South West	1,409 (7.4)	296 (6.9)	214 (8.3)	899 (7.4)	1,640 (8.6)	425 (8.8)	214 (7.2)	1,001 (8.8)	1,615 (8.3)	423 (8.4)	240 (7.9)	952 (8.4)
3. Waterloo Wellington	882 (4.6)	-	260 (10.0)	622 (5.1)	885 (4.6)	-	400 (13.5)	485 (4.3)	884 (4.6)	-	423 (14.0)	461 (4.1)
4. Hamilton Niagara Haldimand Brant	2,427 (12.7)	459 (10.7)	401 (15.5)	1,567 (12.9)	2,328 (12.1)	459 (9.5)	522 (17.6)	1,347 (11.9)	2,447 (12.6)	520 (10.3)	550 (18.2)	1,377 (12.1)
5. Central West	787 (4.1)	-	-	787 (6.5)	647 (3.4)	-	-	647 (5.7)	673 (3.5)	-	-	673 (5.9)
6. Mississauga Halton	1,121 (5.9)	591 (13.7)	-	530 (4.4)	1,262 (6.6)	-	-	583 (5.1)	1,246 (6.4)	670 (13.3)	-	576 (5.1)
7. Toronto Central	1,820 (9.5)	882 (20.5)	-	938 (7.7)	1,972 (10.3)	1,154 (23.8)	-	818 (7.2)	2,078 (10.7)	1,261 (25.1)	-	817 (7.2)
8. Central	1,671 (8.8)	-	267 (10.3)	1,404 (11.5)	1,733 (9.0)	-	424 (14.3)	1,309 (11.5)	1,728 (8.9)	-	433 (14.3)	1,295 (11.4)
9. Central East	2,221 (11.7)	-	301 (11.6)	1,920 (15.8)	2,220 (11.6)	-	341 (11.5)	1,879 (16.5)	2,191 (11.3)	-	308 (10.2)	1,883 (16.6)
10. South East	1,015 (5.3)	390 (9.1)	143 (5.5)	482 (4.0)	950 (5.0)	351 (7.2)	123 (4.1)	476 (4.2)	1,011 (5.2)	402 (8.0)	145 (4.8)	464 (4.1)
11. Champlain	2,020 (10.6)	432 (10.0)	115 (4.4)	1,473 (12.1)	2,047 (10.7)	543 (11.2)	169 (5.7)	1,335 (11.8)	2,032 (10.5)	489 (9.7)	147 (4.9)	1,396 (12.3)
12. North Simcoe Muskoka	853 (4.5)	253 (5.9)	75 (2.9)	525 (4.3)	791 (4.1)	250 (5.2)	-	541 (4.8)	884 (4.6)	324 (6.4)	-	560 (4.9)
13. North East	1,162 (6.1)	321 (7.5)	443 (17.1)	398 (3.3)	1,087 (5.7)	302 (6.2)	377 (12.7)	408 (3.6)	1,100 (5.7)	290 (5.8)	398 (13.1)	412 (3.6)
14. North West	486 (2.5)	235 (5.5)	-	251 (2.1)	496 (2.6)	279 (5.8)	-	217 (1.9)	442 (2.3)	270 (5.4)	-	172 (1.5)

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: Unique patients discharged from an emergency department with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack (TIA).

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).




**Exhibit 1.3 Age- and sex-adjusted rates of stroke/TIA patients arriving in the emergency department per 1,000 LHIN population, by Local Health Integration Network, in Ontario, 2003/04 to 2007/08**

Site	2003/04	2004/05	2005/06	2006/07	2007/08
	Age-/Sex-adjusted Rate (n)				
<b>Ontario<sup>1</sup></b>	<b>1.5 (19,038)</b>	<b>1.5 (19,613)</b>	<b>1.5 (19,701)</b>	<b>1.4 (19,168)</b>	<b>1.4 (19,379)</b>
<b>Local Health Integration Network</b>					
1. Erie St. Clair	<b>1.8 (1,245)</b>	<b>1.9 (1,334)</b>	<b>1.8 (1,337)</b>	<b>1.6 (1,162)</b>	1.5 (1,110)
2. South West	<b>1.3 (1,357)</b>	<b>1.3 (1,456)</b>	1.4 (1,525)	1.4 (1,610)	1.4 (1,596)
3. Waterloo Wellington	1.4 (928)	1.6 (1,084)	1.5 (1,024)	1.3 (919)	1.3 (926)
4. Hamilton Niagara Haldimand Brant	1.5 (2,415)	1.5 (2,456)	1.5 (2,495)	1.4 (2,326)	1.4 (2,446)
5. Central West	1.5 (819)	1.4 (804)	1.3 (802)	1.3 (816)	1.3 (855)
6. Mississauga Halton	<b>1.3 (1,068)</b>	<b>1.3 (1,136)</b>	<b>1.3 (1,159)</b>	<b>1.2 (1,109)</b>	<b>1.1 (1,101)</b>
7. Toronto Central	<b>1.3 (1,604)</b>	<b>1.3 (1,659)</b>	<b>1.3 (1,593)</b>	<b>1.2 (1,590)</b>	<b>1.3 (1,614)</b>
8. Central	<b>1.4 (1,898)</b>	<b>1.3 (1,934)</b>	<b>1.3 (1,971)</b>	<b>1.3 (1,973)</b>	<b>1.2 (1,981)</b>
9. Central East	1.5 (2,232)	1.5 (2,325)	1.5 (2,399)	1.4 (2,322)	1.4 (2,315)
10. South East	<b>1.7 (1,024)</b>	<b>1.7 (1,047)</b>	1.5 (950)	1.5 (966)	<b>1.6 (1,038)</b>
11. Champlain	<b>1.7 (1,979)</b>	<b>1.6 (1,991)</b>	<b>1.6 (2,022)</b>	<b>1.6 (2,024)</b>	<b>1.5 (2,002)</b>
12. North Simcoe Muskoka	<b>1.7 (786)</b>	<b>1.7 (803)</b>	1.5 (746)	1.4 (720)	1.5 (805)
13. North East	<b>1.8 (1,194)</b>	1.6 (1,087)	<b>1.7 (1,197)</b>	<b>1.6 (1,133)</b>	<b>1.6 (1,150)</b>
14. North West	<b>1.9 (489)</b>	<b>1.9 (497)</b>	<b>1.8 (481)</b>	<b>1.8 (498)</b>	1.6 (440)

Data sources: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04–2007/08; Statistics Canada, 1996 Ontario Census Population.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Note: Population-based analysis (i.e., the location of the patient's residence is used to report regional performance).

 Indicates significance difference from provincial rate at the <0.0001 level.

**Exhibit 1.4 Number and percentage of stroke/TIA patients<sup>1</sup> and patient visits<sup>2</sup> to hospital by ambulance, by OSS region, OSS classification and by Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

	2003/04 Patients	2006/07 Patients	2006/07 Patient Visits	2007/08 Patients	2007/08 Patient Visits
Group/Sub-Group	n (%)				
<b>Ontario<sup>3,4</sup></b>	<b>19,061</b>	<b>19,178</b>	<b>21,441</b>	<b>19,395</b>	<b>21,689</b>
<b>Ontario Stroke System Region</b>	<b>10,032 (52.6)</b>	<b>10,003 (52.2)</b>	<b>11,354 (53.0)</b>	<b>10,598 (54.6)</b>	<b>11,979 (55.2)</b>
Central East	1,377 (13.7)	1,530 (15.3)	1,720 (15.1)	1,682 (15.9)	1,877 (15.7)
Central South	1,790 (17.8)	1,792 (17.9)	2,020 (17.8)	1,822 (17.2)	2,039 (17.0)
East – Champlain	1,065 (10.6)	1,104 (11.0)	1,337 (11.8)	1,184 (11.2)	1,424 (11.9)
Northeast	588 (5.9)	546 (5.5)	599 (5.3)	556 (5.2)	605 (5.1)
Northwest	199 (2.0)	212 (2.1)	243 (2.1)	213 (2.0)	243 (2.0)
South East	578 (5.8)	499 (5.0)	597 (5.3)	568 (5.4)	664 (5.5)
Southwest	1,376 (13.7)	1,408 (14.1)	1,578 (13.9)	1,462 (13.8)	1,658 (13.8)
Toronto – North & East	755 (7.5)	702 (7.0)	777 (6.8)	750 (7.1)	831 (6.9)
Toronto – Southeast	523 (5.2)	519 (5.2)	618 (5.4)	572 (5.4)	677 (5.7)
Toronto – West	811 (8.1)	695 (6.9)	780 (6.9)	811 (7.7)	905 (7.6)
West GTA	972 (9.7)	996 (10.0)	1,085 (9.6)	978 (9.2)	1,056 (8.8)
<b>Ontario Stroke System Classification</b>					
Regional stroke centre	2,551 (25.4)	2,991 (29.9)	3,458 (30.5)	3,262 (30.8)	3,785 (31.6)
District stroke centre	1,362 (13.6)	1,757 (17.6)	1,965 (17.3)	1,870 (17.6)	2,085 (17.4)
Non-designated	6,121 (61.0)	5,255 (52.5)	5,931 (52.2)	5,466 (51.6)	6,109 (51.0)
<b>Local Health Integration Network</b>					
1. Erie St. Clair	654 (6.5)	594 (5.9)	641 (5.6)	626 (5.9)	680 (5.7)
2. South West	722 (7.2)	814 (8.1)	937 (8.3)	836 (7.9)	978 (8.2)
3. Waterloo Wellington	478 (4.8)	491 (4.9)	546 (4.8)	490 (4.6)	545 (4.5)
4. Hamilton Niagara Haldimand Brant	1,312 (13.1)	1,301 (13.0)	1,474 (13.0)	1,332 (12.6)	1,494 (12.5)
5. Central West	429 (4.3)	354 (3.5)	393 (3.5)	347 (3.3)	384 (3.2)
6. Mississauga Halton	543 (5.4)	642 (6.4)	692 (6.1)	631 (6.0)	672 (5.6)
7. Toronto Central	960 (9.6)	997 (10.0)	1,168 (10.3)	1,181 (11.1)	1,367 (11.4)
8. Central	939 (9.4)	908 (9.1)	1,004 (8.8)	976 (9.2)	1,086 (9.1)
9. Central East	1,155 (11.5)	1,173 (11.7)	1,306 (11.5)	1,180 (11.1)	1,308 (10.9)
10. South East	578 (5.8)	499 (5.0)	597 (5.3)	568 (5.4)	664 (5.5)
11. Champlain	1,065 (10.6)	1,104 (11.0)	1,337 (11.8)	1,184 (11.2)	1,424 (11.9)
12. North Simcoe Muskoka	412 (4.1)	368 (3.7)	417 (3.7)	478 (4.5)	529 (4.4)
13. North East	588 (5.9)	546 (5.5)	599 (5.3)	556 (5.2)	605 (5.1)
14. North West	199 (2.0)	212 (2.1)	243 (2.1)	213 (2.0)	243 (2.0)

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack (TIA).

<sup>1</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>2</sup> Based on number of visits (i.e., a patient may be counted more than once).

<sup>3</sup> Total emergency department visits in Ontario.

<sup>4</sup> Based on unique patients in Ontario (i.e., does not include multiple patient-visits).

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

**Exhibit 1.5 Number and percentage of stroke/TIA patients<sup>1</sup> presenting to the emergency department, by age group and sex, in Ontario, 2003/04, 2006/07 and 2007/08**

Characteristic	2003/04	2006/07	2007/08
<b>Ontario, n</b>	<b>19,061</b>	<b>19,178</b>	<b>19,395</b>
<b>Sex, n (%)</b>			
Female	9,648 (50.6)	9,816 (51.2)	9,773 (50.4)
Male	9,413 (49.4)	9,362 (48.8)	9,622 (49.6)
<b>Age</b>			
Mean ± SD	72.4 ± 13.6	72.3 ± 13.9	72.2 ± 14.0
Median (IQR)	75 (65–82)	75 (64–83)	75 (64–84)
<b>Age group, n (%)</b>			
≤18	54 (0.3)	43 (0.2)	40 (0.2)
19–55	2,261 (11.9)	2,405 (12.5)	2,488 (12.8)
56–65	2,690 (14.1)	2,901 (15.1)	2,955 (15.2)
66–75	4,837 (25.4)	4,525 (23.6)	4,494 (23.2)
76–85	6,462 (33.9)	6,360 (33.2)	6,350 (32.7)
>85	2,757 (14.5)	2,944 (15.4)	3,068 (15.8)
<b>Female age</b>			
Mean ± SD	74.4 ± 13.8	74.1 ± 14.2	74.3 ± 14.2
Median (IQR)	77 (68–84)	78 (66–84)	78 (67–84)
<b>Female age group, n (%)</b>			
≤18	25 (0.3)	20 (0.2)	22 (0.2)
19–55	976 (10.1)	1,108 (11.3)	1,118 (11.4)
56–65	1,103 (11.4)	1,221 (12.4)	1,148 (11.7)
66–75	2,128 (22.1)	1,983 (20.2)	1,973 (20.2)
76–85	3,528 (36.6)	3,464 (35.3)	3,445 (35.3)
>85	1,888 (19.6)	2,020 (20.6)	2,067 (21.2)
<b>Male age</b>			
Mean ± SD	70.3 ± 13.2	70.4 ± 13.3	70.2 ± 13.4
Median (IQR)	73 (62–80)	73 (62–80)	72 (61–80)
<b>Male age group, n (%)</b>			
≤18	29 (0.3)	23 (0.2)	18 (0.2)
19–55	1,285 (13.7)	1,297 (13.9)	1,370 (14.2)
56–65	1,587 (16.9)	1,680 (17.9)	1,807 (18.8)
66–75	2,709 (28.8)	2,542 (27.2)	2,521 (26.2)
76–85	2,934 (31.2)	2,896 (30.9)	2,905 (30.2)
>85	869 (9.2)	924 (9.9)	1,001 (10.4)

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07, and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack (TIA).

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

SD = standard deviation; IQR = interquartile range.

**Exhibit 1.6.1 Emergency department length of stay for stroke/TIA, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Site	2003/04 <sup>1,2</sup>			2006/07 <sup>2</sup>			2006/07 All Visits <sup>3</sup>			2007/08 Disptime <sup>2,4</sup>			2007/08 Leftedtime <sup>2,5</sup>			2007/08 All Visits Disptime <sup>3,4</sup>			2007/08 All Visits Leftedtime <sup>3,5</sup>		
	No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
<b>Ontario</b>	<b>19,061</b>	<b>6.0</b>	<b>4.6</b>	<b>19,178</b>	<b>5.8</b>	<b>4.6</b>	<b>21,441</b>	<b>5.7</b>	<b>4.5</b>	<b>19,395</b>	<b>5.8</b>	<b>4.6</b>	<b>19,395</b>	<b>12.4</b>	<b>6.5</b>	<b>21,689</b>	<b>5.7</b>	<b>4.5</b>	<b>21,689</b>	<b>12.3</b>	<b>6.4</b>
<b>Ontario Stroke System Region</b>																					
Central East	2,833	5.3	4.3	2,960	5.2	4.3	3,292	5.1	4.3	3,053	5.4	4.3	3,053	13.6	6.0	3,398	5.3	4.2	3,398	13.8	5.9
Central South	3,308	5.6	4.5	3,213	5.6	4.8	3,580	5.5	4.7	3,331	5.8	4.8	3,331	11.6	6.6	3,684	5.7	4.7	3,684	11.6	6.5
East – Champlain	2,020	6.4	4.7	2,047	6.2	4.6	2,414	6.2	4.5	2,032	6.7	4.9	2,032	11.9	5.7	2,383	6.7	4.8	2,383	11.7	5.8
Northeast	1,162	4.7	3.2	1,087	3.4	2.8	1,201	3.5	2.8	1,100	3.3	2.8	1,100	8.5	4.7	1,224	3.3	2.7	1,224	8.2	4.5
Northwest	486	5.7	3.5	496	4.1	3.2	556	4.0	3.0	442	4.3	3.6	442	8.0	5.2	493	4.2	3.5	493	8.3	5.3
South East	1,015	4.3	3.2	950	4.6	3.4	1,084	4.6	3.4	1,011	5.1	3.7	1,011	11.2	5.4	1,162	5.0	3.6	1,162	10.7	5.4
Southwest	2,599	4.1	3.3	2,760	4.1	3.2	3,069	4.1	3.2	2,679	4.0	3.2	2,679	6.9	4.3	3,003	3.9	3.1	3,003	6.9	4.2
Toronto – North and East	1,336	7.7	6.3	1,328	7.4	6.6	1,437	7.3	6.5	1,360	7.4	6.7	1,360	13.6	9.7	1,492	7.4	6.6	1,492	13.6	9.7
Toronto – Southeast	976	7.5	6.2	996	8.9	6.7	1,167	8.7	6.6	1,018	7.8	6.6	1,018	16.8	10.0	1,178	7.4	6.2	1,178	16.1	9.4
Toronto – West	1,419	10.2	7.5	1,432	9.2	7.1	1,585	9.1	7.0	1,450	7.7	6.6	1,450	19.4	10.3	1,610	7.5	6.4	1,610	18.8	10.1
West GTA	1,907	6.8	5.4	1,909	6.1	5.3	2,056	6.1	5.3	1,919	6.2	5.4	1,919	16.1	7.8	2,062	6.2	5.4	2,062	16.2	7.8
<b>Ontario Stroke System Classification</b>																					
Regional stroke centre	4,302	7.3	5.7	4,851	6.3	4.9	5,529	6.2	4.8	5,033	6.1	4.9	5,033	13.5	7.6	5,783	6.0	4.8	5,783	13.1	7.5
District stroke centre	2,589	4.7	3.7	2,970	4.8	3.8	3,319	4.7	3.7	3,028	4.7	3.7	3,028	10.4	5.7	3,359	4.7	3.6	3,359	10.4	5.6
Non-designated	12,170	5.9	4.4	11,357	5.8	4.7	12,593	5.8	4.6	11,334	5.9	4.8	11,334	12.4	6.2	12,547	5.8	4.7	12,547	12.3	6.1
<b>Local Health Integration Network</b>																					
1. Erie St. Clair	1,190	4.6	3.7	1,120	4.7	3.5	1,227	4.6	3.5	1,064	4.1	3.4	1,064	7.4	4.8	1,158	4.1	3.3	1,158	7.5	4.8
2. South West	1,409	3.6	2.9	1,640	3.7	3.0	1,842	3.7	3.0	1,615	3.9	3.0	1,615	6.7	4.0	1,845	3.8	2.9	1,845	6.5	3.9
3. Waterloo Wellington	882	4.4	3.8	885	5.0	4.6	975	4.9	4.6	884	4.8	4.2	884	8.5	5.6	976	4.8	4.0	976	8.6	5.6
4. Hamilton Niagara Haldimand Brant	2,426	6.0	5.0	2,328	5.9	4.9	2,605	5.8	4.8	2,447	6.1	5.0	2,447	12.6	7.1	2,708	6.0	4.9	2,708	12.7	7.0
5. Central West	787	6.4	5.6	647	7.2	6.6	696	7.1	6.5	673	7.2	6.5	673	19.6	9.4	730	7.0	6.3	730	19.1	9.2
6. Mississauga Halton	1,120	7.0	5.2	1,262	5.5	4.6	1,360	5.5	4.7	1,246	5.7	4.9	1,246	14.1	7.0	1,332	5.8	4.9	1,332	14.5	7.0
7. Toronto Central	1,819	10.4	7.9	1,972	9.5	7.3	2,245	9.2	7.1	2,078	7.6	6.5	2,078	17.6	10.0	2,368	7.3	6.3	2,368	16.9	9.7
8. Central	1,671	6.3	5.5	1,733	7.0	6.3	1,880	7.0	6.2	1,728	7.4	6.4	1,728	13.7	9.5	1,908	7.3	6.4	1,908	13.7	9.4
9. Central East	2,221	6.2	4.7	2,220	6.0	5.0	2,470	6.0	4.9	2,191	6.2	5.2	2,191	15.5	7.4	2,427	6.1	5.0	2,427	15.8	7.3
10. South East	1,046	4.3	3.2	950	4.6	3.4	1,084	4.6	3.4	1,011	5.1	3.7	1,011	11.2	5.4	1,162	5.0	3.6	1,162	10.7	5.4
11. Champlain	1,989	6.5	4.8	2,047	6.2	4.6	2,414	6.2	4.5	2,032	6.7	4.9	2,032	11.9	5.7	2,383	6.7	4.8	2,383	11.7	5.8
12. North Simcoe Muskoka	853	5.0	4.1	791	3.9	3.2	886	3.8	3.2	884	3.7	3.1	884	11.0	5.2	975	3.7	3.0	975	10.7	5.1
13. North East	1,162	4.7	3.2	1,087	3.4	2.8	1,201	3.5	2.8	1,100	3.3	2.8	1,100	8.5	4.7	1,224	3.3	2.7	1,224	8.2	4.5
14. North West	486	5.7	3.5	496	4.1	3.2	556	4.0	3.0	442	4.3	3.6	442	8.0	5.2	493	4.2	3.5	493	8.3	5.3

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack (TIA).

<sup>1</sup> Due to differences in data collection, only 'Disptime' was reported in 2003/04.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may appear more than once).

<sup>4</sup> 'Disptime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Disptime is the time (HHMM) in which the main service provider makes the decision about the patient's disposition.

<sup>5</sup> 'Leftedtime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Leftedtime is the time (HHMM) in which the patient physically leaves the emergency department and does not return. Using this data element and REGTIME to calculate the ED length of stay is recommended.

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

Exhibit 1.6.2 Emergency department length of stay for ischemic stroke, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08

Group/Site	2003/04 <sup>1, 2</sup>			2006/07 <sup>2</sup>			2006/07 All Visits <sup>3</sup>			2007/08 Disptime <sup>2, 4</sup>			2007/08 Leftedtime <sup>2, 5</sup>			2007/08 All Visits Disptime <sup>3, 4</sup>			2007/08 All Visits Leftedtime <sup>3, 5</sup>		
	No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
<b>Ontario</b>	<b>10,667</b>	<b>6.6</b>	<b>5.1</b>	<b>10,572</b>	<b>6.2</b>	<b>4.9</b>	<b>11,678</b>	<b>6.1</b>	<b>4.8</b>	<b>10,492</b>	<b>6.0</b>	<b>4.8</b>	<b>10,492</b>	<b>15.0</b>	<b>7.9</b>	<b>11,617</b>	<b>5.9</b>	<b>4.7</b>	<b>11,617</b>	<b>14.9</b>	<b>7.8</b>
<b>Ontario Stroke System Region</b>																					
Central East	1,551	5.9	4.7	1,651	5.5	4.7	1,837	5.4	4.6	1,616	5.6	4.4	1,616	18.3	7.4	1,787	5.5	4.3	1,787	18.7	7.3
Central South	1,831	6.0	5.0	1,763	5.8	5.0	1,939	5.7	4.9	1,784	5.8	4.9	1,784	14.2	8.0	1,971	5.7	4.8	1,971	14.2	8.0
East – Champlain	1,037	7.3	5.5	1,045	7.0	5.0	1,192	7.0	5.0	1,039	7.5	5.4	1,039	15.3	7.1	1,203	7.6	5.3	1,203	14.6	6.9
Northeast	591	5.1	3.5	577	3.2	2.7	623	3.3	2.7	549	3.2	2.7	549	7.4	5.2	596	3.1	2.7	596	7.3	5.0
Northwest	243	5.8	3.4	291	3.7	2.9	323	3.6	2.8	252	4.3	3.5	252	8.3	5.0	285	4.2	3.5	285	8.7	5.5
South East	557	4.7	3.4	482	5.0	3.7	548	5.0	3.6	558	5.2	3.7	558	13.9	6.4	630	5.1	3.6	630	13.3	6.2
Southwest	1,440	4.1	3.3	1,443	4.1	3.1	1,607	4.1	3.1	1,432	3.9	3.1	1,432	8.1	4.9	1,589	3.9	3.0	1,589	8.0	4.8
Toronto – North and East	821	8.2	6.8	802	7.5	6.6	855	7.4	6.5	777	7.3	6.6	777	15.4	10.7	858	7.2	6.5	858	15.3	10.8
Toronto – Southeast	580	8.4	7.1	551	9.8	7.8	627	9.8	7.6	536	8.4	7.1	536	20.5	13.4	583	8.4	7.1	583	20.8	13.7
Toronto – West	890	11.7	8.6	888	10.3	8.0	966	10.1	7.9	854	8.3	7.4	854	23.4	14.9	929	8.1	7.2	929	22.9	14.8
West GTA	1,126	7.3	5.9	1,079	6.4	5.6	1,161	6.3	5.5	1,095	6.4	5.6	1,095	19.0	10.0	1,186	6.4	5.6	1,186	19.0	9.9
<b>Ontario Stroke System Classification</b>																					
Regional stroke centre	2,370	8.0	6.5	2,742	6.7	5.0	3,058	6.6	5.0	2,846	6.2	4.9	2,846	15.9	8.9	3,183	6.3	4.9	3,183	15.6	8.9
District stroke centre	1,469	4.8	3.8	1,709	4.8	3.7	1,883	4.7	3.6	1,734	4.6	3.5	1,734	11.6	6.4	1,909	4.5	3.4	1,909	11.5	6.3
Non-designated	6,828	6.6	5.0	6,121	6.4	5.2	6,737	6.3	5.1	5,912	6.3	5.3	5,912	15.6	7.9	6,525	6.2	5.1	6,525	15.6	7.8
<b>Local Health Integration Network</b>																					
1. Erie St. Clair	649	4.4	3.5	590	4.6	3.2	640	4.6	3.2	573	3.9	3.1	573	8.9	5.5	614	3.9	3.1	614	9.0	5.5
2. South West	791	3.9	3.1	853	3.7	3.0	967	3.7	3.0	859	4.0	3.0	859	7.6	4.4	975	3.9	2.9	975	7.4	4.3
3. Waterloo Wellington	511	4.5	4.0	457	5.0	4.8	492	4.9	4.6	470	4.7	3.9	470	10.1	6.8	527	4.6	3.8	527	10.1	6.7
4. Hamilton Niagara Haldimand Brant	1,320	6.6	5.6	1,306	6.1	5.1	1,447	6.0	5.0	1,314	6.3	5.3	1,314	15.7	8.7	1,444	6.1	5.2	1,444	15.7	8.6
5. Central West	494	6.7	6.0	376	7.5	6.9	407	7.5	6.8	382	7.5	6.9	382	22.4	11.0	419	7.4	6.8	419	21.8	10.9
6. Mississauga Halton	632	7.7	5.7	703	5.7	4.7	754	5.7	4.7	713	5.8	4.8	713	17.1	8.7	767	5.8	4.8	767	17.3	8.7
7. Toronto Central	1,077	12.2	9.4	1,132	10.6	8.4	1,241	10.4	8.3	1,151	8.0	7.0	1,151	21.1	13.1	1,252	8.0	6.9	1,252	20.9	13.1
8. Central	1,027	6.7	5.9	1,075	7.2	6.5	1,161	7.2	6.4	982	7.6	6.7	982	15.7	11.7	1,084	7.5	6.6	1,084	15.7	11.8
9. Central East	1,327	6.8	5.2	1,282	6.5	5.4	1,433	6.5	5.3	1,204	6.6	5.7	1,204	20.4	9.0	1,324	6.5	5.6	1,324	21.0	8.9
10. South East	557	4.7	3.4	482	5.0	3.7	548	5.0	3.6	558	5.2	3.7	558	13.9	6.4	630	5.1	3.6	630	13.3	6.2
11. Champlain	1,037	7.3	5.5	1,045	7.0	5.0	1,192	7.0	5.0	1,039	7.5	5.4	1,039	15.3	7.1	1,203	7.6	5.3	1,203	14.6	6.9
12. North Simcoe Muskoka	411	5.4	4.6	403	3.7	3.1	450	3.6	3.1	446	3.5	3.0	446	14.2	6.0	497	3.4	3.0	497	13.7	5.9
13. North East	591	5.1	3.5	577	3.2	2.7	623	3.3	2.7	549	3.2	2.7	549	7.4	5.2	596	3.1	2.7	596	7.3	5.0
14. North West	243	5.8	3.4	291	3.7	2.9	323	3.6	2.8	252	4.3	3.5	252	8.3	5.0	285	4.2	3.5	285	8.7	5.5

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of ischemic stroke.

<sup>1</sup> Due to differences in data collection, only 'Disptime' was reported in 2003/04.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may appear more than once).

<sup>4</sup> 'Disptime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Disptime is the time (HHMM) in which the main service provider makes the decision about the patient's disposition.

<sup>5</sup> 'Leftedtime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Leftedtime is the time (HHMM) in which the patient physically leaves the emergency department and does not return. Using this data element and REGTIME to calculate the ED length of stay is recommended.

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

**Exhibit 1.6.3 Emergency department length of stay for transient ischemic attack, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Site	2003/04 <sup>1,2</sup>			2006/07 <sup>2</sup>			2006/07 All Visits <sup>3</sup>			2007/08 Disptime <sup>2,4</sup>			2007/08 Leftedtime <sup>2,5</sup>			2007/08 All Visits Disptime <sup>3,4</sup>			2007/08 All Visits Leftedtime <sup>3,5</sup>		
	No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
<b>Ontario</b>	<b>6,630</b>	<b>5.1</b>	<b>4.0</b>	<b>6,752</b>	<b>5.2</b>	<b>4.3</b>	<b>7,609</b>	<b>5.2</b>	<b>4.2</b>	<b>6,869</b>	<b>5.4</b>	<b>4.4</b>	<b>6,869</b>	<b>8.4</b>	<b>5.1</b>	<b>7,750</b>	<b>5.3</b>	<b>4.3</b>	<b>7,750</b>	<b>8.4</b>	<b>5.0</b>
<b>Ontario Stroke System Region</b>																					
Central East	1,062	4.6	3.7	1,048	4.7	4.0	1,176	4.6	3.9	1,163	5.0	4.0	1,163	7.0	4.5	1,321	4.9	4.0	1,321	7.1	4.5
Central South	1,166	5.1	4.2	1,164	5.4	4.6	1,322	5.3	4.6	1,215	5.8	4.7	1,215	8.4	5.2	1,352	5.7	4.6	1,352	8.6	5.2
East – Champlain	772	5.0	3.8	803	5.2	4.3	946	5.3	4.3	766	5.7	4.4	766	7.2	4.8	895	5.6	4.4	895	7.5	4.9
Northeast	487	4.2	2.8	438	3.6	2.9	503	3.7	2.8	459	3.4	2.8	459	10.3	4.1	530	3.3	2.8	530	9.5	3.9
Northwest	212	5.7	3.8	165	4.6	3.6	189	4.5	3.6	156	4.3	3.8	156	7.7	5.2	173	4.2	3.8	173	7.9	5.1
South East	388	3.9	2.9	392	4.0	3.1	447	4.1	3.1	359	4.6	3.5	359	6.6	4.0	419	4.6	3.5	419	6.5	4.1
Southwest	945	4.0	3.2	1,073	4.1	3.3	1,190	4.1	3.3	998	4.0	3.3	998	5.0	3.7	1,129	4.0	3.2	1,129	5.0	3.6
Toronto – North and East	380	6.9	5.5	371	7.4	6.6	410	7.3	6.6	406	7.8	6.9	406	10.8	8.2	450	7.7	6.8	450	10.8	8.2
Toronto – Southeast	285	6.1	5.1	317	7.5	5.7	350	7.4	5.7	334	7.1	6.1	334	12.5	6.9	366	7.0	6.1	366	12.2	6.9
Toronto – West	365	8.1	6.5	383	7.7	6.3	427	7.6	6.1	437	7.0	6.0	437	12.3	6.5	496	6.8	5.8	496	12.5	6.5
West GTA	568	5.6	4.7	598	5.7	5.0	649	5.8	5.1	576	5.9	5.3	576	11.0	5.7	619	5.8	5.1	619	11.0	5.6
<b>Ontario Stroke System Classification</b>																					
Regional stroke centre	1,352	6.4	5.3	1,531	5.9	4.9	1,738	5.9	4.9	1,560	6.1	5.2	1,560	10.1	6.3	1,802	6.0	5.1	1,802	10.0	6.2
District stroke centre	925	4.6	3.6	992	4.9	3.9	1,148	4.8	3.8	1,001	5.1	4.0	1,001	8.7	5.0	1,136	5.0	3.9	1,136	8.9	5.0
Non-designated	4,353	4.8	3.7	4,229	5.0	4.1	4,723	5.0	4.1	4,308	5.2	4.2	4,308	7.7	4.7	4,812	5.1	4.1	4,812	7.8	4.6
<b>Local Health Integration Network</b>																					
1. Erie St. Clair	465	4.8	3.8	429	4.8	3.9	478	4.7	3.9	393	4.5	3.7	393	5.3	4.1	436	4.6	3.6	436	5.6	4.1
2. South West	480	3.1	2.6	644	3.7	3.0	712	3.7	2.9	605	3.7	3.0	605	4.8	3.3	693	3.7	2.9	693	4.6	3.2
3. Waterloo Wellington	291	4.2	3.7	331	4.8	4.6	377	4.8	4.5	309	4.9	4.5	309	6.6	4.8	339	5.0	4.4	339	6.6	4.8
4. Hamilton Niagara Haldimand Brant	875	5.4	4.4	833	5.6	4.7	945	5.5	4.6	906	6.0	4.8	906	8.9	5.4	1,013	6.0	4.7	1,013	9.1	5.3
5. Central West	197	5.6	5.2	191	6.4	6.0	202	6.5	5.9	200	6.3	5.6	200	15.5	6.3	216	6.1	5.4	216	14.8	6.1
6. Mississauga Halton	371	5.6	4.5	407	5.3	4.7	447	5.5	4.8	376	5.7	5.1	376	8.5	5.3	403	5.7	5.1	403	8.9	5.3
7. Toronto Central	517	8.0	6.4	584	8.0	6.5	649	7.9	6.5	652	7.2	6.2	652	12.1	7.3	738	7.2	6.2	738	12.2	7.2
8. Central	494	5.7	4.9	494	6.8	5.7	547	6.7	5.7	557	7.2	6.3	557	10.9	7.3	625	7.0	6.2	625	10.8	7.2
9. Central East	704	5.0	3.9	733	5.2	4.3	820	5.1	4.2	780	5.4	4.4	780	7.7	5.1	882	5.3	4.2	882	7.7	5.0
10. South East	388	3.9	2.9	392	4.0	3.1	447	4.1	3.1	359	4.6	3.5	359	6.6	4.0	419	4.6	3.5	419	6.5	4.1
11. Champlain	772	5.0	3.8	803	5.2	4.3	946	5.3	4.3	766	5.7	4.4	766	7.2	4.8	895	5.6	4.4	895	7.5	4.9
12. North Simcoe Muskoka	377	4.6	3.5	308	3.8	3.2	347	3.8	3.2	351	4.0	3.3	351	7.3	4.2	388	4.0	3.2	388	7.2	4.1
13. North East	487	4.2	2.8	438	3.6	2.9	503	3.7	2.8	459	3.4	2.8	459	10.3	4.1	530	3.3	2.8	530	9.5	3.9
14. North West	212	5.7	3.8	165	4.6	3.6	189	4.5	3.6	156	4.3	3.8	156	7.7	5.2	173	4.2	3.8	173	7.9	5.1

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of transient ischemic attack.

<sup>1</sup> Due to differences in data collection, only 'Disptime' was reported in 2003/04.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may appear more than once).

<sup>4</sup> 'Disptime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Disptime is the time (HHMM) in which the main service provider makes the decision about the patient's disposition.

<sup>5</sup> 'Leftedtime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Leftedtime is the time (HHMM) in which the patient physically leaves the emergency department and does not return. Using this data element and REGTIME to calculate the ED length of stay is recommended.

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

**Exhibit 1.6.4 Emergency department length of stay for intracerebral hemorrhage, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Site	2003/04 <sup>1, 2</sup>			2006/07 <sup>2</sup>			2006/07 All Visits <sup>3</sup>			2007/08 Disptime <sup>2, 4</sup>			2007/08 Leftedtime <sup>2, 5</sup>			2007/08 All Visits Disptime <sup>3, 4</sup>			2007/08 All Visits Leftedtime <sup>3, 5</sup>		
	No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
<b>Ontario</b>	<b>1,144</b>	<b>6.2</b>	<b>5.0</b>	<b>1,180</b>	<b>5.9</b>	<b>4.6</b>	<b>1,326</b>	<b>5.8</b>	<b>4.4</b>	<b>1,313</b>	<b>5.8</b>	<b>4.6</b>	<b>1,313</b>	<b>12.2</b>	<b>7.1</b>	<b>1,456</b>	<b>5.7</b>	<b>4.5</b>	<b>1,456</b>	<b>12.1</b>	<b>7.0</b>
<b>Ontario Stroke System Region</b>																					
Central East	149	5.8	4.9	180	5.4	4.6	198	5.3	4.5	185	5.6	4.8	185	12.3	6.7	197	5.5	4.8	197	12.1	6.5
Central South	200	4.8	3.8	204	5.2	4.5	221	5.1	4.3	208	5.5	4.7	208	10.9	6.5	222	5.4	4.5	222	10.7	6.5
East – Champlain	131	7.5	5.9	119	6.9	4.7	149	6.4	4.5	148	6.5	4.8	148	11.7	6.9	180	6.5	4.9	180	12.4	7.4
Northeast	55	5.2	4.7	39	3.1	2.7	41	3.0	2.5	65	3.3	2.9	65	7.2	5.1	70	3.2	2.9	70	6.9	5.0
Northwest	17	5.0	3.4	29	4.5	3.7	33	4.3	3.0	20	3.5	2.9	20	7.3	6.4	21	3.4	2.4	21	7.0	6.0
South East	34	5.5	3.3	42	6.1	3.7	50	5.5	3.4	60	5.9	4.4	60	10.8	7.3	73	5.7	4.0	73	10.9	7.3
Southwest	134	4.0	3.2	147	4.0	3.1	159	3.9	3.1	166	3.8	3.1	166	7.9	4.9	187	3.8	3.1	187	8.2	5.0
Toronto – North and East	112	7.2	6.2	101	7.2	6.4	111	6.9	6.1	124	7.1	6.2	124	12.9	9.2	130	7.0	6.1	130	12.7	9.1
Toronto – Southeast	65	7.2	5.5	70	9.7	6.4	87	9.4	6.4	81	7.4	5.6	81	14.2	8.4	103	6.6	4.5	103	12.9	8.2
Toronto – West	101	7.6	6.2	107	7.5	6.2	126	7.3	5.9	90	6.8	5.7	90	20.9	9.5	100	6.7	5.7	100	19.6	9.5
West GTA	146	8.2	5.5	142	5.7	4.7	151	5.8	4.7	166	6.4	4.8	166	16.4	8.2	173	6.4	4.9	173	17.0	8.4
<b>Ontario Stroke System Classification</b>																					
Regional stroke centre	375	6.7	5.2	363	5.9	3.9	427	5.7	3.7	399	5.4	3.9	399	10.8	6.8	465	5.2	3.7	465	10.6	6.8
District stroke centre	125	4.6	3.7	192	4.7	3.6	207	4.6	3.5	215	4.3	3.4	215	8.0	5.2	231	4.3	3.4	231	7.9	5.2
Non-designated	644	6.3	5.0	625	6.4	5.2	692	6.2	5.1	699	6.4	5.2	699	14.3	8.1	760	6.3	5.2	760	14.3	8.0
<b>Local Health Integration Network</b>																					
1. Erie St. Clair	49	4.2	3.6	63	4.5	3.2	68	4.3	3.1	67	3.6	2.8	67	6.2	4.9	73	3.4	2.7	73	6.1	4.9
2. South West	85	3.9	3.2	84	3.6	3.1	91	3.6	3.1	99	4.0	3.2	99	9.0	5.1	114	4.0	3.2	114	9.4	5.1
3. Waterloo Wellington	50	3.6	3.2	71	5.0	4.3	75	4.8	4.0	63	5.0	4.3	63	7.5	5.5	68	5.1	4.3	68	7.6	5.5
4. Hamilton Niagara Haldimand Brant	150	5.2	4.3	133	5.4	4.6	146	5.3	4.3	145	5.7	4.9	145	12.3	7.7	154	5.5	4.8	154	12.1	7.5
5. Central West	64	6.9	5.3	53	6.9	5.7	58	6.8	5.7	58	8.0	5.8	58	17.6	10.5	60	7.9	5.8	60	17.3	10.8
6. Mississauga Halton	82	9.2	6.6	89	5.0	4.2	93	5.2	4.2	108	5.5	4.5	108	15.8	7.5	113	5.6	4.6	113	16.8	7.5
7. Toronto Central	135	8.0	6.6	149	8.6	6.8	185	8.3	6.0	153	7.1	5.7	153	16.7	8.9	181	6.5	5.2	181	15.3	8.3
8. Central	110	5.7	5.3	115	6.5	6.0	123	6.3	5.9	127	7.0	6.1	127	16.3	9.4	136	7.1	6.2	136	16.5	9.5
9. Central East	139	7.0	5.2	134	6.3	5.3	145	6.3	5.5	138	6.6	5.4	138	13.1	9.1	149	6.4	5.1	149	12.7	9.0
10. South East	34	5.5	3.3	42	6.1	3.7	50	5.5	3.4	60	5.9	4.4	60	10.8	7.3	73	5.7	4.0	73	10.9	7.3
11. Champlain	131	7.5	5.9	119	6.9	4.7	149	6.4	4.5	148	6.5	4.8	148	11.7	6.9	180	6.5	4.9	180	12.4	7.4
12. North Simcoe Muskoka	43	5.1	5.3	60	5.1	3.6	69	4.8	3.5	62	3.9	2.9	62	7.6	5.6	64	3.8	2.9	64	7.5	5.3
13. North East	55	5.2	4.7	39	3.1	2.7	41	3.0	2.5	65	3.3	2.9	65	7.2	5.1	70	3.2	2.9	70	6.9	5.0
14. North West	17	5.0	3.4	29	4.5	3.7	33	4.3	3.0	20	3.5	2.9	20	7.3	6.4	21	3.4	2.4	21	7.0	6.0

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of intracerebral hemorrhage.

<sup>1</sup> Due to differences in data collection, only 'Disptime' was reported in 2003/04.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may appear more than once).

<sup>4</sup> 'Disptime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Disptime is the time (HHMM) in which the main service provider makes the decision about the patient's disposition.

<sup>5</sup> 'Leftedtime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Leftedtime is the time (HHMM) in which the patient physically leaves the emergency department and does not return. Using this data element and REGTIME to calculate the ED length of stay is recommended.

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

**Exhibit 1.6.5 Emergency department length of stay for subarachnoid hemorrhage, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Site	2003/04 <sup>1,2</sup>			2006/07 <sup>2</sup>			2006/07 All Visits <sup>3</sup>			2007/08 Disptime <sup>2,4</sup>			2007/08 Leftedtime <sup>2,5</sup>			2007/08 All Visits Disptime <sup>3,4</sup>			2007/08 All Visits Leftedtime <sup>3,5</sup>		
	No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)		No. of Patients	Length of Stay (hours)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
<b>Ontario</b>	<b>623</b>	<b>5.2</b>	<b>4.0</b>	<b>674</b>	<b>5.5</b>	<b>4.6</b>	<b>828</b>	<b>5.2</b>	<b>4.1</b>	<b>721</b>	<b>5.7</b>	<b>4.5</b>	<b>721</b>	<b>8.9</b>	<b>5.5</b>	<b>866</b>	<b>5.1</b>	<b>4.0</b>	<b>866</b>	<b>8.3</b>	<b>5.2</b>
<b>Ontario Stroke System Region</b>																					
Central East	71	5.0	4.3	81	5.3	4.5	81	5.3	4.5	89	6.3	5.1	89	7.7	5.3	93	6.3	5.1	93	7.7	5.3
Central South	112	4.2	3.6	82	5.1	4.5	98	4.9	4.1	124	5.3	4.2	124	6.7	4.9	139	4.8	3.4	139	6.5	4.6
East – Champlain	80	7.1	5.3	80	5.3	4.5	127	4.9	3.5	79	5.8	3.6	79	9.5	4.7	105	5.1	3.5	105	9.6	4.7
Northeast	29	6.0	3.6	33	4.3	3.9	34	4.4	4.0	27	5.3	4.2	27	9.6	4.5	28	5.2	4.1	28	9.4	4.4
Northwest	14	3.5	2.8	11	5.8	5.0	11	5.8	5.0	14	5.2	4.5	14	6.4	5.5	14	5.2	4.5	14	6.4	5.5
South East	36	3.2	2.7	34	4.7	4.1	39	4.5	3.8	34	5.8	4.2	34	9.2	6.9	40	5.2	3.9	40	8.9	6.5
Southwest	80	4.1	3.8	97	4.0	3.4	113	3.8	3.2	83	4.3	3.7	83	6.4	4.7	98	4.0	3.5	98	6.1	4.5
Toronto – North and East	23	5.5	4.2	54	6.6	5.1	61	6.1	4.7	53	7.5	6.4	53	10.3	7.9	54	7.4	6.3	54	10.2	7.8
Toronto – Southeast	46	5.6	4.2	58	7.4	5.7	103	6.0	4.8	67	6.5	4.6	67	9.0	4.8	126	4.3	2.2	126	6.9	4.2
Toronto – West	64	6.9	4.7	54	6.5	5.7	66	6.0	5.0	69	5.7	5.3	69	16.6	6.9	85	4.9	4.1	85	13.6	5.8
West GTA	68	4.9	4.0	90	6.2	4.9	95	6.0	4.8	82	5.7	5.2	82	9.1	6.3	84	5.7	5.2	84	9.9	6.3
<b>Ontario Stroke System Classification</b>																					
Regional stroke centre	206	4.9	3.5	215	5.5	3.9	306	4.9	3.5	228	5.2	3.9	228	10.6	6.4	333	4.1	2.6	333	8.6	4.7
District stroke centre	70	4.2	3.6	77	4.6	4.1	81	4.6	4.1	78	5.0	3.9	78	6.9	4.3	83	4.9	3.8	83	6.7	4.2
Non-designated	347	5.5	4.4	382	5.8	4.8	441	5.5	4.6	415	6.2	5.0	415	8.3	5.5	450	6.0	4.9	450	8.4	5.5
<b>Local Health Integration Network</b>																					
1. Erie St. Clair	27	4.7	4.1	38	4.5	3.6	41	4.2	3.3	31	4.2	3.7	31	5.4	4.7	35	4.0	3.5	35	5.1	4.5
2. South West	53	3.8	3.3	59	3.5	3.3	72	3.5	3.0	52	4.4	3.9	52	7.0	4.7	63	4.0	3.6	63	6.6	4.6
3. Waterloo Wellington	30	5.1	4.3	26	6.4	5.8	31	5.9	5.6	42	5.2	4.5	42	5.6	5.0	42	5.2	4.5	42	5.6	5.0
4. Hamilton Niagara Haldimand Brant	82	3.9	3.4	56	4.6	3.6	67	4.5	3.5	82	5.3	3.9	82	7.3	4.7	97	4.7	3.1	97	6.9	4.3
5. Central West	32	4.6	4.2	27	8.2	6.6	29	7.9	6.0	33	6.4	6.7	33	11.0	7.2	35	6.3	6.7	35	12.8	7.9
6. Mississauga Halton	36	5.1	3.9	63	5.3	3.9	66	5.1	3.8	49	5.2	4.8	49	7.9	5.8	49	5.2	4.8	49	7.9	5.8
7. Toronto Central	91	6.2	4.1	107	7.2	5.7	170	6.0	4.3	122	6.3	4.9	122	13.0	7.5	197	4.6	2.5	197	9.6	4.6
8. Central	40	6.2	4.8	49	6.1	4.9	49	6.1	4.9	62	6.7	5.6	62	7.7	6.3	63	6.7	5.6	63	7.7	6.3
9. Central East	51	4.8	4.5	71	5.4	4.6	72	5.4	4.6	69	7.2	5.4	69	10.3	5.5	72	7.1	5.5	72	10.1	5.5
10. South East	36	3.2	2.7	34	4.7	4.1	39	4.5	3.8	34	5.8	4.2	34	9.2	6.9	40	5.2	3.9	40	8.9	6.5
11. Champlain	80	7.1	5.3	80	5.3	4.5	127	4.9	3.5	79	5.8	3.6	79	9.5	4.7	105	5.1	3.5	105	9.6	4.7
12. North Simcoe Muskoka	22	5.2	3.8	20	5.3	4.8	20	5.3	4.8	25	4.3	3.4	25	5.2	4.1	26	4.2	3.1	26	5.2	4.1
13. North East	29	6.0	3.6	33	4.3	3.9	34	4.4	4.0	27	5.3	4.2	27	9.6	4.5	28	5.2	4.1	28	9.4	4.4
14. North West	14	3.5	2.8	11	5.8	5.0	11	5.8	5.0	14	5.2	4.5	14	6.4	5.5	14	5.2	4.5	14	6.4	5.5

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of subarachnoid hemorrhage.

<sup>1</sup> Due to differences in data collection, only 'Disptime' was reported in 2003/04.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may appear more than once).

<sup>4</sup> 'Disptime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Disptime is the time (HHMM) in which the main service provider makes the decision about the patient's disposition.

<sup>5</sup> 'Leftedtime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Leftedtime is the time (HHMM) in which the patient physically leaves the emergency department and does not return. Using this data element and REGTIME to calculate the ED length of stay is recommended.

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).





## 2. Acute Inpatient Care

### Inpatient Volumes

#### Findings:

- ▶ **Exhibit 2.1:** The average age of stroke patients admitted to hospital did not change dramatically between 2003/04 and 2007/08: from 73.4 years (standard deviation 13.7) to 72.8 years (standard deviation 14.4). Women comprised 49% of stroke patients and accounted for almost 60% of the stroke inpatient population over 75 years of age (in each case, there was no change from 2003/04 to 2007/08).
- ▶ **Exhibit 2.2:** Overall, the number of patients admitted as inpatients decreased slightly. More patients were admitted to designated stroke centres. In 2003/04, 43% of inpatient stroke patients were in designated stroke centres; by 2007/08, this had increased to 48%. However, more than 50% of stroke patients admitted as inpatients were in non-designated centres. There was no dramatic change in the relative proportion of stroke subtypes being admitted between 2003/04 and 2007/08; however, there was a small increase in the proportion of TIA inpatients (from 16.9% in 2003/04 to 17.4% in 2007/08).
- ▶ **Exhibit 2.3:** The regional stroke centres had the lowest proportion of inpatients with a discharge diagnosis of TIA (13%) compared to almost 20% at the district stroke centres and non-designated centres in 2007/08. Provincially, the number and proportion of patients discharged from an inpatient stay with an “unable to determine” (UTD) stroke decreased from 32% in 2003/04 to 25% in 2007/08. The decrease was most notable at district stroke centres and non-designated centres. However, 66.4% of strokes classified as UTD were treated in NDCs.
- ▶ **Exhibit 2.4:** There was a decrease in the number of inpatient stroke admissions per 1,000 population at the provincial level. The provincial age- and sex-adjusted rate per 1,000 population was 1.0 in 2007/08 and 1.3 in 2003/04. The degree of variation across the Local Health Integration Networks was stable from 2003/04 to 2007/08. In 2007/08, the degree of variation per 1,000 population ranged from 0.9 in the Mississauga Halton LHIN to 1.7 in the North West LHIN.

#### Conclusions and recommendations:

Positive trends include the reduction in admissions despite the aging population and more patients being admitted to stroke centres where they have the opportunity to access stroke best practice, including stroke unit care.

It is surprising that the reduction in admissions does not relate to TIA. In fact, TIA admissions have increased slightly, an unexpected trend given the establishment of TIA and stroke prevention clinics. The OSS regions should examine TIA admissions, considering the prevalence of Secondary Prevention Clinics within their region. The 2010 release of the Canadian Stroke Strategy Best Practice Recommendations will provide the opportunity for the OSN to ensure that objectives of stroke prevention clinics are in alignment with best practices.

The number and proportion of “unable to determine” has decreased, reflecting better coding and/or better diagnosis of stroke. This data quality improvement also occurred at NDCs suggesting that a broader reach of the OSS in best practices for stroke diagnosis is also reaching them. Nevertheless, approximately a quarter of patients are leaving hospital without a definitive diagnosis. The next Ontario Stroke Audit should be able to help the OSN determine if improvement efforts need to be focussed on health records data capture and/or diagnostic capability.

---

## Inpatient Length of Stay

### Findings:

- ▶ **Exhibits 2.5.1 to 2.5.6:** There was no change overall in length of stay (LOS) from 2003/04 to 2007/08. Median LOS was unchanged at seven days at regional stroke centres and six days at district stroke centres and non-designated centres. In 2007/08, the national median LOS for stroke-related inpatient hospitalizations was seven days. Overall, TIA patients stayed in hospital for an average of five days; this varied across the OSS regions from 4.0–8.5 days.

### Conclusions and recommendations:

The OSN will continue to monitor inpatient length of stay as it relates to transitioning to inpatient rehabilitation.

---

## Age- and Sex-adjusted Pneumonia Rates

### Findings:

- ▶ **Exhibit 2.6:** Pneumonia rates decreased provincially and across all hospital designations. The provincial rate was 1.25 % in 2008/09. Rates in the Local Health Integration Networks varied from 0.57% in the Waterloo Wellington LHIN to 2.1% in the Mississauga Halton LHIN.

### Conclusions and recommendations:

This finding may reflect the efforts of the OSS in implementing best practices for screening and management of dysphagia. Additionally, improvements are being seen at the non-designated centres, which would suggest that best practices are reaching beyond the regional centres.

A rate of 1.25% is much lower than rates reported in the literature. Fluctuating numbers across the table could represent variation in coding since the identification of this diagnosis code was not based on the most responsible diagnosis data field and therefore merits further examination. Regions and facilities should examine their overall in-hospital pneumonia rate to have further understanding of these rates.

The OSN will continue to monitor pneumonia rates, well as compare them to national data and to the next Ontario Stroke Audit.

---

## Discharge Destination Following Acute Hospitalization

### Findings:

- ▶ **Exhibit 2.7:** Provincially, there was a 27% increase in discharging stroke patients to home with service (from 11% in 2003/04 to 14% in 2007/08) and an associated decrease in discharging to home without service (from 45% in 2003/04 to 41% in 2007/08). There was a slight decrease in discharging to long-term care (from 8.5% in 2003/04 to 7% in 2007/08) and complex continuing care (from 9% in 2003/04 to 7% in 2007/08) and a 15% relative increase in discharging to inpatient rehabilitation (from 20% in 2003/04 to 23% in 2007/08).
- ▶ These same trends were seen for the ischemic stroke sub-type, where there was a 13% relative increase in the proportion of ischemic stroke patients discharged to inpatient rehabilitation between 2003/04 and 2007/08. However, among TIA patients, there was a 47% relative increase in those being discharged to inpatient rehabilitation (from 1.7% in 2003/04 to 2.5% in 2007/08).
- ▶ Again, the same trends were observed across stroke centres; however, discharging to inpatient rehabilitation was lowest at non-designated centres (18%) followed by regional and district stroke centres (26% and 30%, respectively). Conversely, discharging to complex continuing care and long-term care facilities was highest among non-designated centres compared to regional and district stroke centres (complex continuing care: 8.6% compared to 3.9% and 7.9%, respectively; and long-term care: 9.0% compared to 6.0% and 4.6%, respectively).
- ▶ Across the Local Health Integration Networks, there was wide variation in the proportion of stroke patients discharged to inpatient rehabilitation following an acute stroke hospitalization: from 14.1% in the Central West LHIN to 32.2% in the Erie St. Clair LHIN.

### Conclusions and recommendations:

There have been positive trends: a greater proportion of patients are being discharged to home with home care and inpatient rehabilitation, and fewer are going to long-term and complex continuing care facilities. In 2007/08, four out of every 10 stroke patients in Ontario were discharged from acute care without service. Only two out of 10 were transferred to rehabilitation. Access to rehabilitation was much better among designated stroke centres where three out of 10 patients were discharged to inpatient rehabilitation.

The numbers, while improving, seem very low. Continued monitoring and implementation of the AlphaFIM<sup>®</sup> (an instrument for the assessment of disability and functional status of a stroke patient in an acute care setting) across acute facilities is expected to assist in determining appropriate discharge destinations for stroke/TIA patients. If patients with moderate to severe stroke (i.e., those with a modified Rankin score of between 3 and 5) are considered to be the most suitable for inpatient rehabilitation, based on the 2004/05 provincial stroke audit<sup>4</sup>, these patients represent 36.8% of the acute stroke inpatient population. Based on this finding, the estimated proportion of stroke patients needing inpatient rehabilitation is 35–40%. The data from the AlphaFIM<sup>®</sup> project currently underway will assist the OSS in further defining the extent of the gap.

The variation across the Local Health Integration Networks reflects the variation in access to inpatient rehabilitation facilities across Ontario, as well as knowledge of best practices for stroke care.

---

<sup>4</sup> Kapral MK, Hall, RE, Silver FL, Lindsay MP, Richards, J, Robertson, AC, Fang, J. *Registry of the Canadian Stroke Network. Report on the 2004/05 Ontario Audit*. Toronto: Institute for Clinical Evaluative Sciences; 2009.

## Secondary Stroke Prevention

### Time to Carotid Intervention

#### Findings:

- ▶ **Exhibit 2.8:** Provincially, there was a significant reduction in wait times for carotid intervention—from a median of 41 days to a median of 15 days—despite the increased number of stroke/TIA patients receiving a carotid intervention within six months of hospitalization for acute stroke. The greatest improvement was for patients who had their initial stroke hospitalization at a district stroke centre; their median wait time was reduced by 61 days (from 83 to 22 days between 2003/04 and 2007/08). The median wait time decreased from 13 days in 2003/04 to 10 days in 2007/08 for patients that had their initial stroke hospitalization at a regional stroke centre. This declining trend in time from initial stroke hospitalization to receiving a carotid intervention within six months was also evident at the non-designated centres (from 56 days in 2003/04 to 26.5 days in 2007/08), although median wait times were highest at those centres.

#### Conclusions and recommendations:

These results are impressive given that carotid intervention was not a component of Ontario's Wait Time Strategy between 2003/04 and 2007/08. This dramatic improvement is most likely associated with improved knowledge exchange on best practices for the use of various diagnostic techniques, the establishment of stroke prevention clinics, and better communication with neurosurgeons and vascular surgeons.

There is a need to continue efforts to ensure that carotid artery imaging is completed in a timely fashion with prompt referral to a surgeon, and investigate whether the same improvements are occurring among emergency and community referrals.

There is a need to continue work with the Wait Time Strategy to monitor best-practice benchmarks for the timing of carotid revascularization.

---

**Exhibit 2.1 Number and percentage of stroke/TIA patients<sup>1</sup> admitted to acute care hospitals, in Ontario and by age group and sex, 2003/04, 2006/07 and 2007/08**

Hospital Admissions		2003/04 n (%)	2006/07 n (%)	2007/08 n (%)
<b>Ontario</b>		<b>16,115</b>	<b>15,521</b>	<b>15,514</b>
<b>Sex</b>	Female	8,215 (51.0)	7,967 (51.3)	7,873 (50.7)
	Male	7,900 (49.0)	7,554 (48.7)	7,641 (49.3)
<b>Age</b>	Mean ± SD	73.4 ± 13.7	73.1 ± 14.3	72.8 ± 14.4
	Median (IQR)	76 (67–83)	76 (65–83)	76 (65–83)
<b>Age group</b>	≤18	60 (0.4)	62 (0.4)	70 (0.5)
	19–55	1,726 (10.7)	1,814 (11.7)	1,887 (12.2)
	56–65	1,970 (12.2)	2,143 (13.8)	2,178 (14.0)
	66–75	3,926 (24.4)	3,430 (22.1)	3,473 (22.4)
	76–85	5,788 (35.9)	5,325 (34.3)	5,209 (33.6)
	>85	2,645 (16.4)	2,747 (17.7)	2,697 (17.4)
<b>Female age</b>	Mean ± SD	75.5 ± 13.6	75.3 ± 14.2	75.1 ± 14.3
	Median (IQR)	78 (70–85)	79 (68–85)	79 (68–85)
<b>Female age group</b>	≤18	22 (0.3)	23 (0.3)	33 (0.4)
	19–55	743 (9.0)	804 (10.1)	816 (10.4)
	56–65	788 (9.6)	851 (10.7)	812 (10.3)
	66–75	1,722 (21.0)	1,489 (18.7)	1,530 (19.4)
	76–85	3,123 (38.0)	2,933 (36.8)	2,862 (36.4)
	>85	1,817 (22.1)	1,867 (23.4)	1,820 (23.1)
<b>Male age</b>	Mean ± SD	71.2 ± 13.4	70.8 ± 14.0	70.4 ± 14.0
	Median (IQR)	74 (64–81)	73 (62–81)	73 (62–81)
<b>Male age group</b>	≤18	38 (0.5)	39 (0.5)	37 (0.5)
	19–55	983 (12.4)	1,010 (13.4)	1,071 (14.0)
	56–65	1,182 (15.0)	1,292 (17.1)	1,366 (17.9)
	66–75	2,204 (27.9)	1,941 (25.7)	1,943 (25.4)
	76–85	2,665 (33.7)	2,392 (31.7)	2,347 (30.7)
	>85	828 (10.5)	880 (11.6)	877 (11.5)

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

SD = Standard deviation; IQR = Interquartile range.

**Exhibit 2.2 Number and percentage of patients admitted to acute care hospitals with a diagnosis of stroke/TIA, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Sub-Group	2003/04 Patient Admissions <sup>1</sup> n (%)	2006/07 Patient Admissions <sup>1</sup> n (%)	2006/07 All Events <sup>2</sup> n (%)	2007/08 Patient Admissions <sup>1</sup> n (%)	2007/08 All Events <sup>2</sup> n (%)
<b>Ontario</b>	<b>16,115</b>	<b>15,521</b>	<b>16,627</b>	<b>15,514</b>	<b>16,623</b>
<b>Stroke Type</b>					
Intracerebral hemorrhage	1,722 (10.7)	1,604 (10.3)	1,746 (10.5)	1,635 (10.5)	1,764 (10.6)
Ischemic stroke <sup>3</sup>	10,981 (68.1)	10,585 (68.2)	11,297 (67.9)	10,396 (67.0)	11,143 (67.0)
Subarachnoid hemorrhage	696 (4.3)	784 (5.1)	875 (5.3)	786 (5.1)	867 (5.2)
Transient ischemic attack	2,716 (16.9)	2,548 (16.4)	2,709 (16.3)	2,697 (17.4)	2,849 (17.1)
<b>Ontario Stroke System Region</b>					
Central East	2,218 (13.8)	2,135 (13.8)	2,279 (13.7)	2,047 (13.2)	2,184 (13.3)
Central South	2,883 (17.9)	2,720 (17.5)	2,883 (17.3)	2,712 (17.5)	2,634 (16.1)
East – Champlain	1,325 (8.2)	1,299 (8.4)	1,412 (8.5)	1,350 (8.7)	1,473 (9.0)
Northeast	1,086 (6.7)	1,058 (6.8)	1,137 (6.8)	1,003 (6.5)	1,082 (6.6)
Northwest	408 (2.5)	490 (3.2)	531 (3.2)	464 (3.0)	509 (3.1)
South East	763 (4.7)	633 (4.1)	681 (4.1)	716 (4.6)	770 (4.7)
Southwest	2,545 (15.8)	2,317 (14.9)	2,477 (14.9)	2,295 (14.8)	2,467 (15.0)
Toronto – North & East	1,047 (6.5)	1,190 (7.7)	1,277 (7.7)	1,143 (7.4)	1,224 (7.5)
Toronto – Southeast	885 (5.5)	845 (5.4)	918 (5.5)	835 (5.4)	914 (5.6)
Toronto – West	1,346 (8.4)	1,277 (8.2)	1,395 (8.4)	1,357 (8.7)	1,453 (8.9)
West GTA	1,609 (10.0)	1,557 (10.0)	1,637 (9.8)	1,592 (10.3)	1,697 (10.3)
<b>Ontario Stroke System Classification</b>					
Regional stroke centre	4,525 (28.1)	4,827 (31.1)	5,226 (31.4)	4,924 (31.7)	5,323 (32.4)
District stroke centre	2,340 (14.5)	2,456 (15.8)	2,603 (15.7)	2,444 (15.8)	2,375 (14.5)
Non-designated	9,250 (57.4)	8,238 (53.1)	8,798 (52.9)	8,146 (52.5)	8,709 (53.1)
<b>Local Health Integration Network</b>					
1. Erie St. Clair	1,101 (6.8)	950 (6.1)	1,005 (6.0)	964 (6.2)	1,031 (6.3)
2. South West	1,444 (9.0)	1,367 (8.8)	1,472 (8.9)	1,331 (8.6)	1,436 (8.8)
3. Waterloo Wellington	737 (4.6)	709 (4.6)	765 (4.6)	698 (4.5)	738 (4.5)
4. Hamilton Niagara Haldimand Brant	2,146 (13.3)	2,011 (13.0)	2,118 (12.7)	2,014 (13.0)	1,896 (11.6)
5. Central West	559 (3.5)	491 (3.2)	520 (3.1)	575 (3.7)	621 (3.8)
6. Mississauga Halton	1,050 (6.5)	1,066 (6.9)	1,117 (6.7)	1,017 (6.6)	1,076 (6.6)
7. Toronto Central	1,723 (10.7)	1,837 (11.8)	2,016 (12.1)	1,907 (12.3)	2,063 (12.6)
8. Central	1,388 (8.6)	1,433 (9.2)	1,518 (9.1)	1,395 (9.0)	1,481 (9.0)
9. Central East	1,667 (10.0)	1,562 (10.1)	1,676 (10.1)	1,435 (9.2)	1,529 (9.3)
10. South East	763 (4.7)	633 (4.1)	681 (4.1)	716 (4.6)	770 (4.7)
11. Champlain	1,325 (8.2)	1,299 (8.4)	1,412 (8.5)	1,350 (8.7)	1,473 (9.0)
12. North Simcoe Muskoka	718 (4.5)	615 (4.0)	659 (4.0)	645 (4.2)	702 (4.3)
13. North East	1,086 (6.7)	1,058 (6.8)	1,137 (6.8)	1,003 (6.5)	1,082 (6.6)
14. North West	408 (2.5)	490 (3.2)	531 (3.2)	464 (3.0)	509 (3.1)

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

<sup>1</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>2</sup> Analysis includes all visits (i.e., a patient may appear more than once).

<sup>3</sup> Ischemic stroke includes ICD-10-CA codes H341, I63 and I64.

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

**Exhibit 2.3 Number and percentage of stroke/TIA patients<sup>1</sup> admitted to regional stroke centres, district stroke centres and non-designated centres, in Ontario and by stroke type, OSS region and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Sub-Group	2003/04				2006/07				2007/08			
	All n (%)	Regional Stroke Centre n (%)	District Stroke Centre n (%)	Non-designated n (%)	All n (%)	Regional Stroke Centre n (%)	District Stroke Centre n (%)	Non-designated n (%)	All n (%)	Regional Stroke Centre n (%)	District Stroke Centre n (%)	Non-designated n (%)
<b>Ontario</b>	<b>16,115</b>	<b>4,525</b>	<b>2,340</b>	<b>9,250</b>	<b>15,521</b>	<b>4,827</b>	<b>2,456</b>	<b>8,238</b>	<b>15,306</b>	<b>4,924</b>	<b>2,236</b>	<b>8,146</b>
<b>Stroke Type</b>												
Intracerebral hemorrhage	1,722 (10.7)	630 (13.9)	223 (9.5)	869 (9.4)	1,604 (10.3)	639 (13.2)	221 (9.0)	744 (9.0)	1,635 (10.5)	660 (13.4)	184 (8.2)	774 (9.5)
Ischemic stroke	5,758 (35.7)	1,910 (42.2)	825 (35.3)	3,023 (32.7)	6,375 (41.1)	2,279 (47.2)	1,022 (41.6)	3,074 (37.3)	6,485 (41.8)	2,404 (48.8)	1,023 (45.8)	3,016 (37.0)
Subarachnoid hemorrhage	696 (4.3)	517 (11.4)	24 (1.0)	155 (1.7)	784 (5.1)	542 (11.2)	33 (1.3)	209 (2.5)	786 (5.1)	564 (11.5)	25 (1.1)	197 (2.4)
Transient ischemic attack	2,716 (16.9)	552 (12.2)	463 (19.8)	1,701 (18.4)	2,548 (16.4)	596 (12.3)	443 (18.0)	1,509 (18.3)	2,697 (17.4)	649 (13.2)	442 (19.8)	1,563 (19.2)
Unable to determine	5,223 (32.4)	916 (20.2)	805 (34.4)	3,502 (37.9)	4,210 (27.1)	771 (16.0)	737 (30.0)	2,702 (32.8)	3,911 (25.2)	647 (13.1)	562 (25.1)	2,596 (31.9)
<b>Ontario Stroke System Region</b>												
Central East	2,218 (13.8)	218 (4.8)	554 (23.7)	1,446 (15.6)	2,135 (13.8)	206 (4.3)	602 (24.5)	1,327 (16.1)	2,047 (13.4)	233 (4.7)	552 (24.7)	1,262 (15.5)
Central South	2,883 (17.9)	438 (9.7)	571 (24.4)	1,874 (20.3)	2,720 (17.5)	493 (10.2)	703 (28.6)	1,524 (18.5)	2,504 (16.4)	512 (10.4)	478 (21.4)	1,514 (18.6)
East – Champlain	1,325 (8.2)	364 (8.0)	111 (4.7)	850 (9.2)	1,299 (8.4)	326 (6.8)	159 (6.5)	814 (9.9)	1,350 (8.8)	376 (7.6)	133 (5.9)	841 (10.3)
Northeast	1,086 (6.7)	346 (7.6)	415 (17.7)	325 (3.5)	1,058 (6.8)	317 (6.6)	409 (16.7)	332 (4.0)	1,003 (6.6)	303 (6.2)	409 (18.3)	291 (3.6)
Northwest	408 (2.5)	283 (6.3)	-	125 (1.4)	490 (3.2)	371 (7.7)	-	119 (1.4)	464 (3.0)	342 (6.9)	-	122 (1.5)
South East	763 (4.7)	285 (6.3)	144 (6.2)	334 (3.6)	633 (4.1)	286 (5.9)	105 (4.3)	242 (2.9)	716 (4.7)	314 (6.4)	133 (5.9)	269 (3.3)
Southwest	2,545 (15.8)	874 (19.3)	545 (23.3)	1,126 (12.2)	2,317 (14.9)	887 (18.4)	478 (19.5)	952 (11.6)	2,295 (15.0)	891 (18.1)	531 (23.7)	873 (10.7)
Toronto – North & East	1,047 (6.5)	332 (7.3)	-	715 (7.7)	1,190 (7.7)	411 (8.5)	-	779 (9.5)	1,143 (7.5)	382 (7.8)	-	761 (9.3)
Toronto – Southeast	885 (5.5)	281 (6.2)	-	604 (6.5)	845 (5.4)	338 (7.0)	-	507 (6.2)	835 (5.5)	350 (7.1)	-	485 (6.0)
Toronto – West	1,346 (8.4)	496 (11.0)	-	850 (9.2)	1,277 (8.2)	593 (12.3)	-	684 (8.3)	1,357 (8.9)	651 (13.2)	-	706 (8.7)
West GTA	1,609 (10.0)	608 (13.4)	-	1,001 (10.8)	1,557 (10.0)	599 (12.4)	-	958 (11.6)	1,592 (10.4)	570 (11.6)	-	1,022 (12.5)
<b>Local Health Integration Network</b>												
1. Erie St. Clair	1,101 (6.8)	393 (8.7)	344 (14.7)	364 (3.9)	950 (6.1)	348 (7.2)	323 (13.2)	279 (3.4)	964 (6.3)	337 (6.8)	334 (14.9)	293 (3.6)
2. South West	1,444 (9.0)	481 (10.6)	201 (8.6)	762 (8.2)	1,367 (8.8)	539 (11.2)	155 (6.3)	673 (8.2)	1,331 (8.7)	554 (11.3)	197 (8.8)	580 (7.1)
3. Waterloo Wellington	737 (4.6)	-	211 (9.0)	526 (5.7)	709 (4.6)	-	340 (13.8)	369 (4.5)	698 (4.6)	-	328 (14.7)	370 (4.5)
4. Hamilton Niagara Haldimand Brant	2,146 (13.3)	438 (9.7)	360 (15.4)	1,348 (14.6)	2,011 (13.0)	493 (10.2)	363 (14.8)	1,155 (14.0)	1,806 (11.8)	512 (10.4)	150 (6.7)	1,144 (14.0)
5. Central West	559 (3.5)	-	-	559 (6.0)	491 (3.2)	-	-	491 (6.0)	575 (3.8)	-	-	575 (7.1)
6. Mississauga Halton	1,050 (6.5)	608 (13.4)	-	442 (4.8)	1,066 (6.9)	599 (12.4)	-	467 (5.7)	1,017 (6.6)	570 (11.6)	-	447 (5.5)
7. Toronto Central	1,754 (10.9)	1,109 (24.5)	-	645 (7.0)	1,837 (11.8)	1,342 (27.8)	-	495 (6.0)	1,907 (12.5)	1,383 (28.1)	-	524 (6.4)
8. Central	1,357 (8.4)	-	251 (10.7)	1,106 (12.0)	1,433 (9.2)	-	354 (14.4)	1,079 (13.1)	1,395 (9.1)	-	322 (14.4)	1,073 (13.2)
9. Central East	1,667 (10.3)	-	243 (10.4)	1,424 (15.4)	1,562 (10.1)	-	248 (10.1)	1,314 (16.0)	1,435 (9.4)	-	230 (10.3)	1,205 (14.8)
10. South East	763 (4.7)	285 (6.3)	144 (6.2)	334 (3.6)	633 (4.1)	286 (5.9)	105 (4.3)	242 (2.9)	716 (4.7)	314 (6.4)	133 (5.9)	269 (3.3)
11. Champlain	1,325 (8.2)	364 (8.0)	111 (4.7)	850 (9.2)	1,299 (8.4)	326 (6.8)	159 (6.5)	814 (9.9)	1,350 (8.8)	376 (7.6)	133 (5.9)	841 (10.3)
12. North Simcoe Muskoka	718 (4.5)	218 (4.8)	60 (2.6)	440 (4.8)	615 (4.0)	206 (4.3)	-	409 (5.0)	645 (4.2)	233 (4.7)	-	412 (5.1)
13. North East	1,086 (6.7)	346 (7.6)	415 (17.7)	325 (3.5)	1,058 (6.8)	317 (6.6)	409 (16.7)	332 (4.0)	1,003 (6.6)	303 (6.2)	409 (18.3)	291 (3.6)
14. North West	408 (2.5)	283 (6.3)	-	125 (1.4)	490 (3.2)	371 (7.7)	-	119 (1.4)	464 (3.0)	342 (6.9)	-	122 (1.5)

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).




**Exhibit 2.4 Age- and sex-adjusted inpatient admission rates per 1,000 LHIN population, in Ontario and by Local Health Integration Network, 2003/04 to 2007/08**

	2003	2004	2005	2006	2007
	Age-/sex-adjusted rate (n)				
<b>Ontario<sup>1</sup></b>	<b>1.3 (16,092)</b>	<b>1.2 (16,207)</b>	<b>1.2 (16,039)</b>	<b>1.1 (15,495)</b>	<b>1.0 (15,482)</b>
<b>Local Health Integration Network</b>					
1. Erie St. Clair	1.7 (1,173)	1.6 (1,174)	1.5 (1,082)	1.3 (1,001)	1.3 (1,012)
2. South West	1.3 (1,356)	1.2 (1,325)	1.2 (1,290)	1.2 (1,322)	1.1 (1,279)
3. Waterloo Wellington	1.2 (809)	1.3 (866)	1.2 (854)	1.1 (781)	1.1 (771)
4. Hamilton Niagara Haldimand Brant	1.3 (2,124)	1.3 (2,059)	1.2 (2,023)	1.1 (1,957)	1.1 (1,987)
5. Central West	1.2 (664)	1.2 (683)	1.1 (663)	1.1 (694)	1.2 (750)
6. Mississauga Halton	1.2 (953)	1.2 (992)	1.1 (940)	1.0 (934)	0.9 (912)
7. Toronto Central	1.1 (1,387)	1.1 (1,366)	1.1 (1,339)	1.0 (1,295)	1.0 (1,317)
8. Central	1.1 (1,540)	1.1 (1,627)	1.1 (1,672)	1.0 (1,654)	1.0 (1,628)
9. Central East	1.2 (1,807)	1.1 (1,739)	1.1 (1,731)	1.1 (1,730)	1.0 (1,630)
10. South East	1.2 (754)	1.3 (789)	1.1 (716)	1.1 (663)	1.1 (747)
11. Champlain	1.1 (1,307)	1.1 (1,318)	1.1 (1,397)	1.0 (1,282)	1.0 (1,314)
12. North Simcoe Muskoka	1.5 (703)	1.6 (742)	1.4 (681)	1.2 (597)	1.2 (636)
13. North East	1.7 (1,106)	1.6 (1,083)	1.7 (1,153)	1.5 (1,091)	1.4 (1,035)
14. North West	1.6 (409)	1.7 (444)	1.8 (498)	1.8 (494)	1.7 (464)

Data sources: Canadian Institute for Health Information, Discharge Abstract Database, 2003–2007; Statistics Canada, 1996 Ontario Census Population.

<sup>1</sup>Based on unique patients (i.e., does not include multiple patient-visits).

Note: Population-based analysis (i.e., the location of the patient's residence is used to report regional performance).

 Indicates significance difference from provincial rate at the <0.0001 level.

**Exhibit 2.5.1 Inpatient length of stay for stroke/TIA, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Site	2003/04			2006/07			2007/08		
	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
<b>Ontario</b>	<b>16,115</b>	<b>12.6</b>	<b>7</b>	<b>15,521</b>	<b>12.3</b>	<b>7</b>	<b>15,306</b>	<b>12.6</b>	<b>7</b>
<b>Ontario Stroke System Region</b>									
Central East	2,218	12.0	6	2,135	10.8	6	2,047	11.1	6
Central South	2,883	12.9	7	2,720	12.4	7	2,504	11.5	6
East – Champlain	1,325	13.5	8	1,299	14.7	7	1,350	15.9	7
Northeast	1,086	12.7	6	1,058	12.9	6	1,003	12.3	6
Northwest	408	10.9	6	490	10.4	6	464	12.3	6
South East	763	12.4	6	633	15.7	6	716	15.5	7
Southwest	2,545	9.5	6	2,317	10.3	6	2,295	10.4	6
Toronto – North & East	1,047	14.3	8	1,190	12.7	6	1,143	13.1	6
Toronto – Southeast	885	13.7	8	845	13.5	8	835	13.2	7
Toronto – West	1,346	17.2	9	1,277	14.3	8	1,357	14.9	8
West GTA	1,609	12.0	7	1,557	11.8	7	1,592	13.4	7
<b>Ontario Stroke System Classification</b>									
Regional stroke centre	4,525	13.9	7	4,827	13.8	7	4,924	13.8	7
District stroke centre	2,340	11.0	6	2,456	10.5	6	2,236	10.3	6
Non-designated	9,250	12.4	7	8,238	12.0	6	8,146	12.6	6
<b>Local Health Integration Network</b>									
1. Erie St. Clair	1,101	8.5	6	950	10.4	7	964	9.2	6
2. South West	1,444	10.3	6	1,367	10.2	5	1,331	11.3	5
3. Waterloo Wellington	737	11.5	6	709	9.2	6	698	9.9	6
4. Hamilton Niagara Haldimand Brant	2,146	13.3	7	2,011	13.5	7	1,806	12.1	6
5. Central West	559	13.9	8	491	11.6	7	575	14.8	7
6. Mississauga Halton	1,050	11.0	7	1,066	11.9	6	1,017	12.5	6
7. Toronto Central	1,754	15.6	9	1,837	13.6	8	1,907	13.8	7
8. Central	1,357	15.8	9	1,433	13.0	8	1,395	13.5	7
9. Central East	1,667	11.9	7	1,562	12.1	7	1,435	12.3	7
10. South East	775	12.4	6	633	15.7	6	716	15.5	7
11. Champlain	1,313	13.5	8	1,299	14.7	7	1,350	15.9	7
12. North Simcoe Muskoka	718	11.4	5	615	8.6	5	645	9.5	6
13. North East	1,086	12.7	6	1,058	12.9	6	1,003	12.3	6
14. North West	408	10.9	6	490	10.4	6	464	12.3	6

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged with most responsible diagnosis of stroke/TIA.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

**Exhibit 2.5.2 Acute inpatient length of stay for ischemic stroke, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Site	2003/04			2006/07			2007/08		
	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
<b>Ontario</b>	<b>10,981</b>	<b>14.2</b>	<b>8</b>	<b>10,585</b>	<b>13.5</b>	<b>8</b>	<b>10,248</b>	<b>14.1</b>	<b>8</b>
<b>Ontario Stroke System Region</b>									
Central East	1,568	13.9	8	1,518	12.6	8	1,439	12.2	8
Central South	1,912	15.5	8	1,846	13.9	8	1,705	13.1	8
East – Champlain	864	14.9	9	904	15.9	8	880	17.7	8
Northeast	670	15.7	8	671	15.3	8	594	15.3	8
Northwest	247	13.0	8	332	12.3	8	295	15.6	8
South East	509	14.2	8	412	17.0	9	487	17.3	9
Southwest	1,794	10.1	7	1,624	11.0	7	1,626	11.4	7
Toronto – North & East	762	15.7	9	809	13.7	7	764	14.1	8
Toronto – Southeast	619	15.2	9	560	13.7	8	505	14.2	8
Toronto – West	917	18.1	10	821	15.0	9	839	16.2	8
West GTA	1,119	12.9	8	1,088	12.8	8	1,114	14.7	7
<b>Ontario Stroke System Classification</b>									
Regional stroke centre	2,826	14.8	8	3,050	14.2	8	3,051	14.8	8
District stroke centre	1,630	12.7	7	1,759	12.1	8	1,585	11.6	7
Non-designated	6,525	14.3	8	5,776	13.6	8	5,612	14.3	8
<b>Local Health Integration Network</b>									
1. Erie St. Clair	799	9.0	7	721	11.1	7	719	9.9	7
2. South West	995	10.9	7	903	10.9	6	907	12.6	6
3. Waterloo Wellington	527	13.4	7	504	11.1	7	502	11.6	7.5
4. Hamilton Niagara Haldimand Brant	1,385	16.3	9	1,342	14.9	8	1,203	13.7	8
5. Central West	425	14.9	9	348	12.7	8	406	16.7	9
6. Mississauga Halton	694	11.8	7	740	12.9	7	708	13.5	7
7. Toronto Central	1,145	16.7	10	1,109	13.6	8	1,118	14.4	8
8. Central	1,007	16.9	10	1,029	14.6	9	977	15.4	9
9. Central East	1,248	13.1	8	1,187	13.4	7	1,030	13.0	8
10. South East	517	14.2	8	412	17.0	9	487	17.3	9
11. Champlain	856	15.0	9	904	15.9	8	880	17.7	8
12. North Simcoe Muskoka	466	15.3	8	383	11.0	7	422	11.1	7
13. North East	670	15.7	8	671	15.3	8	594	15.3	8
14. North West	247	13.0	8	332	12.3	8	295	15.6	8

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged with the most responsible diagnosis of ischemic stroke.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

**Exhibit 2.5.3 Acute inpatient length of stay for transient ischemic attack, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Site	2003/04			2006/07			2007/08		
	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
<b>Ontario</b>	<b>2,716</b>	<b>4.7</b>	<b>3</b>	<b>2,548</b>	<b>4.9</b>	<b>3</b>	<b>2,697</b>	<b>5.3</b>	<b>3</b>
<b>Ontario Stroke System Region</b>									
Central East	425	4.3	3	374	4.5	3	393	4.9	3
Central South	564	4.5	3	477	4.3	3	512	5.2	3
East – Champlain	222	4.8	4	175	5.8	4	214	8.5	4
Northeast	286	4.8	3	279	6.3	3	294	5.6	3
Northwest	111	5.9	3	110	4.7	3.5	113	4.1	3
South East	157	5.2	3	127	5.7	3	125	6.8	4
Southwest	417	4.5	3	399	5.0	3	363	4.2	3
Toronto – North & East	108	5.3	3	173	4.6	3	186	4.1	3
Toronto – Southeast	80	4.8	4	84	5.3	4	111	5.6	4
Toronto – West	153	5.8	3	140	5.0	3	176	5.4	3
West GTA	193	4.0	3	210	4.4	3	210	4.9	4
<b>Ontario Stroke System Classification</b>									
Regional stroke centre	552	5.3	3	596	4.8	3.5	649	4.9	3
District stroke centre	463	4.6	3	443	5.3	3	485	5.5	3
Non-designated	1,701	4.6	3	1,509	4.9	3	1,563	5.3	3
<b>Local Health Integration Network</b>									
1. Erie St. Clair	190	4.1	3	144	6.5	4	142	4.7	4
2. South West	227	4.9	3	255	4.2	3	221	3.9	2
3. Waterloo Wellington	131	4.5	3	133	3.5	3	126	3.8	2
4. Hamilton Niagara Haldimand Brant	433	4.5	3	344	4.6	3	386	5.7	3
5. Central West	55	3.5	3	76	5.2	4	84	5.2	4
6. Mississauga Halton	138	4.2	3	134	4.0	3	126	4.6	4
7. Toronto Central	163	4.6	3	192	4.2	3	233	4.8	3
8. Central	165	5.6	3	221	5.9	4	241	5.9	3
9. Central East	231	5.3	4	201	4.5	3	242	4.7	3
10. South East	157	5.2	3	127	5.7	3	125	6.8	4
11. Champlain	222	4.8	4	175	5.8	4	214	8.5	4
12. North Simcoe Muskoka	207	3.7	2	157	3.8	2	150	3.6	2
13. North East	286	4.8	3	279	6.3	3	294	5.6	3
14. North West	111	5.9	3	110	4.7	3.5	113	4.1	3

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged with most responsible diagnosis of TIA.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

**Exhibit 2.5.4 Acute inpatient length of stay for intracerebral hemorrhage, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Site	2003/04			2006/07			2007/08		
	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
<b>Ontario</b>	<b>1,722</b>	<b>13.9</b>	<b>6</b>	<b>1,604</b>	<b>14.6</b>	<b>6</b>	<b>1,618</b>	<b>14.8</b>	<b>7</b>
<b>Ontario Stroke System Region</b>									
Central East	209	13.9	6	214	9.4	6	191	15.1	6
Central South	318	11.7	5	280	15.2	6	211	11.2	5
East – Champlain	171	15.5	8	135	16.0	7	179	15.8	7
Northeast	94	16.9	5	80	18.8	8.5	88	15.6	7.5
Northwest	32	14.9	7	35	10.8	6	42	13.3	7.5
South East	54	14.3	6	67	19.3	6	67	22.4	11
Southwest	214	10.4	6	204	10.7	5	209	11.7	6
Toronto – North & East	141	13.7	6	139	15.2	7	148	17.9	7
Toronto – Southeast	107	10.6	6	110	18.0	10	107	16.3	8
Toronto – West	171	21.4	9	164	18.5	8	173	16.2	10
West GTA	211	13.8	7	176	14.9	6	203	14.0	7
<b>Ontario Stroke System Classification</b>									
Regional stroke centre	630	14.9	7	639	17.4	7	660	16.5	8
District stroke centre	223	12.9	6	221	9.1	5	184	11.1	4
Non-designated	869	13.5	6	744	14.0	6	774	14.3	7
<b>Local Health Integration Network</b>									
1. Erie St. Clair	82	10.5	8	68	10.0	7	77	10.3	6
2. South West	132	10.4	6	136	11.0	5	132	12.5	6
3. Waterloo Wellington	71	11.0	4	61	6.5	2	60	9.4	3
4. Hamilton Niagara Haldimand Brant	247	11.9	6	219	17.6	7	151	11.9	5
5. Central West	67	17.6	9	54	13.3	6	69	14.0	7
6. Mississauga Halton	144	12.0	6	122	15.7	6	134	14.0	7
7. Toronto Central	245	15.8	7	255	17.9	9	259	17.6	9
8. Central	168	19.7	10	161	13.9	6	158	13.3	7
9. Central East	173	12.4	5	146	13.1	7	137	19.0	6
10. South East	54	14.3	6	67	19.3	6	67	22.4	11
11. Champlain	171	15.5	8	135	16.0	7	179	15.8	7
12. North Simcoe Muskoka	42	7.4	3	65	6.3	5	65	12.6	6
13. North East	94	16.9	5	80	18.8	8.5	88	15.6	7.5
14. North West	32	14.9	7	35	10.8	6	42	13.3	7.5

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients diagnosed with most responsible diagnosis of intracerebral hemorrhage.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

**Exhibit 2.5.5 Acute inpatient length of stay for subarachnoid hemorrhage, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Site	2003/04			2006/07			2007/08		
	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
<b>Ontario</b>	<b>696</b>	<b>15.0</b>	<b>9</b>	<b>784</b>	<b>15.3</b>	<b>9</b>	<b>786</b>	<b>14.4</b>	<b>8</b>
<b>Ontario Stroke System Region</b>									
Central East	16	2.1	1	29	5.7	2	24	11.4	3.5
Central South	89	12.7	6	117	15.2	9	119	12.9	6
East – Champlain	68	18.9	12	85	18.9	12	77	17.1	8
Northeast	36	7.7	2	28	5.6	1	27	7.4	3
Northwest	18	6.2	2	13	7.8	1	14	5.1	2.5
South East	43	15.3	5	27	33.8	8	37	9.2	3
Southwest	120	16.9	11	90	19.0	12	97	14.6	8
Toronto – North & East	36	14.4	11	69	16.3	6	45	17.3	8
Toronto – Southeast	79	15.7	14	91	14.4	12	112	13.3	8.5
Toronto – West	105	19.0	10	152	14.8	11	169	17.0	11
West GTA	86	13.7	9	83	10.8	6	65	16.0	11
<b>Ontario Stroke System Classification</b>									
Regional stroke centre	517	16.7	10	542	17.4	11	564	15.0	9
District stroke centre	24	2.3	1	33	2.2	1	25	6.8	2
Non-designated	155	11.4	4	209	11.9	4	197	13.7	5
<b>Local Health Integration Network</b>									
1. Erie St. Clair	30	15.9	5	17	14.2	10	26	10.4	5.5
2. South West	90	17.3	11.5	73	20.1	13	71	16.1	9
3. Waterloo Wellington	8	2.8	1	11	4.8	1	10	5.1	3
4. Hamilton Niagara Haldimand Brant	81	13.6	6	106	16.2	9.5	109	13.6	6
5. Central West	12	8.8	2	13	11.3	2	16	20.9	5.5
6. Mississauga Halton	74	14.4	9.5	70	10.7	6.5	49	14.3	11
7. Toronto Central	201	18.1	13	281	16.0	11	297	15.7	10
8. Central	17	5.2	2	22	4.6	1	19	11.8	3
9. Central East	15	3.1	1	28	7.3	2	26	18.1	4.5
10. South East	43	15.3	5	27	33.8	8	37	9.2	3
11. Champlain	68	18.9	12	85	18.9	12	77	17.1	8
12. North Simcoe Muskoka	**	-	-	10	5.3	2	8	7.1	1
13. North East	36	7.7	2	28	5.6	1	27	7.4	3
14. North West	18	6.2	2	13	7.8	1	14	5.1	2.5

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged with most responsible diagnosis of subarachnoid hemorrhage.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Volumes were too low to report at the sub-LHIN level. Most cases were treated at regional stroke centres.

(3) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 2.5.6 Acute inpatient length of stay for ill-defined stroke, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Site	2003/04			2006/07			2007/08		
	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>1</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
<b>Ontario</b>	<b>5,223</b>	<b>12.1</b>	<b>7</b>	<b>4,210</b>	<b>11.8</b>	<b>7</b>	<b>3,911</b>	<b>12.1</b>	<b>7</b>
<b>Ontario Stroke System Region</b>									
Central East	884	12.8	8	739	11.9	7	679	11.3	7
Central South	1,002	13.1	7	684	12.6	7	639	11.5	6
East – Champlain	304	13.0	8	372	14.6	7	330	15.1	7
Northeast	462	14.5	8	351	14.4	7	319	16.7	7
Northwest	147	12.1	7	143	13.7	7	111	20.3	6
South East	291	12.8	7	169	12.0	6	217	14.7	7
Southwest	867	8.8	6	775	9.9	6	694	9.1	6
Toronto – North & East	268	11.9	8	200	9.9	5	174	10.5	5
Toronto – Southeast	283	12.2	8	198	11.4	6	125	12.0	8
Toronto – West	253	12.5	7	228	12.1	6	232	10.8	6
West GTA	462	11.7	6	351	9.6	6	391	10.9	6
<b>Ontario Stroke System Classification</b>									
Regional stroke centre	916	11.9	7	771	11.0	6	647	10.3	6
District stroke centre	805	11.1	6	737	10.9	6	668	10.2	6
Non-designated	3,502	12.5	7	2,702	12.3	7	2,596	13.0	7
<b>Local Health Integration Network</b>									
1. Erie St. Clair	399	8.1	6	381	10.4	7	344	9.9	7
2. South West	468	9.3	6	394	9.3	6	350	8.4	5
3. Waterloo Wellington	268	13.1	7	119	9.7	7	104	9.3	6
4. Hamilton Niagara Haldimand Brant	734	13.1	8	565	13.2	7	535	12.0	6
5. Central West	217	12.0	7	137	10.4	7	187	12.2	8
6. Mississauga Halton	245	11.4	6	214	9.1	6	204	9.7	6
7. Toronto Central	382	12.6	8	253	9.8	5	245	8.7	6
8. Central	370	12.1	7.5	356	12.5	7	297	12.8	8
9. Central East	633	11.5	7	560	12.1	7	452	11.5	7
10. South East	291	12.8	7	169	12.0	6	217	14.7	7
11. Champlain	304	13.0	8	372	14.6	7	330	15.1	7
12. North Simcoe Muskoka	303	15.1	8	196	10.4	6	216	11.2	7
13. North East	462	14.5	8	351	14.4	7	319	16.7	7
14. North West	147	12.1	7	143	13.7	7	111	20.3	6

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: Patients with ICD-10 code I64 (stroke type not specified/undetermined).

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 2.6 Age- and sex-adjusted in-hospital complication rates for pneumonia among stroke/TIA patients, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Group/Site	2003/04			2006/07			2007/08		
	n	N	Adjusted Rate (%)	n	N	Adjusted Rate (%)	n	N	Adjusted Rate (%)
<b>Ontario<sup>1</sup></b>	<b>271</b>	<b>16,115</b>	<b>1.68</b>	<b>233</b>	<b>15,521</b>	<b>1.50</b>	<b>194</b>	<b>15,514</b>	<b>1.25</b>
<b>Ontario Stroke System Region</b>									
Central East	39	2,218	1.77	32	2,135	1.49	18	2,047	0.87
Central South	37	2,883	1.29	32	2,720	1.18	36	2,712	1.32
East – Champlain	20	1,325	1.51	26	1,299	2.00	23	1,350	1.71
Northeast	8	1,086	0.73	13	1,058	1.23	6	1,003	0.60
Northwest	**	408	-	**	490	0.21	8	464	1.73
South East	13	763	1.71	7	633	1.10	7	716	0.96
Southwest	41	2,545	1.62	22	2,317	0.95	25	2,295	1.08
Toronto – North & East	25	1,047	2.41	21	1,190	1.76	8	1,143	0.70
Toronto – Southeast	13	885	1.45	18	845	2.15	9	835	1.12
Toronto – West	37	1,346	2.70	38	1,277	3.01	25	1,357	1.90
West GTA	35	1,609	2.16	23	1,557	1.48	29	1,592	1.83
<b>Ontario Stroke System Classification</b>									
Regional stroke centre	127	4,525	2.75	105	4,827	2.20	97	4,924	2.02
District stroke centre	26	2,340	1.12	29	2,456	1.18	13	2,444	0.53
Non-designated	118	9,250	1.29	99	8,238	1.19	84	8,146	1.02
<b>Local Health Integration Network</b>									
1. Erie St. Clair	15	1,101	1.37	**	950	0.52	6	964	0.62
2. South West	26	1,444	1.80	17	1,367	1.25	19	1,331	1.41
3. Waterloo Wellington	9	737	1.24	**	709	0.71	**	698	0.57
4. Hamilton Niagara Haldimand Brant	28	2,146	1.31	27	2,011	1.34	32	2,014	1.58
5. Central West	11	559	1.95	7	491	1.43	8	575	1.39
6. Mississauga Halton	24	1,050	2.27	16	1,066	1.51	21	1,017	2.08
7. Toronto Central	56	1,754	3.12	58	1,837	3.20	31	1,907	1.70
8. Central	31	1,357	2.32	32	1,433	2.22	13	1,395	0.92
9. Central East	25	1,667	1.51	14	1,562	0.89	12	1,435	0.82
10. South East	14	775	1.81	7	633	1.10	7	716	0.96
11. Champlain	19	1,313	1.45	26	1,299	2.00	23	1,350	1.71
12. North Simcoe Muskoka	**	718	-	**	615	0.81	**	645	0.61
13. North East	8	1,086	0.73	13	1,058	1.23	6	1,003	0.60
14. North West	**	408	-	**	490	0.21	8	464	1.73

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All stroke and TIA patients admitted to any acute care hospital in Ontario for stroke management.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).



**Exhibit 2.7 Discharge destination<sup>1</sup> of stroke/TIA patients following an acute hospitalization, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04, 2006/07 and 2007/08**

Type/Site	Year	Sample Size n (%)	Acute Care n (%)	Complex Continuing Care n (%)	Home with Service n (%)	Home without Service n (%)	Long-term Care <sup>2</sup> n (%)	Palliative Care n (%)	Rehabilitation n (%)	Other n (%)
<b>Ontario<sup>3</sup></b>	<b>2003/04</b>	<b>13,557 (20.1)</b>	<b>633 (4.7)</b>	<b>1,198 (8.8)</b>	<b>1,493 (11.0)</b>	<b>6,091 (44.9)</b>	<b>1,152 (8.5)</b>	<b>46 (0.3)</b>	<b>2,747 (20.3)</b>	<b>197 (1.5)</b>
	<b>2006/07</b>	<b>13,197 (19.5)</b>	<b>841 (6.4)</b>	<b>957 (7.3)</b>	<b>1,778 (13.5)</b>	<b>5,368 (40.7)</b>	<b>1,075 (8.1)</b>	<b>48 (0.4)</b>	<b>2,991 (22.7)</b>	<b>139 (1.1)</b>
	<b>2007/08</b>	<b>13,219 (19.6)</b>	<b>804 (6.1)</b>	<b>927 (7.0)</b>	<b>1,860 (14.1)</b>	<b>5,471 (41.4)</b>	<b>969 (7.3)</b>	<b>39 (0.3)</b>	<b>2,998 (22.7)</b>	<b>151 (1.1)</b>
<b>Stroke Type</b>										
Intracerebral hemorrhage	2003/04	1,055 (20.5)	139 (13.2)	111 (10.5)	98 (9.3)	311 (29.5)	110 (10.4)	7 (0.7)	259 (24.5)	20 (1.9)
	2006/07	1,036 (20.2)	159 (15.3)	108 (10.4)	99 (9.6)	249 (24.0)	118 (11.4)	8 (0.8)	286 (27.6)	9 (0.9)
	2007/08	1,042 (20.3)	144 (13.8)	110 (10.6)	102 (9.8)	279 (26.8)	95 (9.1)	**	300 (28.8)	7 (0.7)
Ischemic stroke	2003/04	9,276 (20.2)	342 (3.7)	1,023 (11.0)	1,059 (11.4)	3,417 (36.8)	910 (9.8)	31 (0.3)	2,360 (25.4)	134 (1.4)
	2006/07	9,024 (19.6)	501 (5.6)	796 (8.8)	1,242 (13.8)	2,964 (32.8)	835 (9.3)	34 (0.4)	2,553 (28.3)	99 (1.1)
	2007/08	8,904 (19.4)	508 (5.7)	756 (8.5)	1,265 (14.2)	2,956 (33.2)	737 (8.3)	24 (0.3)	2,545 (28.6)	113 (1.3)
Subarachnoid hemorrhage	2003/04	522 (18.3)	110 (21.1)	14 (2.7)	27 (5.2)	267 (51.1)	6 (1.1)	6 (1.1)	82 (15.7)	10 (1.9)
	2006/07	599 (21.0)	134 (22.4)	17 (2.8)	37 (6.2)	301 (50.3)	11 (1.8)	**	91 (15.2)	**
	2007/08	584 (20.5)	103 (17.6)	25 (4.3)	42 (7.2)	310 (53.1)	11 (1.9)	**	86 (14.7)	**
Transient ischemic attack	2003/04	2,704 (19.8)	42 (1.6)	50 (1.8)	309 (11.4)	2,096 (77.5)	126 (4.7)	**	46 (1.7)	33 (1.2)
	2006/07	2,538 (18.6)	47 (1.9)	36 (1.4)	400 (15.8)	1,854 (73.0)	111 (4.4)	**	61 (2.4)	26 (1.0)
	2007/08	2,689 (19.7)	49 (1.8)	36 (1.3)	451 (16.8)	1,926 (71.6)	126 (4.7)	8 (0.3)	67 (2.5)	26 (1.0)
<b>Ontario Stroke System Classification</b>										
Regional stroke centre	2003/04	3,824 (18.6)	256 (6.7)	163 (4.3)	376 (9.8)	1,681 (44.0)	284 (7.4)	23 (0.6)	1,004 (26.3)	37 (1.0)
	2006/07	4,143 (20.2)	337 (8.1)	196 (4.7)	445 (10.7)	1,700 (41.0)	312 (7.5)	9 (0.2)	1,105 (26.7)	39 (0.9)
	2007/08	4,213 (20.5)	350 (8.3)	165 (3.9)	531 (12.6)	1,744 (41.4)	252 (6.0)	8 (0.2)	1,107 (26.3)	56 (1.3)
District stroke centre	2003/04	1,968 (18.7)	82 (4.2)	189 (9.6)	205 (10.4)	868 (44.1)	139 (7.1)	**	453 (23.0)	29 (1.5)
	2006/07	2,107 (20.0)	137 (6.5)	189 (9.0)	268 (12.7)	767 (36.4)	129 (6.1)	11 (0.5)	585 (27.8)	21 (1.0)
	2007/08	2,108 (20.0)	112 (5.3)	167 (7.9)	258 (12.2)	818 (38.8)	96 (4.6)	6 (0.3)	623 (29.6)	28 (1.3)
Non-designated	2003/04	7,765 (21.2)	295 (3.8)	846 (10.9)	912 (11.7)	3,542 (45.6)	729 (9.4)	20 (0.3)	1,290 (16.6)	131 (1.7)
	2006/07	6,947 (19.0)	367 (5.3)	572 (8.2)	1,065 (15.3)	2,901 (41.8)	634 (9.1)	28 (0.4)	1,301 (18.7)	79 (1.1)
	2007/08	6,898 (18.9)	342 (5.0)	595 (8.6)	1,071 (15.5)	2,909 (42.2)	621 (9.0)	25 (0.4)	1,268 (18.4)	67 (1.0)
<b>Ontario Stroke System Region</b>										
Central East	2003/04	1,869 (20.4)	56 (3.0)	188 (10.1)	232 (12.4)	829 (44.4)	143 (7.7)	**	377 (20.2)	41 (2.2)
	2006/07	1,816 (19.9)	106 (5.8)	156 (8.6)	278 (15.3)	661 (36.4)	135 (7.4)	6 (0.3)	462 (25.4)	12 (0.7)
	2007/08	1,745 (19.1)	104 (6.0)	142 (8.1)	268 (15.4)	650 (37.2)	100 (5.7)	**	465 (26.6)	13 (0.7)
Central South	2003/04	2,400 (20.3)	102 (4.3)	253 (10.5)	253 (10.5)	1,044 (43.5)	232 (9.7)	6 (0.3)	483 (20.1)	27 (1.1)
	2006/07	2,291 (19.4)	175 (7.6)	219 (9.6)	364 (15.9)	846 (36.9)	185 (8.1)	-	481 (21.0)	21 (0.9)
	2007/08	2,300 (19.4)	135 (5.9)	227 (9.9)	389 (16.9)	918 (39.9)	156 (6.8)	**	449 (19.5)	22 (1.0)
East – Champlain	2003/04	1,100 (19.3)	62 (5.6)	42 (3.8)	116 (10.5)	526 (47.8)	103 (9.4)	7 (0.6)	227 (20.6)	17 (1.5)
	2006/07	1,103 (19.4)	120 (10.9)	46 (4.2)	118 (10.7)	413 (37.4)	75 (6.8)	12 (1.1)	298 (27.0)	21 (1.9)
	2007/08	1,136 (20.0)	118 (10.4)	64 (5.6)	152 (13.4)	394 (34.7)	93 (8.2)	7 (0.6)	296 (26.1)	12 (1.1)
Northeast	2003/04	935 (20.3)	73 (7.8)	50 (5.3)	97 (10.4)	529 (56.6)	73 (7.8)	**	92 (9.8)	19 (2.0)
	2006/07	917 (19.9)	71 (7.7)	42 (4.6)	126 (13.7)	452 (49.3)	68 (7.4)	**	148 (16.1)	8 (0.9)
	2007/08	873 (19.0)	53 (6.1)	15 (1.7)	129 (14.8)	481 (55.1)	48 (5.5)	**	137 (15.7)	9 (1.0)
Northwest	2003/04	338 (16.6)	24 (7.1)	68 (20.1)	39 (11.5)	175 (51.8)	10 (3.0)	**	18 (5.3)	**
	2006/07	447 (21.9)	46 (10.3)	61 (13.6)	47 (10.5)	194 (43.4)	33 (7.4)	**	59 (13.2)	6 (1.3)
	2007/08	413 (20.3)	37 (9.0)	34 (8.2)	50 (12.1)	193 (46.7)	22 (5.3)	**	73 (17.7)	**
South East	2003/04	619 (21.1)	37 (6.0)	37 (6.0)	81 (13.1)	314 (50.7)	32 (5.2)	**	106 (17.1)	11 (1.8)
	2006/07	508 (17.3)	31 (6.1)	40 (7.9)	77 (15.2)	253 (49.8)	35 (6.9)	**	66 (13.0)	**
	2007/08	587 (20.0)	50 (8.5)	45 (7.7)	99 (16.9)	256 (43.6)	41 (7.0)	**	86 (14.7)	7 (1.2)
Southwest	2003/04	2,188 (21.1)	141 (6.4)	216 (9.9)	251 (11.5)	883 (40.4)	170 (7.8)	6 (0.3)	496 (22.7)	25 (1.1)
	2006/07	1,985 (19.1)	125 (6.3)	132 (6.6)	309 (15.6)	780 (39.3)	122 (6.1)	**	487 (24.5)	26 (1.3)
	2007/08	1,952 (18.8)	110 (5.6)	108 (5.5)	305 (15.6)	725 (37.1)	126 (6.5)	10 (0.5)	531 (27.2)	37 (1.9)

Type/Site	Year	Sample Size n (%)	Acute Care n (%)	Complex Continuing Care n (%)	Home with Service n (%)	Home without Service n (%)	Long-term Care <sup>2</sup> n (%)	Palliative Care n (%)	Rehabilitation n (%)	Other n (%)
<b>Ontario<sup>3</sup></b>	2003/04	13,557 (20.1)	633 (4.7)	1,198 (8.8)	1,493 (11.0)	6,091 (44.9)	1,152 (8.5)	46 (0.3)	2,747 (20.3)	197 (1.5)
	2006/07	13,197 (19.5)	841 (6.4)	957 (7.3)	1,778 (13.5)	5,368 (40.7)	1,075 (8.1)	48 (0.4)	2,991 (22.7)	139 (1.1)
	2007/08	13,219 (19.6)	804 (6.1)	927 (7.0)	1,860 (14.1)	5,471 (41.4)	969 (7.3)	39 (0.3)	2,998 (22.7)	151 (1.1)
Toronto – North & East	2003/04	845 (17.2)	18 (2.1)	35 (4.1)	108 (12.8)	380 (45.0)	83 (9.8)	**	203 (24.0)	14 (1.7)
	2006/07	1,017 (20.7)	50 (4.9)	18 (1.8)	112 (11.0)	474 (46.6)	114 (11.2)	**	239 (23.5)	8 (0.8)
	2007/08	978 (19.9)	53 (5.4)	21 (2.1)	85 (8.7)	459 (46.9)	97 (9.9)	**	244 (24.9)	17 (1.7)
Toronto – Southeast	2003/04	758 (21.2)	36 (4.7)	106 (14.0)	73 (9.6)	283 (37.3)	81 (10.7)	13 (1.7)	153 (20.2)	13 (1.7)
	2006/07	712 (19.9)	36 (5.1)	94 (13.2)	54 (7.6)	297 (41.7)	76 (10.7)	6 (0.8)	143 (20.1)	6 (0.8)
	2007/08	704 (19.7)	39 (5.5)	93 (13.2)	65 (9.2)	315 (44.7)	49 (7.0)	**	137 (19.5)	**
Toronto – West	2003/04	1,108 (19.7)	21 (1.9)	57 (5.1)	127 (11.5)	508 (45.8)	131 (11.8)	**	249 (22.5)	13 (1.2)
	2006/07	1,052 (18.7)	39 (3.7)	41 (3.9)	156 (14.8)	414 (39.4)	122 (11.6)	**	264 (25.1)	13 (1.2)
	2007/08	1,142 (20.3)	49 (4.3)	62 (5.4)	170 (14.9)	498 (43.6)	121 (10.6)	-	230 (20.1)	12 (1.1)
West GTA	2003/04	1,397 (20.2)	63 (4.5)	146 (10.5)	116 (8.3)	620 (44.4)	94 (6.7)	**	343 (24.6)	14 (1.0)
	2006/07	1,349 (19.6)	42 (3.1)	108 (8.0)	137 (10.2)	584 (43.3)	110 (8.2)	9 (0.7)	344 (25.5)	15 (1.1)
	2007/08	1,389 (20.1)	56 (4.0)	116 (8.4)	148 (10.7)	582 (41.9)	116 (8.4)	**	350 (25.2)	18 (1.3)
<b>Local Health Integration Network</b>										
1. Erie St. Clair	2003/04	968 (21.5)	28 (2.9)	44 (4.5)	125 (12.9)	376 (38.8)	84 (8.7)	6 (0.6)	290 (30.0)	15 (1.5)
	2006/07	837 (18.6)	22 (2.6)	46 (5.5)	130 (15.5)	317 (37.9)	50 (6.0)	**	260 (31.1)	11 (1.3)
	2007/08	823 (18.3)	23 (2.8)	40 (4.9)	134 (16.3)	287 (34.9)	48 (5.8)	**	265 (32.2)	23 (2.8)
2. South West	2003/04	1,220 (20.8)	113 (9.3)	172 (14.1)	126 (10.3)	507 (41.6)	86 (7.0)	-	206 (16.9)	10 (0.8)
	2006/07	1,148 (19.5)	103 (9.0)	86 (7.5)	179 (15.6)	463 (40.3)	72 (6.3)	**	227 (19.8)	15 (1.3)
	2007/08	1,129 (19.2)	87 (7.7)	68 (6.0)	171 (15.1)	438 (38.8)	78 (6.9)	7 (0.6)	266 (23.6)	14 (1.2)
3. Waterloo Wellington	2003/04	603 (19.7)	23 (3.8)	76 (12.6)	71 (11.8)	258 (42.8)	56 (9.3)	**	114 (18.9)	**
	2006/07	584 (19.1)	40 (6.8)	49 (8.4)	116 (19.9)	219 (37.5)	50 (8.6)	-	107 (18.3)	**
	2007/08	580 (18.9)	25 (4.3)	54 (9.3)	103 (17.8)	229 (39.5)	48 (8.3)	**	116 (20.0)	**
4. Hamilton Niagara Haldimand Brant	2003/04	1,797 (20.5)	79 (4.4)	177 (9.8)	182 (10.1)	786 (43.7)	176 (9.8)	**	369 (20.5)	23 (1.3)
	2006/07	1,707 (19.5)	135 (7.9)	170 (10.0)	248 (14.5)	627 (36.7)	135 (7.9)	-	374 (21.9)	18 (1.1)
	2007/08	1,720 (19.6)	110 (6.4)	173 (10.1)	286 (16.6)	689 (40.1)	108 (6.3)	**	333 (19.4)	19 (1.1)
5. Central West	2003/04	491 (20.7)	15 (3.1)	92 (18.7)	58 (11.8)	213 (43.4)	44 (9.0)	**	60 (12.2)	8 (1.6)
	2006/07	443 (18.7)	10 (2.3)	53 (12.0)	59 (13.3)	185 (41.8)	61 (13.8)	8 (1.8)	59 (13.3)	8 (1.8)
	2007/08	516 (21.7)	25 (4.8)	60 (11.6)	68 (13.2)	207 (40.1)	71 (13.8)	**	73 (14.1)	11 (2.1)
6. Mississauga Halton	2003/04	906 (20.0)	48 (5.3)	54 (6.0)	58 (6.4)	407 (44.9)	50 (5.5)	-	283 (31.2)	6 (0.7)
	2006/07	906 (20.0)	32 (3.5)	55 (6.1)	78 (8.6)	399 (44.0)	49 (5.4)	**	285 (31.5)	7 (0.8)
	2007/08	873 (19.3)	31 (3.6)	56 (6.4)	80 (9.2)	375 (43.0)	45 (5.2)	**	277 (31.7)	7 (0.8)
7. Toronto Central	2003/04	1,488 (18.7)	49 (3.3)	87 (5.8)	198 (13.3)	647 (43.5)	151 (10.1)	16 (1.1)	318 (21.4)	22 (1.5)
	2006/07	1,558 (19.6)	102 (6.5)	97 (6.2)	186 (11.9)	642 (41.2)	147 (9.4)	9 (0.6)	358 (23.0)	17 (1.1)
	2007/08	1,620 (20.4)	114 (7.0)	109 (6.7)	199 (12.3)	709 (43.8)	125 (7.7)	**	346 (21.4)	15 (0.9)
8. Central	2003/04	1,080 (18.7)	20 (1.9)	82 (7.6)	100 (9.3)	458 (42.4)	133 (12.3)	**	272 (25.2)	12 (1.1)
	2006/07	1,192 (20.6)	37 (3.1)	80 (6.7)	121 (10.2)	509 (42.7)	127 (10.7)	6 (0.5)	302 (25.3)	10 (0.8)
	2007/08	1,186 (20.5)	34 (2.9)	73 (6.2)	132 (11.1)	515 (43.4)	106 (8.9)	**	306 (25.8)	16 (1.3)
9. Central East	2003/04	1,382 (21.1)	42 (3.0)	181 (13.1)	190 (13.7)	552 (39.9)	111 (8.0)	**	278 (20.1)	26 (1.9)
	2006/07	1,324 (20.2)	51 (3.9)	102 (7.7)	205 (15.5)	472 (35.6)	144 (10.9)	**	342 (25.8)	7 (0.5)
	2007/08	1,195 (18.2)	49 (4.1)	90 (7.5)	159 (13.3)	464 (38.8)	111 (9.3)	**	312 (26.1)	8 (0.7)
10. South East	2003/04	619 (21.1)	37 (6.0)	37 (6.0)	81 (13.1)	314 (50.7)	32 (5.2)	**	106 (17.1)	11 (1.8)
	2006/07	508 (17.3)	31 (6.1)	40 (7.9)	77 (15.2)	253 (49.8)	35 (6.9)	**	66 (13.0)	**
	2007/08	587 (20.0)	50 (8.5)	45 (7.7)	99 (16.9)	256 (43.6)	41 (7.0)	**	86 (14.7)	7 (1.2)
11. Champlain	2003/04	1,100 (19.3)	62 (5.6)	42 (3.8)	116 (10.5)	526 (47.8)	103 (9.4)	7 (0.6)	227 (20.6)	17 (1.5)
	2006/07	1,103 (19.4)	120 (10.9)	46 (4.2)	118 (10.7)	413 (37.4)	75 (6.8)	12 (1.1)	298 (27.0)	21 (1.9)
	2007/08	1,136 (20.0)	118 (10.4)	64 (5.6)	152 (13.4)	394 (34.7)	93 (8.2)	7 (0.6)	296 (26.1)	12 (1.1)

Type/Site	Year	Sample Size n (%)	Acute Care n (%)	Complex Continuing Care n (%)	Home with Service n (%)	Home without Service n (%)	Long-term Care <sup>2</sup> n (%)	Palliative Care n (%)	Rehabilitation n (%)	Other n (%)
Ontario <sup>3</sup>	2003/04	13,557 (20.1)	633 (4.7)	1,198 (8.8)	1,493 (11.0)	6,091 (44.9)	1,152 (8.5)	46 (0.3)	2,747 (20.3)	197 (1.5)
	2006/07	13,197 (19.5)	841 (6.4)	957 (7.3)	1,778 (13.5)	5,368 (40.7)	1,075 (8.1)	48 (0.4)	2,991 (22.7)	139 (1.1)
	2007/08	13,219 (19.6)	804 (6.1)	927 (7.0)	1,860 (14.1)	5,471 (41.4)	969 (7.3)	39 (0.3)	2,998 (22.7)	151 (1.1)
12. North Simcoe Muskoka	2003/04	630 (21.1)	20 (3.2)	36 (5.7)	52 (8.3)	343 (54.4)	43 (6.8)	**	114 (18.1)	21 (3.3)
	2006/07	523 (17.6)	41 (7.8)	30 (5.7)	88 (16.8)	223 (42.6)	29 (5.5)	**	106 (20.3)	**
	2007/08	568 (19.1)	48 (8.5)	46 (8.1)	98 (17.3)	234 (41.2)	25 (4.4)	-	112 (19.7)	**
13. North East	2003/04	935 (20.3)	73 (7.8)	50 (5.3)	97 (10.4)	529 (56.6)	73 (7.8)	**	92 (9.8)	19 (2.0)
	2006/07	917 (19.9)	71 (7.7)	42 (4.6)	126 (13.7)	452 (49.3)	68 (7.4)	**	148 (16.1)	8 (0.9)
	2007/08	873 (19)	53 (6.1)	15 (1.7)	129 (14.8)	481 (55.1)	48 (5.5)	**	137 (15.7)	9 (1.0)
14. North West	2003/04	338 (16.6)	24 (7.1)	68 (20.1)	39 (11.5)	175 (51.8)	10 (3.0)	**	18 (5.3)	**
	2006/07	447 (21.9)	46 (10.3)	61 (13.6)	47 (10.5)	194 (43.4)	33 (7.4)	**	59 (13.2)	6 (1.3)
	2007/08	413 (20.3)	37 (9.0)	34 (8.2)	50 (12.1)	193 (46.7)	22 (5.3)	**	73 (17.7)	**

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients admitted to an acute care hospital in Ontario with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack.

<sup>1</sup> The sample of all discharge dispositions, except in-hospital deaths, is among patients discharged alive.

<sup>2</sup> For presentation of data in this report, long-term care nursing home and long-term care home for the aged are combined.

<sup>3</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 2.8 Time to carotid intervention within six months of hospitalization for stroke or transient ischemic attack, in Ontario and by OSS region, OSS classification and Local Health Integration Network, 2003/04 to 2007/08**

Group/Site	2003/04			2004/05			2005/06			2006/07			2007/08		
	No. of Patients <sup>1</sup>	Mean Time (Days)	Median Time (Days)	No. of Patients <sup>1</sup>	Mean Time (Days)	Median Time (Days)	No. of Patients <sup>1</sup>	Mean Time (Days)	Median Time (Days)	No. of Patients <sup>1</sup>	Mean Time (Days)	Median Time (Days)	No. of Patients <sup>1</sup>	Mean Time (Days)	Median Time (Days)
<b>Ontario</b>	<b>249</b>	<b>54.2</b>	<b>41</b>	<b>278</b>	<b>53.6</b>	<b>36</b>	<b>280</b>	<b>50.7</b>	<b>27</b>	<b>304</b>	<b>47.5</b>	<b>30</b>	<b>289</b>	<b>30.0</b>	<b>15</b>
<b>Ontario Stroke System Region</b>															
Central East	32	71.4	54	39	68.6	61	30	54.1	39.5	53	52.2	37	50	23.3	13.5
Central South	35	79.9	71	37	61.7	54	39	73.4	58	42	65.1	58.5	31	42.5	26
East – Champlain	22	43.7	25	20	82.4	92.5	20	56.1	26	28	46.9	19.5	15	41	13
Northeast	17	84	102	22	60.6	43.5	29	46.8	44	26	59.9	30.5	27	38.4	25
Northwest	9	45.1	14	13	69.5	92	17	45.9	25	12	32.9	18.5	13	32.5	18
South East	16	51.5	42.5	13	28.8	11	14	41.1	23	13	32.8	17	18	26.2	9.5
Southwest	40	46.9	26	40	49.4	20.5	39	69.1	61	37	53	48	40	46.4	29
Toronto – North & East	13	27.5	8	24	42.5	32	21	21.1	15	22	30.4	7	21	12.5	8
Toronto – Southeast	12	42.5	17	9	34.4	6	7	60.4	62	10	37.2	32	13	13.5	7
Toronto – West	16	68.3	81	24	42.2	35.5	13	55.9	24	21	51.9	32	23	27.7	17
West GTA	37	26.1	11	37	37.2	9	51	31	9	40	28.8	20.5	38	18.3	10
<b>Ontario Stroke System Classification</b>															
Regional stroke centre	108	33.4	13	120	40.3	11.5	121	37.3	14	124	33	16	134	18.7	10
District stroke centre	24	79.9	83	30	65.4	53.5	38	77.6	67.5	40	55.3	52	53	38.1	22
Non-designated	117	68.2	56	128	63.4	52	121	55.6	36	140	58	42.5	102	40.6	26.5
<b>Local Health Integration Network</b>															
1. Erie St. Clair	15	35.4	15	20	51.2	23.5	18	78.4	78	19	33.4	21	18	50.5	29
2. South West	25	53.8	45	20	47.6	13.5	21	61	59	18	73.6	73	22	43.1	32
3. Waterloo Wellington	13	84.6	107	8	61.4	39	15	75	47	13	73.6	69	14	39.4	34
4. Hamilton Niagara Haldimand Brant	22	77.1	64.5	29	61.8	58	24	72.3	66.5	29	61.2	55	17	45.1	18
5. Central West	10	60.6	53	**	115	143	8	77.6	65	7	29.1	26	**	31.5	20.5
6. Mississauga Halton	27	13.3	5	33	27.8	7	43	22.3	9	33	28.7	20	34	16.8	10
7. Toronto Central	28	54.1	32	25	21.8	3	21	30.8	14	30	28.5	10	33	15.3	9
8. Central	17	54.8	50	33	52	42	22	49	30	31	51.7	38	38	23.2	13.5
9. Central East	16	54.7	42	23	71.5	61	11	26.9	30	17	58.6	48	9	29.4	27
10. South East	16	51.5	42.5	13	28.8	11	14	41.1	23	13	32.8	17	18	26.2	9.5
11. Champlain	22	43.7	25	20	82.4	92.5	20	56.1	26	28	46.9	19.5	15	41	13
12. North Simcoe Muskoka	12	77	78	15	74.3	93	17	70.5	70	28	51.5	27	27	21.8	7
13. North East	17	84	102	22	60.6	43.5	29	46.8	44	26	59.9	30.5	27	38.4	25
14. North West	9	45.1	14	13	69.5	92	17	45.9	25	12	32.9	18.5	13	32.5	18

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All stroke and TIA patients admitted to any acute care hospital who underwent carotid revascularization through carotid endarterectomy or carotid stenting.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Degree of stenosis in patients requiring carotid revascularization is unavailable in administrative databases.

(2) Patient time considered to include carotid endarterectomy only if the procedure was done within 6 months after admission date.

(3) Sub-LHIN planning area data not included, as most carotid endarterectomies and carotid stenting are done at the 11 regional and enhanced district stroke centres.

(4) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

### 3. Inpatient Rehabilitation

#### Inpatient Stroke Rehabilitation by Time to Admission

##### Findings:

- ▶ **Exhibit 3.1:** The average age of stroke patients admitted to inpatient rehabilitation (71 years) did not change dramatically from 2003/04 to 2007/08. Almost half (48%) of the inpatient rehabilitation population was 75 years of age or older; this remained unchanged from 2003/04.
- ▶ **Exhibit 3.2.1:** There was an almost 10% relative increase in the proportion of stroke/TIA patients discharged from acute hospitals to inpatient rehabilitation: from 21% in 2003/04 to 23% in 2007/08. The median time from stroke onset to admission to rehabilitation was 12 days.
- ▶ **Exhibit 3.2.2:** The number and percentage of Rehabilitation Client Group 1 classified as “unknown” showed a statistically significant increase from 10.4% in 2003/04 to 14.6% in 2007/08; this included 424 patients in 2007/08.

##### Conclusions and recommendations:

A median of 12 days from stroke/TIA onset to inpatient rehabilitation admission suggests that there were four days between the median acute length of stay (seven days) and when the patient was admitted to inpatient rehabilitation. This may or may not be satisfactory depending on the severity of the stroke. This warrants examination by stroke severity in the next provincial audit.

The “unknown” category of Rehabilitation Client Group (RCG) represents a large and increasing number of patients admitted to rehabilitation and is an area of focus for data quality improvement.

The Stroke Evaluation Advisory Committee will table this issue with the OSS Rehabilitation and Community Engagement Subcommittee with the recommendation that it be brought to the CIHI committee that addresses data capture issues.

---

#### Stroke Inpatient Rehabilitation by Rehabilitation Patient Group

##### Findings:

- ▶ **Exhibit 3.3:** Provincially, the mild RPG group constituted 22% of rehabilitation admissions in 2007/08, up from 21% in 2006/07.

##### Conclusions and recommendations:

With system improvements, some of the stroke patients in the mild RPG group could potentially receive therapy in community settings. This indicator should be considered when monitoring rehabilitation service availability in the community.

---

## Profile of Stroke Rehabilitation Inpatients By Facility Type

### Findings:

- ▶ **Exhibit 3.4:** Provincially, there was little change in the profile of stroke rehabilitation inpatients. The median number of days from stroke onset to admission was five days less for general rehabilitation than for specialized rehabilitation. The median total admission FIM<sup>®</sup> score at specialized facilities increased by three points to 81 in 2007/08. The median total discharge FIM<sup>®</sup> score at specialized facilities in 2007/08 was 109, three points higher than at general rehabilitation facilities. The median length of stay in 2007/08 was significantly longer in specialized rehabilitation facilities compared to general rehabilitation facilities: 38 days vs. 26 days.
- ▶ Provincially, fewer stroke patients were discharged to long-term care following inpatient rehabilitation in 2007/08 compared to 2006/07 (11.7% and 8.6%, respectively). This trend occurred in both general and specialized rehabilitation facilities. General rehabilitation facilities had fewer patients discharged to long-term care compared to specialized rehabilitation: 8.1% and 9.6%, respectively. Stroke patients discharged from general rehabilitation facilities were more likely to go home with services than similar patients discharged from specialized rehabilitation facilities: 49.9% vs. 31.3%.

### Conclusions and recommendations:

Higher median admission FIM<sup>®</sup> scores at specialized inpatient rehabilitation facilities may be due to admitting patients later in their care. Specialized inpatient rehabilitation facilities have longer length of stay despite higher admission FIM<sup>®</sup> scores. Positive trends are evident for both types of facilities in terms of discharges to the community and long-term care.

Differences in staffing levels and intensity of therapy relative to stroke severity (RPGs) should be reviewed to better understand differences in length of stay and changes in independence scores at specialized and general rehabilitation facilities.

## FIM<sup>®</sup> Score, Length of Stay and Discharge Status among Stroke Rehabilitation Inpatients

### Findings:

- ▶ **Exhibit 3.5.1:** The median length of stay decreased by four days, and the total discharge FIM<sup>®</sup> score remained the same between 2003/04 and 2007/08. Patients displayed the same functional improvements in less time (a median length of stay of 33 days in 2003/04 vs. 29 days in 2007/08).
- ▶ Despite the average functional status on discharge remaining unchanged from 2003/04 to 2007/08, there was a 2.5% relative increase in the number of stroke patients discharged to the community following inpatient rehabilitation (80% in 2003/04 vs. 82% in 2007/08) and an associated 31% relative decrease in the number of stroke patients discharged to long-term care (13% in 2003/04 vs. 9% in 2007/08).

### Conclusions and recommendations:

There were positive trends in length of stay, discharge to the community and long-term care.

A high provincial admission FIM<sup>®</sup> score (median 78, average 76) suggests that a notable proportion of patients with more severe disability in the target group (i.e., an admission FIM<sup>®</sup> score for inpatient stroke rehabilitation of 40–80) were not getting access.<sup>5</sup> This may reflect a lack of community/outpatient services requiring admission of persons with milder levels of disability and/or pressures on rehabilitation centres to reduce length of stay (as reflected in the reduction in length of stay by four days) and/or referring sites' familiarity with best practices for rehabilitation. This requires further investigation and validation.

Outpatient facilities should be surveyed to identify available therapy.

CIHI's NACRS database needs to be expanded to capture ambulatory rehabilitation delivered at both acute and rehabilitation inpatient facilities.

<sup>5</sup> Patients who suffer moderately severe stroke are conscious acutely but have a clinically significant hemiplegia/hemiparesis with an early FIM<sup>®</sup> score of 40–80. More specifically, a motor FIM<sup>®</sup> score between 38–62 frequently demonstrates marked improvement in all areas. Although these patients are often partially dependent in most areas by discharge, over 85% are discharged to the community (Stineman et al). It is these patients who appear to improve the most with rehabilitation.

## **FIM<sup>®</sup> Score, Length of Stay and Discharge Status of Stroke Inpatient Rehabilitation by Time from Acute Care Discharge to Rehabilitation Admission**

### **Findings:**

- ▶ **Exhibit 3.5.2:** Over 85% of stroke patients were admitted to inpatient rehabilitation within three days following discharge from an acute stroke hospitalization. Stroke patients admitted early (0–3 days following the acute inpatient discharge) had a similar percentage change in FIM<sup>®</sup> score from admission to discharge, but the change was achieved in a shorter length of stay compared to those that had a delayed admission. In 2007/08, median admission FIM<sup>®</sup> scores were 79, 73 and 74 for early, delayed and late admission to rehabilitation, respectively, compared to 77, 77 and 64, respectively, in 2003/04. The recommended total admission FIM<sup>®</sup> score is 40–80 for inpatient rehabilitation.<sup>6</sup> In 2007/08, FIM<sup>®</sup> efficiency was greatest among stroke/TIA patients admitted within 0–3 days from discharge from an acute stroke/TIA hospitalization.

### **Conclusions and recommendations:**

The data supports the view that earlier admission into rehabilitation improves patient outcomes and system performance. Functional improvement is greater and results in a shorter length of stay when admission to rehabilitation is earlier. There is a trend toward more people with mild disability being admitted and fewer patients with more severe strokes accessing inpatient rehabilitation. The OSN will continue to monitor inpatient rehabilitation admission FIM<sup>®</sup> scores.

This trend supports the AlphaFIM<sup>®</sup> project currently underway in the acute care hospitals, which will provide more comprehensive information on patients not receiving inpatient rehabilitation as well as on those that are (i.e., what is reported in the NRS). This may be a reflection of patients with less disability being admitted to inpatient rehabilitation due to a lack of community/outpatient services or it may be attributed to pressures on rehabilitation centres to reduce length of stay (see exhibit 3.5.1). This requires further investigation and validation.

Rehabilitation programs need to identify and reduce barriers to admission for severe stroke patients, as evidence indicates they stand to benefit from rehabilitation. Without access to rehabilitation services, these patients will continue to be a major source of acute care ALC days.

---

## **FIM<sup>®</sup> Efficiency by Rehabilitation Patient Group and Inpatient Rehabilitation Facility Type**

### **Findings:**

- ▶ **Exhibits 3.5.3 and 3.5.4:** FIM<sup>®</sup> efficiency appeared to be better in general rehabilitation facilities than in specialized rehabilitation facilities. For moderately disabled stroke patients admitted to general rehabilitation facilities, FIM<sup>®</sup> efficiencies were 1.0–1.1 compared to 0.6 for patients in specialized rehabilitation facilities.

### **Conclusions and recommendations:**

The evidence indicates improved outcomes when rehabilitation begins earlier. The National Rehabilitation Reporting System defines specialized rehabilitation as that provided in a freestanding rehabilitation facility, whereas general rehabilitation is provided within an acute care facility. The reason for the differences between specialized and generalized is unclear but may be due to structural issues, such as the ability to admit stroke patients earlier in general rehabilitation facilities. Further investigation is required.

---

<sup>6</sup> Stineman MG, Granger CV. Outcome, efficiency and time-trend pattern analyses for stroke *Am J Phys Med Rehabil.* 1998; 77(3):193–201.

## Inpatient Stroke Rehabilitation Profile by Local Health Integration Network

### Findings:

- ▶ **Exhibit 3.6:** There was wide variation within and across Local Health Integration Networks, with some LHINs experiencing increasing proportions of stroke patients being admitted to inpatient rehabilitation and others showing a decreasing trend. There was wide variation across all performance indicators. From 2003/04, the admission total FIM<sup>®</sup> score increased for half of the LHINs and decreased or remained the same for the rest of the LHINs. The length of stay decreased across most LHINs. There was wide variation in the time from stroke onset to inpatient rehabilitation admission from 12–25 days in 2007/08. No consistency was observed in the functioning of inpatient rehabilitation across the province and regionally.

### Conclusions and recommendations:

The trend to increasing FIM<sup>®</sup> admission score suggests that those who could most benefit from inpatient rehabilitation (i.e., patients with an admission FIM<sup>®</sup> score of 40–80) have decreasing access. The wide variation in system performance is of concern and likely related to inefficient and ineffective processes. There is a need for a systematic way of facilitating equitable access to inpatient stroke rehabilitation. There is much work to be done to improve stroke rehabilitation system performance.

Rehabilitation programs need to identify and reduce barriers to admission for severe stroke patients, as evidence indicates that they stand to benefit from rehabilitation. Without access to rehabilitation services, these patients will continue to be a major source of acute care ALC days.

---

## Inpatient Stroke Rehabilitation Profile by Facility

### Findings:

- ▶ **Exhibits 3.7.1 and 3.7.2:** see Exhibit 3.6.

### Conclusions and recommendations:

The wide variation may be partly due to discrepancies in resources.

There is a need for a systematic way to facilitate equitable access to inpatient rehabilitation.

---



**Exhibit 3.1 Age and sex characteristics of stroke rehabilitation inpatients, in Ontario, 2003/04, 2006/07 and 2007/08**

Stroke Rehabilitation Inpatients <sup>1</sup>	2003/04	2006/07	2007/08
Patients Admitted to Inpatient Rehabilitation, <sup>2</sup> n (%)	2,863 (21)	2,925 (22)	3,010 (23)
Age, mean (median)	71.5 (74)	71.3 (74)	71.1 (74)
Age of Male Patients, mean (median)	69.7 (72)	69.4 (71)	69.4 (71)
Age of Female Patients, mean (median)	73.5 (76)	73.2 (77)	73.2 (76)
<b>Proportion by Age Group (in Years)</b>			
<55	11.0%	12.2%	12.2%
	(M=12%, F=10%)	(M=14%, F=11%)	(M=14%, F=11%)
55–64	15.1%	15.2%	15.8%
	(M=19%, F=11%)	(M=18%, F=13%)	(M=20%, F=11%)
65–74	25.6%	24.2%	24.8%
	(M=28%, F=23%)	(M=29%, F=19%)	(M=27%, F=23%)
75–84	36.4%	34.4%	33.2%
	(M=33%, F=40%)	(M=31%, F=38%)	(M=30%, F=37%)
85+	12.0%	14.0%	14.0%
	(M=8%, F=16%)	(M=9%, F=19%)	(M=10%, F=18%)

Data sources: Canadian Institute for Health Information, National Rehabilitation Reporting System (CIHI-NRS) and Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients with a diagnosis of stroke (using ICD-10 codes) discharged from an acute care hospital who were admitted to inpatient rehabilitation and classified as Rehabilitation Client Groups 1 (Stroke) and 2 (Subarachnoid Hemorrhage only) in the CIHI-NRS database.

Exclusion: Patients included in RCG-2 (Brain Dysfunction).

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

<sup>2</sup> Based on stroke/TIA patients discharged from acute care hospitals in the CIHI-DAD in 2003/04, 2006/07 and 2007/08.

**Exhibit 3.2.1 Inpatient stroke rehabilitation by time to admission, referral source and Rehabilitation Client Group (RCG), in Ontario, 2003/04, 2006/07 and 2007/08**

Profile	2003/04	2006/07	2007/08
Patients <sup>1</sup> Discharged Alive from Acute Care	13,557	13,096	13,206
Patients Admitted to Inpatient Rehabilitation, <sup>2</sup> n (%)	2,863 (21)	2,925 (22)	3,010 (23)
Days from Stroke Onset to Admission to Inpatient Rehabilitation, mean (median) <sup>3</sup>	21 (13)	19 (12)	19 (12)
<b>Referral Source</b>			
Acute inpatient	96.0	96.4	97.1
Long-term care	2.0	1.5	1.1
Another rehabilitation facility	1.0	0.6	0.4
Community	1.0	1.4	1.4
<b>Admission Class</b>			
Initial rehabilitation	94.0	95.5	95.5
Short stay	3.0	2.4	2.6
Other	3.0	2.1	1.9
<b>Rehabilitation Client Group 1 (Stroke)</b>			
Patients <sup>1</sup> Admitted to Inpatient Rehabilitation, <sup>2</sup> n (%)	2,766 (20)	2,851 (22)	2,899 (22)
Days from Stroke Onset to Admission to Inpatient Rehabilitation, mean (median) <sup>3</sup>	21 (13)	19 (12)	19 (12)
<b>Referral Source, %</b>			
Acute inpatient	97.0	96.5	97.1
Long-term care	1.4	1.5	1.2
Another rehabilitation facility	1.0	0.6	0.4
Community	1.0	1.4	1.3
<b>Admission Class, %</b>			
Initial rehabilitation	94.0	95.3	95.5
Short stay	3.0	2.5	2.6
Other	3.0	2.2	1.9
<b>Rehabilitation Client Group 2 (Brain Dysfunction)</b>			
Patients <sup>2</sup> Admitted to Inpatient Rehabilitation, <sup>2</sup> n (%)	97 (0.0)	74 (0.0)	111 (0.8)
Days from Stroke Onset to Admission into Inpatient Rehabilitation, mean (median) <sup>3</sup>	43 (34)	43 (31)	39 (33)
<b>Referral Source, %</b>			
Acute inpatient	95.0	94.0	98.2
Long-term care	2.0	3.0	–
Another rehabilitation facility	1.0	–	–
Community	1.0	3.0	1.8
<b>Admission Class, %</b>			
Initial rehabilitation	99.0	100.0	97.3
Short stay	–	–	1.8
Other	1.0	–	0.9

Data sources: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), and National Rehabilitation Reporting System (CIHI-NRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients with a diagnosis of stroke (using ICD-10 codes) discharged from an acute inpatient facility, admitted to inpatient rehabilitation and classified as Rehabilitation Client Group (RCG) 1 (Stroke) in the CIHI-NRS database; have had rehabilitation assessments completed in the same fiscal year as the acute facility discharge.

Exclusion criteria: Patients in RCG-2 (Brain Dysfunction).

<sup>1</sup> Analysis based on unique patients (i.e., does not include multiple patient-visits).

<sup>2</sup> Based on stroke/TIA patients discharged alive from acute care hospitals included in the CIHI-DAD for 2003/04, 2006/07 and 2007/08.

<sup>3</sup> Days from stroke onset was determined using "onset" data element in the NRS database.

Note: Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 3.2.2 Distribution of stroke rehabilitation inpatients<sup>1,2</sup> in Rehabilitation Client Group (RCG) 1, by Functional Related Group, in Ontario, 2003/04, 2006/07 and 2007/08**

Rehabilitation Client Group 1	2003/04	2006/07	p-value	2007/08	p-value
<b>Functional Related Group</b>	N=2,766	N=2,851		N=2,899	
1	344 (12.4%)	318 (11.2%)	0.14	322 (11.1%)	0.120
2	161 (5.8%)	137 (4.8%)	0.09	119 (4.1%)	0.003
3	257 (9.3%)	218 (7.6%)	0.03	276 (9.5%)	0.768
4	410 (14.8%)	431 (15.1%)	0.76	378 (13.0%)	0.052
5	307 (11.1%)	297 (10.4%)	0.41	276 (9.5%)	0.051
6	247 (8.9%)	298 (10.5%)	0.05	288 (9.9%)	0.196
7	373 (13.5%)	444 (15.6%)	0.03	465 (16.0%)	0.007
8	207 (7.5%)	177 (6.2%)	0.06	179 (6.2%)	0.051
9	172 (6.2%)	144 (5.1%)	0.06	172 (5.9%)	0.653
Unknown	288 (10.4%)	387 (13.6%)	<0.001	424 (14.6%)	<0.001

Data sources: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), and National Rehabilitation Reporting System (CIHI-NRS), 2003/04, 2006/07–2007/08.

Inclusion criteria: All patients with a diagnosis of stroke (using ICD-10 codes) discharged from an acute inpatient facility, admitted to inpatient rehabilitation and classified as Rehabilitation Client Group (RCG) 1 (Stroke) in the CIHI-NRS database; have had rehabilitation assessments completed in the same fiscal year as the acute facility discharge.

Exclusion criteria: Patients in RCG-2 (Brain Dysfunction).

<sup>1</sup> Analysis based on unique patients (i.e., does not include multiple patient-visits).

<sup>2</sup> Based on stroke/TIA patients discharged alive from acute care hospitals included in the CIHI-DAD for 2003/04, 2006/07 and 2007/08.

**Exhibit 3.3.1 Stroke inpatient rehabilitation patient groups (RPGs), by Local Health Integration Network and in Ontario, 2006/07**

Local Health Integration Network		Severe		Moderate			Mild		Total
		RPG 1100	RPG 1110	RPG 1120	RPG 1130	RPG 1140	RPG 1150	RPG 1160	
		n (%)							
1	Erie St. Clair	22 (8.3)	86 (32.5)	57 (21.5)	22 (8.3)	25 (9.4)	35 (13.2)	18 (6.8)	265
2	South West	43 (12.5)	105 (30.6)	52 (15.2)	39 (11.4)	39 (11.4)	41 (12.0)	24 (7)	343
3	Waterloo Wellington	12 (7.7)	26 (16.8)	36 (23.2)	15 (9.7)	20 (12.9)	36 (23.2)	10 (6.5)	155
4	Hamilton Niagara Haldimand Brant	60 (13.3)	92 (20.4)	91 (20.2)	97 (21.6)	40 (8.9)	51 (11.3)	19 (4.2)	450
5	Central West	17 (14.3)	23 (19.3)	33 (27.7)	14 (11.8)	7 (5.9)	16 (13.5)	9 (7.6)	119
6	Mississauga Halton	23 (10.7)	55 (25.5)	51 (23.6)	23 (10.7)	24 (11.1)	31 (14.4)	9 (4.2)	216
7	Toronto Central	26 (7.9)	59 (17.9)	83 (25.2)	64 (19.4)	35 (10.6)	48 (14.6)	15 (4.6)	330
8	Central	33 (9.4)	73 (20.8)	78 (22.2)	34 (9.7)	36 (10.3)	69 (19.7)	28 (8.0)	351
9	Central East	46 (10.8)	111 (26.0)	96 (22.5)	49 (11.5)	35 (8.2)	58 (13.6)	32 (7.5)	427
10	South East	10 (7.4)	26 (19.26)	28 (20.7)	24 (17.8)	13 (9.6)	17 (12.6)	17 (12.6)	135
11	Champlain	30 (8.8)	71 (20.8)	58 (17.0)	57 (16.7)	32 (9.4)	50 (14.7)	43 (12.6)	341
12	North Simcoe Muskoka	13 (11.7)	27 (24.3)	25 (22.5)	14 (12.6)	14 (12.6)	14 (12.6)	**	111
13	North East	28 (13.4)	50 (23.9)	31 (14.8)	36 (17.2)	25 (12.0)	23 (11.0)	16 (7.7)	209
14	North West	13 (16.7)	23 (29.5)	12 (15.4)	12 (15.4)	**	8 (10.3)	**	78
<b>Ontario<sup>1, 2</sup></b>		<b>378 (10.7)</b>	<b>829 (23.4)</b>	<b>733 (20.7)</b>	<b>501 (14.1)</b>	<b>350 (9.9)</b>	<b>503 (14.2)</b>	<b>249 (7.0)</b>	<b>3,530</b>

**Exhibit 3.3.2 Stroke inpatient rehabilitation patient groups (RPGs), by Local Health Integration Network and in Ontario, 2007/08**

Local Health Integration Network		Severe		Moderate			Mild		Total
		RPG 1100	RPG 1110	RPG 1120	RPG 1130	RPG 1140	RPG 1150	RPG 1160	
		n (%)							
1	Erie St. Clair	20 (8.1)	79 (32.0)	55 (22.3)	30 (12.2)	17 (6.9)	33 (13.4)	13 (5.3)	247
2	South West	39 (11.9)	87 (26.6)	47 (14.4)	35 (10.7)	52 (15.9)	30 (9.2)	37 (11.3)	327
3	Waterloo Wellington	15 (10.6)	17 (12.1)	26 (18.4)	18 (12.8)	11 (7.8)	35 (24.8)	19 (13.5)	141
4	Hamilton Niagara Haldimand Brant	48 (11.9)	87 (21.6)	101 (25.1)	71 (17.6)	38 (9.4)	35 (8.7)	23 (5.7)	403
5	Central West	15 (11.5)	34 (26.2)	28 (21.5)	16 (12.3)	7 (5.4)	27 (20.8)	3 (2.3)	130
6	Mississauga Halton	20 (9.4)	58 (27.1)	53 (24.8)	27 (12.6)	21 (9.8)	28 (13.1)	7 (3.3)	214
7	Toronto Central	23 (9.1)	37 (14.6)	56 (22.1)	54 (21.3)	26 (10.3)	43 (17.0)	14 (5.5)	253
8	Central	25 (8.1)	66 (21.3)	67 (21.6)	44 (14.2)	28 (9.0)	57 (18.4)	23 (7.4)	310
9	Central East	37 (10.1)	98 (26.8)	75 (20.5)	47 (12.8)	23 (6.3)	59 (16.1)	27 (7.4)	366
10	South East	8 (6.7)	27 (22.5)	21 (17.5)	27 (22.5)	10 (8.3)	15 (12.5)	12 (10.0)	120
11	Champlain	23 (8.0)	51 (17.8)	44 (15.3)	39 (13.6)	37 (12.9)	42 (14.6)	51 (17.8)	287
12	North Simcoe Muskoka	8 (6.4)	41 (32.5)	23 (18.3)	26 (20.6)	12 (9.5)	13 (10.3)	3 (2.4)	126
13	North East	11 (7.7)	39 (27.3)	21 (14.7)	28 (19.6)	20 (14.0)	15 (10.5)	9 (6.3)	143
14	North West	12 (15.0)	20 (25.0)	6 (7.5)	11 (13.8)	6 (7.5)	10 (12.5)	15 (18.8)	80
<b>Ontario<sup>1, 2</sup></b>		<b>306 (9.7)</b>	<b>743 (23.5)</b>	<b>628 (19.8)</b>	<b>476 (15.0)</b>	<b>310 (9.8)</b>	<b>446 (14.1)</b>	<b>257 (8.1)</b>	<b>3,147</b>

Data source: Canadian Institute for Health Information, National Rehabilitation Reporting System (CIHI-NRS), 2006/07–2007/08.

Inclusion criteria: All patients admitted to inpatient rehabilitation and classified as Rehabilitation Client Group (RCG) 1 (Stroke) in the CIHI-NRS database.

Exclusion criteria: Patients discharged from one facility and admitted to another one within 24 hours (N=121 in 2006/07, N=93 in 2007/08).

<sup>1</sup> Totals do not add up due to missing LHINs.

<sup>2</sup> Analysis based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

**Exhibit 3.4 Inpatient stroke rehabilitation profiles, by facility type, in Ontario, 2006/07 and 2007/08**

	2006/07	2007/08	2006/07		2007/08	
	Ontario	Ontario	Specialty <sup>1</sup>	General <sup>1</sup>	Specialty <sup>1</sup>	General <sup>1</sup>
Facilities, n	66	63	12	54	12	51
Patients <sup>2</sup> , n	3,543	3,166	1,186	2,357	1,010	2,156
Female, n (%)	1,711 (48.3)	1,467 (46.3)	534 (45.0)	1,177 (49.9)	434 (43.0)	1,033 (47.9)
<b>Age Group, n (%)</b>						
≤18	**	**	**	**	-	**
19-55	443 (12.5)	413 (13.0)	188 (15.9)	255 (10.8)	179 (17.7)	234 (10.9)
56-65	565 (15.9)	505 (16.0)	202 (17.0)	363 (15.4)	174 (17.2)	331 (15.4)
66-75	865 (24.4)	785 (24.8)	301 (25.4)	564 (23.9)	264 (26.1)	521 (24.2)
76-85	1,208 (34.1)	1,073 (33.9)	367 (30.9)	841 (35.7)	303 (30.0)	770 (35.7)
>85	459 (13.0)	387 (12.2)	127 (10.7)	332 (14.1)	90 (8.9)	297 (13.8)
<b>Days from Onset to Admission</b>						
Mean ± Standard Deviation	25.64 ± 80.83	27.55 ± 141.94	31.15 ± 65.26	22.87 ± 87.51	39.12 ± 191.19	22.14 ± 111.28
Median (Interquartile Range)	13 (8-23)	13 (8-22)	17 (11-30)	11 (6-19)	16 (10-29)	11 (7-19)
<b>Days from Ready for Admission to Admission</b>						
Mean ± Standard Deviation	2.58 ± 4.84	2.78 ± 5.53	3.65 ± 5.68	1.94 ± 4.12	3.87 ± 6.64	2.21 ± 4.75
Median (Interquartile Range)	1 (0-3)	1 (0-3)	1 (1-4)	0 (0-2)	2 (1-4)	0 (0-2)
<b>Disability, n (%)</b>						
Mild <sup>3</sup>	752 (21.2)	703 (22.2)	220 (18.5)	532 (22.6)	206 (20.4)	497 (23.1)
Moderate <sup>4</sup>	1,584 (44.7)	1,414 (44.7)	571 (48.1)	1,013 (43.0)	527 (52.2)	887 (41.1)
Severe <sup>5</sup>	1,207 (34.1)	1,049 (33.1)	395 (33.3)	812 (34.5)	277 (27.4)	772 (35.8)
<b>Length of Stay (Days)</b>						
Mean ± Standard Deviation	38.50 ± 27.93	35.62 ± 25.87	45.27 ± 29.09	35.09 ± 26.69	43.23 ± 26.58	32.06 ± 24.75
Median (Interquartile Range)	33 (19-50)	30 (17-48)	40 (27-57)	28 (15-47)	38 (25-55)	26 (14-43)
<b>Total Patient Days Past Trim Point</b>						
Mean ± Standard Deviation	27.65 ± 37.63	19.86 ± 18.87	34.54 ± 43.68	22.05 ± 31.30	21.76 ± 20.51	18.04 ± 17.36
Median (Interquartile Range)	13 (4-35)	15 (5-27)	15 (5-53)	10 (2-31)	15 (8-28)	14 (5-24)
<b>Admission Total FIM<sup>®</sup> score</b>						
Mean ± Standard Deviation	75.13 ± 23.91	75.87 ± 24.20	75.82 ± 24.40	74.79 ± 23.65	78.99 ± 24.63	74.42 ± 23.86
Median (Interquartile Range)	77 (58-93)	77 (58-94)	78 (58-95)	77 (58-93)	81 (61-99)	76 (57-92)
<b>Discharge Total FIM<sup>®</sup> score</b>						
Mean ± Standard Deviation	98.40 ± 23.14	98.96 ± 23.33	98.86 ± 22.80	98.15 ± 23.31	100.56 ± 22.77	98.19 ± 23.57
Median (Interquartile Range)	106 (88-115)	107 (89-116)	107 (88-115)	106 (88-115)	109 (91-117)	106 (88-115)
<b>FIM<sup>®</sup> Efficiency<sup>6</sup></b>						
Mean ± Standard Deviation	0.79 ± 0.63	0.84 ± 0.96	0.56 ± 0.49	0.93 ± 1.04	0.56 ± 0.42	0.99 ± 1.10
<b>Rehabilitation Discharge Destination, n (%)</b>						
Home without services	797 (22.5)	843 (26.6)	439 (37.0)	358 (15.2)	457 (45.2)	386 (17.9)
Home with services	1,615 (45.6)	1,391 (43.9)	423 (35.7)	1,192 (50.6)	316 (31.3)	1,075 (49.9)
Other community services	218 (6.2)	182 (5.7)	65 (5.5)	153 (6.5)	49 (4.9)	133 (6.2)
Long-term care facility	416 (11.7)	271 (8.6)	149 (12.6)	267 (11.3)	97 (9.6)	174 (8.1)
Acute care facility	247 (7.0)	248 (7.8)	64 (5.4)	183 (7.8)	58 (5.7)	190 (8.8)
Died	9 (0.3)	9 (0.3)	**	6 (0.3)	**	6 (0.3)
Missing/unavailable/unknown	241 (6.8)	222 (7.0)	43 (3.6)	198 (8.4)	30 (3.0)	192 (8.9)
<b>30-day Readmission to Inpatient Rehabilitation, n (%)</b>	29 (0.8)	19 (0.6)	6 (0.5)	23 (1.0)	**	16 (0.7)

Data source: Canadian Institute for Health Information, National Rehabilitation Reporting System (CIHI-NRS), 2006/07–2007/08.

Inclusion criteria: All patients admitted to inpatient rehabilitation and classified as Rehabilitation Client Group (RCG) 1 (Stroke) in the CIHI-NRS database.

Exclusion criteria: Patients discharged from one facility and admitted to another within 24 hours (N=121 in 2006/07, N=93 in 2007/08).

<sup>1</sup> Facility type as defined in the CIHI-NRS database.

<sup>2</sup> Based on unique patients (i.e., does not include multiple patient-visits).

<sup>3</sup> Mild disability includes RPGs 1150 and 1160.

<sup>4</sup> Moderate disability includes RPGs 1120, 1130 and 1140.

<sup>5</sup> Severe disability includes RPGs 1100 and 1110.

<sup>6</sup> FIM<sup>®</sup> efficiency is the change in total FIM<sup>®</sup> score divided by total length of stay; it provides information on the average amount of functional recovery per day of inpatient rehabilitation.

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Note: Cells in which there was no reported/available data are marked with a hyphen (-).

FIM<sup>®</sup> = Functional Independence Measure

IQR = Interquartile Range (25<sup>th</sup> percentile - 75<sup>th</sup> percentile)

**Exhibit 3.5.1 Functional Independence Measure (FIM®) score, length of stay, and discharge status among stroke patients admitted to inpatient rehabilitation, in Ontario, 2003/04, 2006/07 and 2007/08**

Profile	2003/04	2006/07	2007/08
Patients <sup>1</sup> Admitted to Inpatient Rehabilitation, n (%)	2,863 (21)	2,925 (22)	3,010 (23)
<b>Admission FIM® Score, mean (median)</b>			
Total motor FIM® score	50 (51)	50 (51)	50 (52)
Total cognitive FIM® score	25 (27)	26 (27)	26 (27)
Total FIM® score	75 (77)	76 (78)	76 (78)
<b>Discharge FIM® Score, mean (median)</b>			
Total motor FIM® score	70 (78)	72 (78)	72 (78)
Total cognitive FIM® score	28 (30)	28 (30)	29 (30)
Total FIM® score	99 (108)	100 (108)	100 (108)
<b>Change in FIM® Score from Admission to Discharge, mean (median)</b>			
Total motor FIM® score	20 (19)	20 (19)	20 (18)
Total cognitive FIM® score	3 (1)	2 (2)	3 (2)
Total FIM® score	22 (21)	22 (21)	22 (21)
Improvement in functional status based on total FIM® score from admission to discharge, %	32	32	32
Total length of stay in days in inpatient rehabilitation, mean (median)	38.7 (34)	35.8 (30)	35.2 (29)
Active length of stay <sup>2</sup> in days in inpatient rehabilitation, mean (median)	38.5 (33)	35.0 (30)	34.5 (29)
FIM® efficiency <sup>3</sup> in inpatient rehabilitation, mean (median)	0.8 (0.6)	0.8 (0.7)	0.9 (0.7)
<b>Reason for Discharge from Inpatient Rehabilitation, %</b>			
Goals met – discharged to the community	75	78	80
Goals met – discharged to another institution	13	11	10
Discharged – goals not met	10	9	9
Deceased	1	<1	<1
<b>Discharge Destination Following Inpatient Rehabilitation, %</b>			
Home without services	30	28	31
Home with services	44	46	45
Other community services	6	7	6
Long-term care facility	13	11	9
Acute care facility	6	6	6
Died	1	1	1
Unavailable/unknown	2	2	3

Data source: Canadian Institute for Health Information, National Rehabilitation Reporting System (CIHI-NRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients with a diagnosis of stroke (using ICD-10 codes) discharged from an acute hospital who were admitted to inpatient rehabilitation and classified as Rehabilitation Client Group (RCG) 1 (Stroke) and 2 (Subarachnoid Hemorrhage only) in the NRS database.

Exclusion: Patients included in RCG-2 (Brain Dysfunction).

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

<sup>2</sup> Active length of stay excludes days waiting for discharge from inpatient rehabilitation and service disruptions (e.g., short admissions back into acute care).

<sup>3</sup> FIM® efficiency is the change in total FIM® score divided by total length of stay; it provides information on the average amount of functional recovery per day of inpatient rehabilitation.

**Exhibit 3.5.2 Functional Independence Measure (FIM®) score, length of stay, and discharge status of stroke inpatient rehabilitation patients<sup>1</sup>, by time from acute care discharge to inpatient rehabilitation admission, in Ontario, 2003/04, 2006/07 and 2007/08**

Time to Inpatient Rehabilitation <sup>2</sup>		2003/04			2006/07			2007/08		
		Early	Delayed	Late	Early	Delayed	Late	Early	Delayed	Late
		(0–3 Days)	(4–30 Days)	(>30 Days)	(0–3 Days)	(4–30 Days)	(>30 Days)	(0–3 Days)	(4–30 Days)	(>30 Days)
Admission to Inpatient Rehabilitation, <sup>3</sup> n (%)		2,454 (87)	241 (9)	115 (4)	2,518 (86)	270 (9)	137 (5)	2,596 (86)	300 (10)	114 (4)
Days from Stroke Onset to Inpatient Rehabilitation Admission, <sup>4</sup> mean (median)		19 (7)	27 (22)	62 (56)	16 (11)	25 (21)	63 (53)	17 (11)	26 (19)	51 (48)
Functional Independence Measure <sup>®</sup> Score, mean (median)	Admission FIM <sup>®</sup> score	76 (77)	77 (77)	66 (64)	76 (79)	75 (79)	71 (71)	77 (79)	74 (73)	73 (74)
	Discharge FIM <sup>®</sup> score	99 (108)	101 (110)	86 (97)	101 (109)	99 (108)	88 (94)	101 (109)	100 (107)	93 (100)
	Change in FIM <sup>®</sup> score	22 (21)	24 (24)	19 (17)	22 (21)	22 (20)	17 (17)	22 (21)	24 (23)	20 (19)
	FIM <sup>®</sup> efficiency <sup>5</sup>	0.80 (0.62)	0.68 (0.48)	0.47 (0.35)	0.88 (0.70)	0.71 (0.58)	0.53 (0.40)	0.91 (0.69)	0.77 (0.64)	0.55 (0.46)
	Relative change (%)	30	31	30	33	32	24	31	35	27
Discharge Destination Following Inpatient Rehabilitation, %	Home without services	30	32	14	28	31	19	31	29	25
	Home with services	43	45	52	47	43	41	45	44	41
	Other community services	6	5	1	7	6	5	6	4	6
	Long-term care facility	13	9	18	11	7	23	8	11	11
	Acute care facility	5	6	7	6	9	8	6	7	7
Average Length of Stay in Days, mean (median)		38 (33)	46 (36)	48 (43)	35 (29)	40 (34)	44 (38)	34 (28)	40 (33)	47 (41)

Data sources: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), and National Rehabilitation Reporting System (CIHI-NRS), 2003/04, 2006/07–2007/08.

Inclusion criteria: All patients with a diagnosis of stroke (using ICD-10 codes) discharged from an acute care facility who were admitted to inpatient rehabilitation and classified as Rehabilitation Client Group (RCG) 1 (Stroke) in the CIHI-NRS database; had rehabilitation assessments completed in the same fiscal year as the acute care facility discharge.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

<sup>2</sup> Early, delayed and late group assignment based on the number of days from acute care discharge until first admission to inpatient rehabilitation.

<sup>3</sup> Based on stroke/TIA patients discharged alive from acute care hospitals in the CIHI-DAD in 2003/04, 2006/07 and 2007/08.

<sup>4</sup> Days from stroke onset was determined using the "onset" data element in the CIHI-NRS.

<sup>5</sup> FIM<sup>®</sup> efficiency is the change in total FIM<sup>®</sup> score divided by total length of stay; it provides information on the average amount of functional recovery per day of inpatient rehabilitation.

**Exhibit 3.5.3 Functional Independence Measure (FIM®) efficiency<sup>1</sup> by Rehabilitation Patient Group (RPG) and type of inpatient rehabilitation facility, in Ontario, 2006/07 and 2007/08**

Rehabilitation Patient Group	2006/07			2007/08			2006/07						2007/08					
	Ontario (N=3,543)			Ontario (N=3,166)			Specialty <sup>2</sup> (n=1,186)			General <sup>2</sup> (n=2,357)			Specialty <sup>2</sup> (n = 1,010)			General <sup>2</sup> (n = 2,156)		
	N	Mean (Median)	IQR	N	Mean (Median)	IQR	N	Mean (Median)	IQR	N	Mean (Median)	IQR	N	Mean (Median)	IQR	N	Mean (Median)	IQR
1100	378	0.7 (0.6)	0.3-0.9	306	0.6 (0.6)	0.3-0.9	144	0.5 (0.5)	0.3-0.8	234	0.7 (0.6)	0.3-1.0	97	0.5 (0.5)	0.2-0.7	209	0.7 (0.6)	0.4-1.0
1110	829	0.6 (0.5)	0.2-0.8	743	0.6 (0.5)	0.2-0.9	251	0.5 (0.4)	0.2-0.7	578	0.6 (0.5)	0.2-0.9	180	0.5 (0.4)	0.2-0.6	563	0.7 (0.5)	0.2-1.0
Severe Disability <sup>3</sup>	1,207	0.6 (0.5)	0.2-0.8	1,049	0.6 (0.5)	0.2-0.9	395	0.5 (0.5)	0.2-0.7	812	0.6 (0.5)	0.2-0.9	277	0.5 (0.4)	0.2-0.7	772	0.7 (0.6)	0.2-1.0
1120	733	1.0 (0.8)	0.5-1.2	628	1.0 (0.8)	0.5-1.3	225	0.7 (0.7)	0.4-0.9	508	1.1 (0.9)	0.5-1.3	199	0.7 (0.7)	0.4-1.0	429	1.2 (0.9)	0.6-1.5
1130	501	0.7 (0.6)	0.3-0.9	476	0.8 (0.6)	0.3-1.1	204	0.5 (0.5)	0.3-0.7	297	0.8 (0.7)	0.4-1.1	198	0.5 (0.5)	0.3-0.7	278	1.1 (0.8)	0.5-1.5
1140	350	0.8 (0.6)	0.3-1.0	310	0.9 (0.6)	0.4-1.0	142	0.6 (0.6)	0.3-0.8	208	0.9 (0.7)	0.4-1.1	130	0.5 (0.5)	0.3-0.7	180	1.1 (0.9)	0.4-1.5
Moderate Disability <sup>4</sup>	1,584	0.9 (0.7)	0.4-1.1	1,414	0.9 (0.7)	0.4-1.2	571	0.6 (0.6)	0.3-0.8	1,013	1.0 (0.8)	0.5-1.3	527	0.6 (0.6)	0.3-0.8	887	1.1 (0.9)	0.5-1.5
1150	503	1.1 (0.9)	0.5-1.5	446	1.2 (0.9)	0.6-1.4	127	0.7 (0.6)	0.5-0.9	376	1.3 (1)	0.6-1.7	118	0.7 (0.7)	0.4-0.9	328	1.3 (1.0)	0.7-1.7
1160	249	0.6 (0.5)	0.2-0.8	257	0.6 (0.4)	0.2-0.9	93	0.4 (0.4)	0.2-0.6	156	0.7 (0.5)	0.2-1.0	88	0.4 (0.3)	0.1-0.5	169	0.7 (0.6)	0.2-1.0
Mild Disability <sup>5</sup>	752	1.0 (0.7)	0.4-1.2	703	1.0 (0.7)	0.4-1.2	220	0.6 (0.5)	0.3-0.8	532	1.1 (0.8)	0.4-1.5	206	0.6 (0.5)	0.3-0.8	497	1.1 (0.9)	0.5-1.4

**Exhibit 3.5.4 Length of stay in inpatient rehabilitation facilities, by Rehabilitation Patient Group (RPG), in Ontario, 2006/07 and 2007/08**

Rehabilitation Patient Group	2006/07			2007/08			2006/07						2007/08					
	Ontario			Ontario			Specialty <sup>2</sup>			General <sup>2</sup>			Specialty <sup>2</sup>			General <sup>2</sup>		
	N	Mean (Median)	IQR	N	Mean (Median)	IQR	N	Mean (Median)	IQR	N	Mean (Median)	IQR	N	Mean (Median)	IQR	N	Mean (Median)	IQR
1100	378	62.4 (56)	41-79	306	58.5 (55.5)	36-81	144	68.1 (60)	44-82	234	58.8 (53)	36-78	97	71.6 (70)	44-93	209	52.4 (50)	30-71
1110	829	50.8 (47)	28-66	743	46.4 (42)	24-62	251	57.3 (53)	36-74	578	48.0 (43)	26-64	180	58.5 (53)	37.5-74	563	42.5 (38)	21-56
Severe Disability <sup>3</sup>	1,207	54.4 (50)	32-71	1,049	49.9 (45)	27-66	395	61.3 (56)	39-76	812	51.1 (46)	28-69	277	63.1 (58)	41-83	772	45.2 (41)	23-60
1120	733	38.6 (35)	23-48	628	37.6 (35)	21-49	225	47.0 (42)	33-57	508	34.9 (32)	20-45	199	46.0 (42)	35-55	429	33.7 (28)	17-44
1130	501	33.0 (30)	19-42	476	29.7 (28)	16-38.5	204	40.4 (38)	29-48	297	27.9 (23)	16-38	198	37.7 (35.5)	27-44	278	24.1 (22)	13-31
1140	350	27.8 (25)	15-36	310	26.0 (23)	14-35	142	33.1 (29)	21-42	208	24.1(20)	12-32	130	30.9 (28)	21-37	180	22.5 (20)	12-30
Moderate Disability <sup>4</sup>	1,584	34.4 (32)	20-43	1,414	32.4 (29)	18-42	571	41.2 (37)	28-50	1,013	30.6 (27)	16-41	527	39.1 (37)	27-48	887	28.4 (24)	14-37
1150	503	23.5 (21)	12-31	446	23.3 (20)	12-31	127	31.2 (28)	21-41	376	20.9 (17)	10-28	118	31.3 (28)	21-41	328	20.4 (17)	9-29
1160	249	17.3 (14)	10-21	257	16.3 (14)	9-21	93	21.5 (18)	13-27	532	14.8 (13)	8-17	88	21.2 (20)	13-29	169	13.7 (12)	8-18
Mild Disability <sup>5</sup>	752	21.4 (17)	10-28	703	20.7 (18)	10-28	220	27.1 (24)	16-35	156	19.1 (15)	9-25	206	27.0 (24)	17-35	497	18.1 (15)	9-24

Data source: Canadian Institute for Health Information, National Rehabilitation Reporting System (CIHI-NRS), 2006/07–2007/08.

Inclusion criteria: All patients admitted to inpatient rehabilitation and classified as RCG-1 (Stroke) in the CIHI-NRS database.

Exclusion criteria: Patients discharged from one facility and admitted to another within 24 hours (N=121 in 2006/07, N=93 in 2007/08).

<sup>1</sup> FIM® efficiency is the change in total FIM® score divided by total length of stay; it provides information on the average amount of functional recovery per day of inpatient rehabilitation.

<sup>2</sup> Facility type as defined in the CIHI-NRS database.

<sup>3</sup> Severe disability includes RPGs 1100 and 1110.

<sup>4</sup> Moderate disability includes RPGs 1120, 1130 and 1140.

<sup>5</sup> Mild disability includes RPGs 1150 and 1160.

Note: Facility-based analysis (i.e., the location of the facility is used to report regional performance).

IQR = Interquartile Range (25<sup>th</sup> percentile - 75<sup>th</sup> percentile).



Exhibit 3.6 Inpatient<sup>1</sup> stroke rehabilitation profiles, by Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08

Outcomes for 2003/04		Erie St.Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
<b>Patients Discharged Alive from Acute Care in 2003/04<sup>2</sup>, N=13,775</b>		<b>968</b>	<b>1,220</b>	<b>603</b>	<b>1,797</b>	<b>491</b>	<b>906</b>	<b>1,488</b>	<b>1,080</b>	<b>1,382</b>	<b>629</b>	<b>1,090</b>	<b>630</b>	<b>935</b>	<b>338</b>
Admission to Inpatient Rehabilitation, n (%)		241 (25)	260 (21)	105 (17)	379 (21)	**	306 (34)	479 (32)	133 (12)	222 (16)	129 (21)	271 (25)	116 (18)	102 (11)	16 (5)
Days from Stroke Onset to Inpatient Rehabilitation Admission, mean (median)		14 (8)	27 (14)	29 (14)	23 (13)	-	12 (8)	24 (16)	17 (11)	12 (9)	32 (16)	28 (19)	12 (8)	22 (16)	41 (33)
Functional Independence Measure <sup>®</sup> Score, mean (median)	Admission FIM <sup>®</sup> score	72 (77)	75 (77)	84 (85)	74 (75)	-	73 (75)	78 (79)	83 (85)	74 (76)	75 (73)	74 (74)	69 (68)	75 (75)	71 (73)
	Discharge FIM <sup>®</sup> score	92 (105)	97 (107)	104 (108)	98 (104)	-	98 (107)	103 (109)	104 (110)	102 (112)	98 (106)	98 (109)	91 (108)	96 (106)	96 (111)
	Change in FIM <sup>®</sup> score	19 (17)	21 (17)	21 (20)	23 (23)	-	23 (23)	24 (22)	20 (20)	26 (22)	23 (22)	23 (21)	22 (23)	18 (16)	18 (15)
	FIM <sup>®</sup> efficiency <sup>3</sup>	0.9 (0.7)	0.6 (0.5)	0.9 (0.5)	0.8 (0.7)	-	1.1 (0.9)	0.6 (0.6)	1 (0.9)	0.9 (0.7)	0.5 (0.4)	0.5 (0.4)	1.1 (0.9)	0.6 (0.4)	0.4 (0.3)
	Relative change (%)	28	29	24	32	-	34	32	25	38	31	32	32	32	28
Discharge Destination Following Inpatient Rehabilitation,%	Home without services	18	31	17	34	-	32	41	29	19	23	33	19	28	**
	Home with services	48	40	55	39	-	50	36	53	59	51	39	39	35	**
	Other community services	6	**	10	7	-	**	7	**	**	**	8	6	-	-
	Long-term care facility	17	18	10	14	-	12	13	9	10	16	13	-	15	-
	Acute care hospital	7	**	-	**	-	**	**	-	6	-	7	14	18	**
Average Length of Stay in Days, mean (median)		30 (24)	41 (34)	44 (34)	35 (29)	-	30 (25)	44 (41)	25 (22)	41 (35)	47 (41)	53 (56)	24 (21)	40 (32)	68 (71)

Outcomes for 2006/07		Erie St.Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
<b>Patients Discharged Alive from Acute Care 2006/07<sup>2</sup>, N =13,085</b>		<b>869</b>	<b>1,105</b>	<b>653</b>	<b>1,648</b>	<b>616</b>	<b>783</b>	<b>1,070</b>	<b>1,383</b>	<b>1,452</b>	<b>529</b>	<b>1,082</b>	<b>499</b>	<b>948</b>	<b>448</b>
Admission to Inpatient Rehabilitation, n (%)		198 (23)	273 (25)	119 (18)	400 (24)	61 (10)	204 (26)	537 (50)	135 (10)	287 (20)	87 (16)	276 (26)	88 (18)	182 (20)	73 (16)
Days from Stroke onset to Inpatient Rehabilitation Admission, mean (median)		16 (10)	27 (12)	19 (11)	20 (13)	21 (14)	16 (6)	24 (16)	12 (9)	14 (9)	19 (14)	18 (14)	12 (9)	20 (13)	22 (14)
Functional Independence Measure <sup>®</sup> Score, mean (median)	Admission FIM <sup>®</sup> score	75 (78)	73 (75)	81 (84)	74 (76)	76 (77)	72 (74)	77 (78)	82 (83)	73 (75)	84 (84)	82 (86)	70 (75)	77 (81)	72 (74)
	Discharge FIM <sup>®</sup> score	98 (105)	99 (109)	102 (109)	101 (107)	105 (111)	97 (102)	99 (105)	104 (112)	98 (106)	105 (113)	104 (113)	97 (106)	100 (110)	99 (107)
	Change in FIM <sup>®</sup> score	19 (20)	23 (21)	20 (18)	24 (22)	29 (29)	23 (23)	21 (21)	22 (22)	23 (23)	21 (20)	21 (18)	24 (22)	21 (18)	24 (20)
	FIM <sup>®</sup> efficiency <sup>3</sup>	1.09 (0.66)	0.7 (0.65)	0.8 (0.68)	0.91 (0.79)	0.83 (0.83)	1.3 (1)	0.62 (0.52)	1.13 (0.9)	0.97 (0.76)	0.54 (0.48)	0.72 (0.58)	1.18 (0.91)	0.77 (0.66)	0.66 (0.57)
	Relative change (%)	30	36	26	36	38	35	29	27	34	25	27	39	30	38
Discharge Destination Following Inpatient Rehabilitation,%	Home without services	22	41	19	21	2	10	38	34	14	38	37	35	24	37
	Home with services	45	30	56	51	82	64	36	54	61	49	35	32	44	37
	Other community services	8	8	12	8	2	**	5	**	7	**	10	8	6	9
	Long-term care facility	11	11	**	14	10	16	12	7	15	**	6	9	13	**
	Acute care hospital	**	8	7	**	**	**	**	**	**	6	11	14	13	13
Average Length of Stay in Days, mean (median)		31 (22)	39 (35)	31 (25)	34 (28)	40 (43)	28 (22)	41 (38)	25 (21)	37 (29)	46 (38)	39 (31)	27 (21)	33 (27)	43 (38)

Outcomes for 2007/08		Erie St.Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
<b>Patients Discharged Alive from Acute Care in 2007/08<sup>2</sup>, N=13,183</b>		<b>869</b>	<b>1,080</b>	<b>643</b>	<b>1,705</b>	<b>682</b>	<b>776</b>	<b>1,107</b>	<b>1,389</b>	<b>1,373</b>	<b>603</b>	<b>1,110</b>	<b>546</b>	<b>899</b>	<b>411</b>
Admission to Inpatient Rehabilitation, n (%)		239 (28)	305 (28)	121 (18)	316 (19)	64 (9)	262 (34)	499 (45)	159 (11)	266 (19)	103 (17)	258 (23)	116 (21)	134 (15)	84 (20)
Days from Stroke Onset to Inpatient Rehabilitation Admission, mean (median)		12 (8)	25 (12)	21 (12)	19 (13)	15 (14)	17 (7)	25 (15)	16 (12)	15 (10)	23 (17)	22 (13)	17 (10)	20 (13)	18 (13)
Functional Independence Measure <sup>®</sup> Score, mean (median)	Admission FIM <sup>®</sup> score	73 (73)	76 (77)	81 (84)	73 (74)	76 (78)	71 (74)	81 (84)	78 (80)	71 (73)	83 (87)	83 (89)	69 (72)	76 (80)	73 (79)
	Discharge FIM <sup>®</sup> score	95 (104)	102 (110)	103 (108)	101 (108)	105 (113)	99 (105)	102 (109)	101 (109)	95 (101)	108 (113)	105 (114)	99 (108)	100 (112)	97 (108)
	Change in FIM <sup>®</sup> score	20 (19)	22 (19)	20 (18)	27 (26)	27 (26)	25 (24)	20 (19)	21 (20)	23 (21)	23 (23)	20 (17)	26 (27)	22 (21)	22 (16)
	FIM <sup>®</sup> efficiency <sup>3</sup>	1.11 (0.73)	0.66 (0.63)	1.03 (0.68)	0.92 (0.83)	0.78 (0.72)	1.32 (1.09)	0.57 (0.52)	1.07 (0.8)	1 (0.72)	0.61 (0.5)	0.84 (0.65)	1.38 (1.13)	0.8 (0.59)	0.45 (0.39)
	Relative change (%)	30	34	27	38	38	39	26	29	34	30	27	43	32	33
Discharge Destination Following Inpatient Rehabilitation,%	Home without services	20	45	21	20	22	13	49	28	13	35	47	33	32	35
	Home with services	51	28	50	58	62	65	29	56	60	47	31	31	42	45
	Other community services	8	4	12	5	3	6	4	6	6	7	10	4	5	5
	Long-term care facility	5	13	10	14	10	8	7	4	15	8	5	4	10	2
	Acute care facility	6	8	8	3	3	9	2	6	1	3	7	25	11	14
Average Length of Stay in Days, mean (median)		29 (21)	37 (31)	34 (23)	36 (31)	40 (35)	28 (21)	40 (38)	27 (22)	34 (25)	45 (37)	36 (29)	25 (19)	40 (30)	53 (46)

Data source: Canadian Institute for Health Information, National Rehabilitation Reporting System (CIHI-NRS), 2003/04, 2006/07–2007/08.

Inclusion criteria: All patients admitted to inpatient rehabilitation and classified as RCG-1 (Stroke) and RCG-2 (Subarachnoid Hemorrhage only) in the CIHI-NRS database.

\*\* Cell value suppressed for reasons of privacy and confidentiality.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits). <sup>2</sup> Excluding patients with missing postal codes and therefore unable to assign to a LHIN. <sup>3</sup> FIM<sup>®</sup> efficiency is the change in total FIM<sup>®</sup> score divided by total length of stay; it provides information on the average amount of functional recovery per day of inpatient rehabilitation.

Notes: (1) Patient-based analysis (i.e., the patient's residence is used to report regional performance). (2) Cells in which there was no reported/available data are marked with a hyphen (-).

Exhibit 3.7.1 Inpatient rehabilitation facility stroke patient profiles, in Ontario and by OSS region and National Rehabilitation Reporting System facility number, 2006/07

Site	NRS Facility Number	Admission to Rehabilitation <sup>1</sup> (N)	Days from Stroke Onset to Admission, Mean (Median)	Admission FIM <sup>®</sup> Score, Mean (Median)	Discharge FIM <sup>®</sup> Score, Mean (Median)	Change in FIM <sup>®</sup> Score, Mean (Median)	FIM <sup>®</sup> Efficiency, Mean (Median)	Length of Stay, Mean (Median)	Home without Services	Home with Services	Other Community Services	Long-Term Care Facility	Acute Care Facility	Died	Unavailable/Unknown
<b>Ontario<sup>2</sup></b>		<b>2,925</b>	<b>19.5 (12.0)</b>	<b>76.1 (78.0)</b>	<b>100.1 (108.0)</b>	<b>22.2 (21.0)</b>	<b>0.8 (0.7)</b>	<b>35.8 (30.0)</b>	<b>27.6%</b>	<b>42.0%</b>	<b>6.6%</b>	<b>11.1%</b>	<b>6.1%</b>	<b>0.6%</b>	<b>2.0%</b>
<b>Ontario Stroke System Region</b>															
Central East		413	13.9 (9.0)	72.7 (75.0)	98.2 (108.0)	23.3 (23.0)	1.0 (0.8)	34.2 (27.0)	19.7%	53.2%	6.6%	13.4%	5.2%	1.1%	0.8%
Central South		517	19.6 (12.0)	75.6 (78.0)	101.2 (107.0)	23.0 (22.0)	0.9 (0.8)	32.9 (28.0)	20.8%	52.3%	8.6%	11.1%	4.9%	1.1%	1.1%
East – Champlain		276	18.0 (14.0)	81.5 (86.0)	103.9 (113.0)	21.1 (18.0)	0.7 (0.6)	38.7 (31.0)	37.0%	35.3%	9.8%	6.4%	11.1%	-	0.4%
Northeast		182	20.3 (13.0)	76.6 (81.0)	100.3 (110.0)	20.6 (18.0)	0.8 (0.7)	32.7 (27.0)	23.8%	43.9%	5.5%	13.4%	12.8%	0.6%	-
Northwest		73	21.5 (14.0)	72.0 (74.0)	98.5 (107.0)	24.4 (20.0)	0.7 (0.6)	43.1 (38.0)	37.0%	37.0%	9.3%	3.7%	13.0%	-	-
South East		78	18.8 (14.0)	82.6 (84.0)	103.3 (113.0)	20.5 (19.0)	0.5 (0.5)	45.1 (38.0)	37.2%	47.7%	2.3%	7.0%	5.8%	-	-
Southwest		468	22.3 (11.0)	73.9 (76.0)	98.4 (108.0)	21.8 (21.0)	0.9 (0.7)	36.0 (28.0)	33.2%	36.4%	7.9%	11.1%	7.1%	0.5%	3.9%
Toronto – North & East		155	16.1 (12.0)	80.9 (83.0)	101.2 (108.0)	19.5 (19.0)	0.8 (0.6)	32.1 (30.5)	32.6%	48.2%	7.1%	9.2%	2.8%	-	-
Toronto – Southeast		207	24.3 (15.0)	79.8 (82.0)	102.1 (109.0)	21.5 (21.0)	0.7 (0.6)	39.2 (37.0)	38.1%	34.9%	3.7%	8.5%	2.1%	-	12.7%
Toronto – West		186	24.1 (14.0)	76.0 (78.0)	99.3 (105.0)	22.2 (21.0)	0.8 (0.6)	41.5 (39.0)	41.9%	37.1%	5.4%	11.4%	3.6%	0.6%	-
West GTA		341	18.6 (11.0)	73.4 (75.0)	98.2 (105.0)	23.7 (23.0)	1.0 (0.8)	33.1 (28.0)	13.5%	62.4%	3.3%	15.2%	4.6%	0.3%	0.7%
<b>Central East</b>	2771	29	12.4 (9.0)	75.2 (79.0)	95.5 (109.5)	17.6 (14.5)	0.7 (0.7)	31.2 (22.0)	11.5%	65.4%	3.8%	19.2%	-	-	-
	3507	64	9.2 (7.0)	66.5 (71.5)	98.1 (106.5)	28.5 (23.5)	1.5 (1.2)	25.9 (19.0)	38.2%	29.1%	10.9%	3.6%	14.5%	-	3.6%
	3617	58	16.4 (11.5)	69.2 (64.5)	95.9 (101.0)	25.3 (24.0)	1.0 (0.7)	31.7 (29.0)	-	62.1%	17.2%	17.2%	-	3.4%	-
	3858	69	12.6 (10.0)	86.1 (86.0)	106.5 (110.0)	20.8 (22.0)	1.2 (1.0)	21.8 (20.0)	31.1%	59.0%	4.9%	3.3%	1.6%	-	-
	3687	24	21.0 (16.0)	78.3 (80.0)	94.5 (101.5)	14.1 (13.5)	0.4 (0.5)	28.4 (23.0)	26.1%	39.1%	-	21.7%	13.0%	-	-
	3934	86	16.4 (10.0)	59.5 (57.5)	86.0 (98.0)	23.0 (25.0)	0.7 (0.7)	51.8 (44.0)	8.7%	50.7%	4.3%	26.1%	8.7%	1.4%	-
	4307	28	9.1 (6.5)	78.8 (78.0)	108.0 (114.0)	30.8 (32.0)	1.3 (1.1)	28.8 (28.0)	62.5%	29.2%	-	-	4.2%	-	4.2%
	4450	22	13.9 (9.0)	74.3 (73.0)	99.8 (104.0)	23.8 (25.5)	0.7 (0.5)	69.4 (59.5)	5.6%	72.2%	-	16.7%	-	5.6%	-
	4483	33	15.1 (9.0)	84.6 (88.0)	107.8 (113.0)	22.3 (15.0)	0.7 (0.7)	31.9 (23.0)	3.2%	80.6%	3.2%	12.9%	-	-	-
<b>Central South</b>	1912	65	23.0 (12.0)	80.5 (81.0)	102.1 (109.0)	21.1 (22.0)	0.6 (0.5)	38.0 (38.0)	6.3%	69.8%	7.9%	4.8%	6.3%	1.6%	3.2%
	3155	20	15.8 (12.0)	77.2 (85.5)	112.3 (115.0)	21.6 (22.0)	0.8 (0.7)	36.4 (33.5)	31.6%	36.8%	5.3%	21.1%	-	5.3%	-
	3736	16	5.7 (4.0)	84.4 (88.0)	94.3 (105.0)	8.7 (17.0)	1.5 (1.9)	10.0 (10.0)	7.1%	42.9%	21.4%	-	28.6%	-	-
	3778	50	9.2 (6.0)	74.9 (77.5)	100.9 (104.0)	19.4 (18.0)	1.2 (1.0)	24.9 (19.0)	2.4%	75.6%	7.3%	7.3%	-	4.9%	2.4%
	3880	9	13.1 (10.0)	76.8 (74.0)	103.3 (105.0)	21.6 (25.0)	1.0 (0.8)	30.6 (20.5)	-	62.5%	25.0%	-	12.5%	-	-
	3881	58	30.9 (20.5)	61.7 (61.0)	96.6 (106.5)	31.0 (27.0)	0.9 (0.8)	48.1 (41.5)	39.6%	20.8%	2.1%	31.3%	6.3%	-	-
	3912	36	16.5 (13.0)	81.1 (86.5)	104.2 (111.0)	21.8 (15.0)	0.9 (0.8)	27.9 (22.5)	48.4%	35.5%	16.1%	-	-	-	-
	4289	**	18.0 (18.0)	94.0 (94.0)	107.0 (107.0)	13.0 (13.0)	2.2 (2.2)	4.5 (4.5)	100.0%	-	-	-	-	-	-
	4342	110	15.6 (12.0)	80.7 (82.0)	102.5 (108.0)	19.4 (18.0)	0.8 (0.7)	28.9 (27.0)	11.7%	59.6%	11.7%	7.4%	7.4%	1.1%	1.1%
	4292	69	13.3 (10.0)	70.0 (73.0)	95.0 (101.0)	25.9 (24.0)	0.8 (0.8)	33.3 (27.5)	21.0%	56.5%	11.3%	6.5%	3.2%	-	1.6%
	4595	84	31.3 (23.0)	75.0 (76.5)	105.1 (111.0)	28.0 (25.0)	1.0 (0.9)	35.8 (32.0)	32.9%	44.3%	1.4%	20.0%	1.4%	-	-
<b>East – Champlain</b>	3782	67	24.9 (23.0)	73.7 (75.0)	99.9 (109.0)	26.8 (26.0)	0.4 (0.4)	65.2 (63.0)	46.8%	23.4%	14.9%	10.6%	4.3%	-	-
	4299	58	16.7 (6.5)	77.1 (76.0)	99.7 (109.5)	22.9 (22.0)	0.8 (0.7)	34.5 (30.5)	17.0%	43.4%	11.3%	11.3%	17.0%	-	-
	4329	14	9.3 (7.5)	101.1 (104.5)	114.7 (118.5)	13.6 (14.0)	1.1 (1.2)	13.6 (13.0)	42.9%	57.1%	-	-	-	-	-
	4429	32	21.3 (17.0)	80.5 (90.5)	97.1 (112.0)	16.2 (12.5)	0.3 (0.4)	40.8 (41.0)	44.8%	34.5%	-	10.3%	10.3%	-	-
	4461	18	10.4 (9.5)	83.4 (83.5)	102.8 (108.0)	16.7 (13.5)	1.3 (1.3)	14.3 (14.0)	50.0%	27.8%	-	-	22.2%	-	-
	4470	48	15.6 (13.0)	86.1 (94.5)	110.7 (117.5)	20.1 (18.5)	0.5 (0.3)	45.8 (34.0)	28.2%	38.5%	15.4%	2.6%	15.4%	-	-
	4584	39	14.9 (10.0)	89.0 (90.0)	109.7 (115.0)	20.9 (18.0)	1.2 (1.0)	20.3 (17.0)	48.6%	31.4%	11.4%	-	5.7%	-	2.9%
<b>Northeast</b>	3413	19	16.1 (13.0)	61.2 (48.5)	89.3 (92.0)	28.2 (22.0)	1.2 (0.6)	43.1 (35.0)	5.6%	44.4%	5.6%	33.3%	11.1%	-	-
	4409	57	10.6 (8.0)	72.7 (76.0)	98.1 (105.0)	21.4 (20.0)	1.2 (1.0)	25.5 (20.0)	16.0%	46.0%	12.0%	6.0%	20.0%	-	-
	4592	7	43.1 (12.0)	88.0 (92.0)	87.3 (116.0)	-0.7 (11.0)	-1.2 (0.7)	18.7 (13.0)	14.3%	28.6%	-	42.9%	14.3%	-	-
	4061	99	25.0 (16.5)	80.8 (85.0)	104.9 (113.0)	20.3 (18.0)	0.6 (0.6)	35.8 (30.0)	32.6%	43.8%	2.2%	11.2%	9.0%	1.1%	-
<b>Northwest</b>	3891	73	21.5 (14.0)	72.0 (74.0)	98.5 (107.0)	24.4 (2.0)	0.7 (0.6)	43.1 (38.0)	37.0%	37.0%	9.3%	3.7%	13.0%	-	-
<b>South East</b>	2223	37	22.9 (16.0)	84.7 (84.0)	107.0 (114.0)	22.4 (21.0)	0.4 (0.5)	58.5 (52.0)	18.9%	73.0%	2.7%	5.4%	-	-	-
	3990	41	16.4 (10.0)	85.5 (86.0)	106.1 (113.0)	20.4 (20.0)	0.7 (0.6)	36.8 (31.0)	58.3%	33.3%	2.8%	-	5.6%	-	-
	4647	**	23.6 (20.0)	67.4 (55.0)	74.2 (72.0)	6.8 (8.0)	0.1 (0.2)	36.0 (33.0)	20.0%	20.0%	-	60.0%	-	-	-

Site	NRS Facility Number	Admission to Rehabilitation <sup>1</sup> (N)	Days from Stroke Onset to Admission, Mean (Median)	Admission FIM <sup>®</sup> Score, Mean (Median)	Discharge FIM <sup>®</sup> Score, Mean (Median)	Change in FIM <sup>®</sup> Score, Mean (Median)	FIM <sup>®</sup> Efficiency, Mean (Median)	Length of Stay, Mean (Median)	Home without Services	Home with Services	Other Community Services	Long-Term Care Facility	Acute Care Facility	Died	Unavailable/Unknown
<b>Ontario<sup>2</sup></b>		<b>2,925</b>	<b>19.5 (12.0)</b>	<b>76.1 (78.0)</b>	<b>100.1 (108.0)</b>	<b>22.2 (21.0)</b>	<b>0.8 (0.7)</b>	<b>35.8 (30.0)</b>	<b>27.6%</b>	<b>42.0%</b>	<b>6.6%</b>	<b>11.1%</b>	<b>6.1%</b>	<b>0.6%</b>	<b>2.0%</b>
<b>Southwest</b>	3612	39	8.1 (4.5)	61.5 (58.5)	84.3 (101.0)	21.7 (20.0)	0.9 (0.9)	34.8 (28.0)	20.0%	40.0%	-	26.7%	13.3%	-	-
	3846	52	24.5 (16.5)	80.9 (82.0)	99.8 (109.0)	16.9 (16.0)	0.4 (0.4)	41.9 (40.0)	34.0%	40.4%	2.1%	12.8%	2.1%	2.1%	6.4%
	3884	146	37.9 (14.0)	76.4 (78.0)	100.1 (109.0)	22.7 (21.0)	0.6 (0.6)	42.4 (36.0)	58.8%	13.2%	8.8%	11.8%	5.9%	0.7%	0.7%
	3897	**	11.0 (14.0)	56.7 (54.0)	79.0 (65.0)	22.3 (17.0)	1.3 (1.6)	22.3 (20.0)	33.3%	-	-	66.7%	-	-	-
	3916	7	71.6 (75.0)	56.9 (37.0)	79.6 (82.0)	22.7 (24.0)	0.5 (0.3)	58.3 (63.0)	50.0%	33.3%	-	16.7%	-	-	-
	3946	55	13.5 (10.0)	74.9 (75.0)	110.1 (114.0)	28.4 (25.0)	0.8 (0.7)	38.0 (35.5)	6.3%	66.7%	10.4%	-	14.6%	-	2.1%
	4149	27	6.5 (5.0)	80.3 (87.0)	99.2 (112.0)	18.9 (19.0)	2.5 (1.8)	7.0 (6.0)	23.8%	52.4%	-	4.8%	19.0%	-	-
	4162	23	10.3 (12.0)	73.6 (68.0)	100.7 (106.5)	20.3 (20.5)	0.9 (0.8)	25.7 (21.0)	35.3%	52.9%	5.9%	-	5.9%	-	-
	4204	19	12.7 (9.0)	61.5 (63.0)	92.2 (91.5)	20.0 (20.0)	2.9 (1.9)	14.1 (12.5)	-	23.1%	38.5%	23.1%	15.4%	-	-
	4417	51	11.9 (9.0)	72.7 (77.0)	100.2 (105.0)	24.9 (27.0)	0.7 (0.6)	49.8 (40.5)	16.7%	57.1%	2.4%	14.3%	2.4%	-	7.1%
4361	49	16.5 (10.0)	74.5 (76.0)	93.5 (98.0)	16.9 (19.5)	1.0 (0.9)	22.1 (18.0)	18.2%	40.9%	15.9%	4.5%	2.3%	-	18.2%	
<b>Toronto – North &amp; East</b>	4155	19	11.3 (7.0)	81.3 (81.0)	106.7 (112.0)	24.9 (26.0)	2.4 (2.3)	11.4 (10.0)	-	82.4%	11.8%	5.9%	-	-	-
	4156	**	3.0 (3.0)	78.0 (78.0)	81.0 (81.0)	3.0 (3.0)	0.1 (0.1)	25.0 (25.0)	-	-	-	100.0%	-	-	-
	4273	**	22.2 (24.0)	44.6 (39.0)	51.0 (44.0)	6.4 (7.0)	0.4 (0.3)	27.4 (33.0)	-	100.0%	-	-	-	-	-
	4335	**	11.7 (14.0)	65.0 (46.0)	75.0 (75.0)	-0.5 (-0.5)	-	19.0 (19.0)	50.0%	50.0%	-	-	-	-	-
	1337	94	15.6 (13.0)	85.8 (87.0)	106.4 (112.0)	19.5 (20.5)	0.7 (0.6)	34.5 (31.5)	53.0%	26.5%	8.4%	7.2%	4.8%	-	-
	3439	42	19.3 (16.5)	75.4 (76.0)	96.2 (99.5)	20.2 (19.5)	0.5 (0.5)	37.6 (33.0)	2.7%	81.1%	2.7%	13.5%	-	-	-
<b>Toronto – Southeast</b>	3941	48	10.9 (8.5)	86.8 (89.5)	102.7 (113.0)	16.1 (18.0)	0.9 (0.9)	23.6 (16.5)	56.5%	39.1%	4.3%	-	-	-	-
	4151	20	7.5 (6.5)	82.6 (81.0)	112.1 (114.0)	29.5 (28.0)	1.2 (1.1)	32.2 (32.0)	5.0%	85.0%	5.0%	5.0%	-	-	-
	4279	**	10.0 (10.0)	84.0 (84.0)	108.0 (108.0)	24.0 (24.0)	1.4 (1.4)	17.0 (17.0)	-	100.0%	-	-	-	-	-
	1355	85	29.4 (16.0)	75.3 (75.0)	100.7 (107.0)	23.8 (23.0)	0.6 (0.5)	41.7 (38.0)	24.0%	28.0%	2.7%	9.3%	4.0%	-	32.0%
1436	54	34.7 (26.0)	79.8 (80.0)	99.7 (109.0)	19.9 (20.0)	0.4 (0.4)	52.5 (50.5)	57.4%	19.1%	4.3%	17.0%	2.1%	-	-	
<b>Toronto – West</b>	3950	164	26.0 (15.0)	73.6 (72.5)	97.5 (104.0)	22.8 (21.0)	0.5 (0.5)	46.2 (42.0)	39.3%	37.9%	6.2%	12.4%	3.4%	0.7%	-
	4366	16	9.5 (6.5)	94.9 (98.0)	111.0 (116.5)	16.1 (16.5)	2.6 (2.0)	7.2 (7.0)	68.8%	25.0%	-	-	6.3%	-	-
	4293	6	13.3 (12.5)	91.3 (91.0)	113.0 (115.0)	21.7 (22.0)	1.9 (1.8)	13.8 (14.0)	33.3%	50.0%	-	16.7%	-	-	-
<b>West GTA</b>	1471	76	23.6 (20.0)	74.5 (73.0)	95.2 (104.0)	20.5 (18.0)	0.5 (0.4)	41.3 (42.0)	33.3%	40.6%	4.3%	17.4%	2.9%	1.4%	-
	3288	36	28.7 (10.0)	67.8 (65.0)	89.8 (91.0)	22.1 (27.5)	0.7 (0.7)	38.9 (40.0)	13.9%	55.6%	11.1%	16.7%	2.8%	-	-
	4136	29	30.9 (11.0)	68.3 (69.0)	93.8 (102.0)	24.5 (21.5)	0.8 (0.6)	41.4 (30.0)	16.0%	44.0%	4.0%	32.0%	4.0%	-	-
	4150	139	9.5 (4.0)	74.1 (77.0)	100.4 (105.5)	23.3 (23.0)	1.6 (1.3)	21.2 (18.0)	7.1%	71.7%	0.9%	12.4%	6.2%	-	1.8%
	4277	61	21.3 (14.0)	76.4 (77.0)	104.9 (111.0)	28.9 (29.0)	0.8 (0.8)	40.1 (43.0)	1.7%	81.7%	1.7%	10.0%	5.0%	-	-

Data sources: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD) and National Rehabilitation Reporting System (CIHI-NRS), 2006/07.

Inclusion criteria: All patients with a diagnosis of stroke (using ICD-10 codes) discharged from an acute care hospital who were admitted to inpatient rehabilitation and classified as Rehabilitation Client Group (RCG) 1 (Stroke) in the CIHI-NRS database.

<sup>1</sup> Patients discharged from an acute inpatient hospital with a diagnosis of stroke in 2006/07 and admitted into an inpatient rehabilitation hospital in the same fiscal year.

<sup>2</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).  
(2) The Brantford General Hospital facility number was 4292 in 2006/07 and has since changed to 4678.  
(3) Cells in which there was no reported/available data are marked with a hyphen (-).

FIM<sup>®</sup> = Functional Independence Measure

Exhibit 3.7.2 Inpatient rehabilitation facility stroke patient profiles, in Ontario and by OSS region and National Rehabilitation Reporting System facility number, 2007/08

Site	NRS Facility Number	Admission to Rehabilitation <sup>1</sup> (N)	Days from Stroke Onset to Admission, Mean (Median)	Admission FIM <sup>®</sup> Score, Mean (Median)	Discharge FIM <sup>®</sup> Score, Mean (Median)	Change in FIM <sup>®</sup> Score, Mean (Median)	FIM <sup>®</sup> Efficiency, Mean (Median)	Length of Stay, Mean (Median)	Home without Services	Home with Services	Other Community Services	Long-Term Care Facility	Acute Care Facility	Died	Unavailable/Unknown
<b>Ontario<sup>2</sup></b>		<b>3,010</b>	<b>19.5 (12.0)</b>	<b>76.3 (78.0)</b>	<b>100.6 (108.0)</b>	<b>22.4 (21.0)</b>	<b>0.9 (0.7)</b>	<b>35.2 (29.0)</b>	<b>31.0%</b>	<b>45.2%</b>	<b>6.0%</b>	<b>8.5%</b>	<b>6.1%</b>	<b>0.5%</b>	<b>2.7%</b>
<b>Ontario Stroke System Region</b>															
Central East		451	15.0 (10.0)	70.7 (72.5)	96.9 (106.5)	24.4 (23.0)	1.1 (0.8)	31.7 (25)	20.0%	53.2%	5.5%	8.6%	9.4%	1.0%	2.3%
Central South		504	18.4 (12.0)	74.9 (76.0)	101.2 (108.0)	25.0 (24.0)	1.0 (0.8)	34.8 (29)	20.5%	56.0%	7.4%	11.9%	4.0%	0.2%	-
East – Champlain		258	22.2 (13.0)	83.3 (89.0)	105.0 (114.0)	20.3 (17.0)	0.8 (0.7)	35.9 (29)	46.8%	30.9%	10.0%	4.5%	7.3%	-	0.5%
Northeast		131	19.6 (13.0)	76.3 (79.5)	99.8 (111.5)	22.5 (20.5)	0.8 (0.6)	39.6 (30)	31.6%	42.1%	5.3%	9.6%	10.5%	-	0.9%
Northwest		84	18.1 (13.0)	73.4 (79.0)	97.1 (108.0)	21.8 (16.0)	0.4 (0.4)	52.7 (46)	34.5%	44.8%	5.2%	1.7%	13.8%	-	-
South East		120	21.7 (16.0)	82.7 (87.0)	106.7 (113.0)	21.8 (22.0)	0.6 (0.5)	42.9 (36)	36.2%	46.7%	5.7%	6.7%	4.8%	-	-
Southwest		541	19.3 (10.0)	74.8 (75.0)	98.9 (108.0)	21.3 (19.0)	0.9 (0.6)	33.4 (27)	34.4%	37.9%	5.4%	9.2%	7.0%	1.7%	4.4%
Toronto – North & East		150	15.2 (12.0)	83.2 (87.0)	99.2 (108.5)	16.1 (15.0)	0.8 (0.6)	30.0 (24)	48.9%	32.1%	4.6%	9.2%	3.1%	-	2.3%
Toronto – Southeast		191	27.2 (12.0)	81.0 (82.0)	103.8 (109.0)	20.9 (21.0)	0.8 (0.7)	31.8 (30)	34.7%	34.7%	3.5%	6.5%	-	-	20.6%
Toronto – West		157	25.6 (16.0)	79.8 (82.5)	100.8 (109.0)	20.8 (19.0)	0.5 (0.5)	46.6 (42)	55.2%	26.1%	6.0%	8.2%	3.7%	-	0.7%
West GTA		411	19.6 (11.0)	74.0 (75.0)	101.3 (107.0)	24.0 (23.0)	1.0 (0.8)	33.5 (28)	21.9%	59.0%	5.1%	7.9%	6.2%	-	-
<b>Central East</b>	2771	46	16.5 (12.5)	71.3 (69.0)	96.9 (108.0)	25.3 (23.0)	1.2 (0.8)	30.6 (28.5)	-	73.2%	9.8%	7.3%	7.3%	2.4%	-
	3507	76	17.4 (8.0)	67.2 (70.5)	100.5 (108.0)	27.8 (27.5)	1.6 (1.2)	24.2 (16.0)	34.3%	25.4%	6.0%	3.0%	26.9%	1.5%	3.0%
	3617	62	13.0 (10.0)	70.4 (72.0)	91.0 (99.0)	21.4 (18.0)	1.2 (0.9)	25.0 (23.0)	1.9%	60.4%	11.3%	26.4%	-	-	-
	3858	66	18.7 (14.0)	83.3 (81.5)	100.1 (107.0)	16.7 (16.0)	1.1 (0.8)	21.6 (17.0)	42.6%	46.3%	3.7%	3.7%	3.7%	-	-
	3687	40	15.7 (14.0)	73.1 (73.0)	96.4 (110.0)	22.9 (26.0)	1.0 (0.8)	26.7 (22.0)	31.6%	39.5%	-	5.3%	21.1%	2.6%	-
	3934	71	14.7 (11.0)	56.0 (52.0)	89.0 (96.0)	31.2 (26.0)	0.8 (0.7)	49.5 (42.0)	3.4%	71.2%	5.1%	6.8%	1.7%	1.7%	10.2%
	4307	37	11.4 (8.0)	76.1 (76.0)	105.8 (113.0)	28.0 (31.0)	0.9 (1.0)	37.8 (28.5)	46.9%	37.5%	3.1%	-	9.4%	-	3.1%
	4450	19	11.7 (7.0)	76.7 (81.0)	94.5 (113.0)	22.2 (21.0)	0.6 (0.5)	55.1 (41.0)	-	61.5%	7.7%	23.1%	7.7%	-	-
	4483	34	9.9 (8.0)	72.8 (75.0)	101.6 (115.0)	23.6 (20.0)	0.6 (0.5)	40.3 (32.5)	3.6%	85.7%	-	10.7%	-	-	-
<b>Central South</b>	1912	53	31.9 (13.0)	80.4 (79.0)	103.2 (107.0)	22.8 (19.5)	0.6 (0.5)	48.6 (39.0)	12.5%	56.3%	20.8%	6.3%	4.2%	-	-
	3155	15	14.0 (10.0)	79.2 (86.0)	107.1 (114.5)	14.0 (10.5)	0.9 (1.0)	21.5 (16.0)	61.5%	15.4%	-	7.7%	15.4%	-	-
	3736	22	5.4 (5.0)	85.5 (90.0)	104.1 (111.0)	16.8 (18.0)	2.9 (2.6)	7.1 (6.0)	21.1%	57.9%	-	10.5%	10.5%	-	-
	3778	39	7.8 (5.5)	75.4 (73.0)	104.3 (106.0)	26.4 (25.0)	1.1 (1.0)	31.7 (26.0)	3.1%	78.1%	12.5%	3.1%	3.1%	-	-
	3880	2	7.5 (7.5)	80.0 (80.0)	99.5 (99.5)	19.5 (19.5)	1.0 (1.0)	25.5 (25.5)	50.0%	50.0%	-	-	-	-	-
	3881	64	20.5 (15.0)	61.0 (65.0)	90.0 (100.5)	27.8 (27.0)	0.7 (0.7)	43.6 (39.0)	32.7%	36.5%	3.8%	26.9%	-	-	-
	3912	46	16.7 (14.0)	80.4 (76.5)	100.8 (108.5)	16.6 (17.0)	0.7 (0.7)	27.7 (23.0)	31.6%	36.8%	7.9%	13.2%	10.5%	-	-
	4342	94	16.4 (12.0)	75.1 (79.5)	100.0 (106.5)	23.8 (24.0)	1.0 (0.8)	32.8 (25.0)	5.3%	73.7%	3.9%	11.8%	5.3%	-	-
	4678	67	11.8 (10.0)	72.7 (71.0)	100.0 (106.0)	27.6 (25.0)	1.2 (1.1)	29.6 (24.0)	23.7%	57.6%	11.9%	6.8%	-	-	-
	4595	102	24.9 (18.5)	76.2 (76.5)	106.7 (112.0)	30.0 (31.0)	0.9 (0.8)	39.8 (40.0)	23.1%	57.1%	3.3%	13.2%	2.2%	1.1%	-
<b>East – Champlain</b>	3782	56	39.0 (19.0)	74.2 (69.5)	102.0 (108.0)	26.6 (25.5)	0.5 (0.4)	57.7 (56.0)	47.8%	23.9%	17.4%	10.9%	-	-	-
	4299	49	13.6 (10.0)	82.7 (85.0)	106.9 (112.5)	23.6 (17.0)	1.1 (0.8)	29.9 (23.0)	35.6%	51.1%	8.9%	2.2%	2.2%	-	-
	4329	34	9.5 (8.0)	103.2 (106.5)	117.5 (119.0)	13.9 (15.0)	1.5 (1.1)	13.1 (12.0)	78.1%	12.5%	6.3%	-	3.1%	-	-
	4429	34	36.5 (34.5)	80.0 (86.0)	98.7 (109.0)	21.0 (19.5)	0.4 (0.4)	52.4 (49.0)	47.8%	26.1%	4.3%	13.0%	8.7%	-	-
	4461	12	7.3 (6.5)	91.1 (100.5)	97.2 (116.0)	6.1 (10.0)	0.6 (0.7)	11.8 (11.5)	41.7%	33.3%	8.3%	-	16.7%	-	-
	4470	42	21.8 (13.5)	78.0 (81.0)	102.4 (110.5)	21.7 (19.0)	0.6 (0.4)	46.1 (45.0)	20.0%	48.6%	8.6%	-	22.9%	-	-
	4584	31	9.7 (9.5)	86.7 (91.0)	105.8 (117.0)	15.5 (16.0)	1.0 (0.9)	16.4 (15.0)	63.0%	11.1%	11.1%	3.7%	7.4%	-	3.7%
<b>Northeast</b>	3413	19	22.8 (17.0)	80.5 (80.0)	102.4 (112.0)	22.4 (14.5)	0.4 (0.4)	54.3 (51.5)	12.5%	56.3%	-	12.5%	18.8%	-	-
	4409	43	11.6 (9.0)	71.7 (71.0)	92.7 (103.5)	19.0 (18.0)	1.2 (0.8)	30.3 (23.5)	36.8%	34.2%	7.9%	5.3%	13.2%	-	2.6%
	4592	**	129.7 (10.0)	97.0 (95.0)	102.3 (117.0)	5.3 (10.0)	0.1 (0.5)	13.7 (11.0)	33.3%	66.7%	-	-	-	-	-
	4061	69	18.9 (14.0)	77.0 (84.0)	103.2 (114)	25.6 (22.0)	0.7 (0.6)	43.4 (33.0)	33.3%	42.1%	5.3%	12.3%	7.0%	-	-
<b>Northwest</b>	3891	84	18.1 (13.0)	73.4 (79.0)	97.1 (108.0)	21.8 (16.0)	0.4 (0.4)	52.7 (46.0)	34.5%	44.8%	5.2%	1.7%	13.8%	-	-
<b>South East</b>	2223	55	26.3 (18.0)	88.2 (89.0)	112.9 (117.0)	20.4 (19.5)	0.4 (0.4)	48.8 (41.0)	22.2%	62.2%	4.4%	8.9%	2.2%	-	-
	3990	48	19.0 (14.5)	76.4 (78.0)	102.7 (107.0)	24.6 (25.0)	0.8 (0.6)	41.8 (33.5)	47.7%	31.8%	9.1%	6.8%	4.5%	-	-
	4647	17	14.6 (16.0)	82.7 (92.0)	100.9 (113.0)	18.2 (14.0)	0.7 (0.5)	30.2 (22.0)	43.8%	43.8%	-	-	12.5%	-	-

Site	NRS Facility Number	Admission to Rehabilitation <sup>1</sup> (N)	Days from Stroke Onset to Admission, Mean (Median)	Admission FIM <sup>®</sup> Score, Mean (Median)	Discharge FIM <sup>®</sup> Score, Mean (Median)	Change in FIM <sup>®</sup> Score, Mean (Median)	FIM <sup>®</sup> Efficiency, Mean (Median)	Length of Stay, Mean (Median)	Home without Services	Home with Services	Other Community Services	Long-Term Care Facility	Acute Care Facility	Died	Unavailable/Unknown
<b>Ontario<sup>2</sup></b>		<b>3,010</b>	<b>19.5 (12.0)</b>	<b>76.3 (78.0)</b>	<b>100.6 (108.0)</b>	<b>22.4 (21.0)</b>	<b>0.9 (0.7)</b>	<b>35.2 (29.0)</b>	<b>31.0%</b>	<b>45.2%</b>	<b>6.0%</b>	<b>8.5%</b>	<b>6.1%</b>	<b>0.5%</b>	<b>2.7%</b>
<b>Southwest</b>	3612	44	27.9 (7.0)	61.9 (55.0)	83.7 (96.0)	19.9 (18.0)	0.5 (0.6)	44.5 (39.0)	16.2%	29.7%	5.4%	37.8%	10.8%	-	-
	3846	55	20.4 (15.0)	74.3 (72.5)	97.5 (108.0)	20.9 (19.0)	0.6 (0.5)	39.3 (37.5)	20.4%	61.2%	4.1%	10.2%	4.1%	-	-
	3884	154	30.3 (15.0)	81.7 (84.0)	104.7 (112.0)	19.7 (16.0)	0.5 (0.6)	39.4 (32.5)	71.2%	8.3%	3.0%	9.8%	5.3%	2.3%	-
	3897	**	9.3 (10.0)	75.0 (69.0)	102.0 (111.0)	27.0 (15.0)	0.6 (0.4)	44.0 (42.0)	-	66.7%	-	33.3%	-	-	-
	3916	15	34.9 (33.0)	77.8 (80.0)	112.3 (118.0)	30.3 (33.5)	0.9 (0.9)	35.0 (34.5)	91.7%	8.3%	-	-	-	-	-
	3946	69	13.9 (11.0)	73.1 (74.5)	108.9 (114.0)	30.0 (28.5)	1.0 (1.0)	30.8 (28.0)	10.2%	59.3%	6.8%	5.1%	16.9%	1.7%	-
	4149	29	8.8 (8.0)	73.1 (82.0)	93.9 (108.0)	17.4 (21.0)	2.2 (2.1)	7.4 (5.5)	15.8%	63.2%	-	-	21.1%	-	-
	4162	20	11.6 (9.5)	75.7 (81.5)	91.2 (104.5)	-	0.8 (0.3)	24.6 (19.5)	5.9%	76.5%	-	11.8%	-	5.9%	-
	4204	18	7.1 (7.0)	77.0 (78.0)	101.2 (110.0)	24.8 (19.0)	2.5 (2.0)	13.8 (12.0)	11.1%	44.4%	27.8%	16.7%	-	-	-
	4417	54	9.9 (7.0)	75.5 (79.0)	92.9 (99.0)	14.5 (13.0)	0.3 (0.3)	46.6 (36.0)	10.0%	67.5%	-	2.5%	5.0%	2.5%	12.5%
4361	83	9.8 (8.0)	69.2 (70.0)	93.8 (102.0)	23.1 (22.0)	1.2 (1.1)	23.3 (21.0)	28.8%	32.9%	11.0%	-	4.1%	2.7%	20.5%	
<b>Toronto – North &amp; East</b>	4155	15	12.5 (11.0)	72.4 (73.0)	87.9 (90.0)	17.4 (17.0)	1.7 (1.8)	12.4 (10.0)	25.0%	50.0%	-	-	-	-	25.0%
	4156	**	9.0 (9.0)	81.0 (81.0)	92.5 (92.5)	11.5 (11.5)	0.9 (0.9)	30.0 (30.0)	100.0%	-	-	-	-	-	-
	4273	**	39.3 (34.5)	61.3 (56.0)	65.0 (58.5)	3.8 (3.5)	0.2 (0.2)	14.5 (14.5)	-	100.0%	-	-	-	-	-
	4335	9	10.9 (11.0)	90.0 (89.0)	102.3 (109.0)	12.3 (10.0)	1.1 (0.6)	11.6 (11.0)	-	88.9%	11.1%	-	-	-	-
	1337	81	15.3 (12.0)	88.7 (90.0)	109.6 (113.0)	20.8 (20.0)	0.8 (0.7)	32.6 (27.0)	68.5%	17.8%	2.7%	8.2%	2.7%	-	-
	3439	41	15.0 (13.0)	77.3 (80.0)	85.3 (90.0)	8.6 (8.0)	0.3 (0.2)	36.6 (34.5)	28.6%	40.0%	8.6%	17.1%	5.7%	-	-
<b>Toronto – Southeast</b>	3941	42	16.7 (7.5)	89.1 (90.0)	107.7 (110.0)	17.9 (16.0)	1.3 (1.0)	19.4 (14.5)	46.3%	39.0%	9.8%	4.9%	-	-	-
	4151	21	33.6 (14.0)	74.0 (76.0)	93.5 (93.0)	20.8 (22.0)	0.7 (0.8)	28.6 (22.5)	11.1%	44.4%	-	44.4%	-	-	-
	4279	**	13.3 (12.0)	91.7 (88.0)	110.7 (119.0)	19.0 (17.0)	1.1 (1.2)	17.3 (15.0)	66.7%	33.3%	-	-	-	-	-
	1355	98	32.6 (13.5)	78.2 (79.0)	102.9 (107.0)	21.6 (21.0)	0.6 (0.6)	35.9 (35.0)	20.7%	36.6%	-	-	-	-	42.7%
	1436	30	21.3 (16.0)	82.5 (85.5)	106.4 (114.0)	23.4 (23.0)	0.5 (0.6)	41.4 (43.0)	73.1%	15.4%	7.7%	3.8%	-	-	-
<b>Toronto – West</b>	3950	148	26.8 (17.5)	78.6 (81.0)	100.2 (107.0)	21.6 (19.0)	0.5 (0.5)	49.5 (43.0)	55.6%	25.0%	5.6%	8.9%	4.0%	-	0.8%
	4366	9	6.6 (6.0)	99.9 (98.0)	109.2 (117.0)	9.3 (17.0)	1.2 (1.6)	9.4 (9.0)	55.6%	33.3%	11.1%	-	-	-	-
	4293	**	24.0 (24.0)	76.0 (76.0)	98.0 (98.0)	22.0 (22.0)	2.0 (2.0)	11.0 (11.0)	-	100.0%	-	-	-	-	-
<b>West GTA</b>	1471	85	30.2 (18.0)	82.1 (82.5)	103.9 (109.0)	19.4 (17.0)	0.5 (0.4)	44.7 (42.0)	51.4%	38.9%	2.8%	5.6%	1.4%	-	-
	3288	40	11.7 (8.5)	81.7 (83.0)	100.4 (111.0)	19.4 (18.5)	0.7 (0.7)	26.2 (25.0)	11.1%	66.7%	5.6%	11.1%	5.6%	-	-
	4136	55	13.7 (11.0)	64.0 (67.0)	95.0 (104.0)	26.9 (27.5)	0.9 (0.9)	35.6 (24.5)	23.7%	55.3%	7.9%	2.6%	10.5%	-	-
	4150	167	19.8 (6.0)	70.7 (74.0)	100.2 (105.0)	25.8 (26.0)	1.6 (1.3)	26.8 (18.5)	10.0%	66.7%	6.0%	8.7%	8.7%	-	-
	4277	64	15.4 (14.0)	75.8 (77.5)	104.8 (113.0)	26.6 (26.0)	0.8 (0.7)	40.3 (35.0)	21.7%	61.7%	3.3%	10.0%	3.3%	-	-

Data sources: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD) and National Rehabilitation Reporting System (CIHI-NRS), 2007/08.

Inclusion criteria: All patients with a diagnosis of stroke (using ICD-10 codes) discharged from an acute care hospital who were admitted to inpatient rehabilitation and classified as Rehabilitation Client Group (RCG) 1 (Stroke) in the CIHI-NRS database.

<sup>1</sup> Patients discharged from an acute inpatient hospital with a diagnosis of stroke in 2007/08 and admitted to an inpatient rehabilitation hospital in the same fiscal year.

<sup>2</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).  
(2) Cells in which there was no reported/available data are marked with a hyphen (-).

FIM<sup>®</sup> = Functional Independence Measure

## 4. Home Care Services

### Support Services Provided to Home Care Clients

#### Findings:

- ▶ **Exhibit 4.1:** In 2006/07, 7,130 stroke/TIA patients received services from community care access centres (CCACs) within 60 days of discharge from an acute care hospital. Of these, 64% were not receiving any CCAC services 90 days prior to hospitalization for stroke.
- ▶ **Exhibit 4.2:** CCAC services provided within 60 days following an acute stroke hospitalization were extremely limited across the province. Of the total number of stroke clients receiving home care, 37% received occupational therapy, one in four received physical therapy and one in 10 received speech therapy. Less than 2% of clients received respite care and less than 3% were visited by a social worker. Psychological services were provided only in the Toronto area. For those who received services at home, the average number of visits was minimal: 10 nursing visits, 2.8 occupational therapy visits, 3.0 speech therapy visits, 3.8 physical therapy visits and 2.6 social work visits.

#### Conclusions and recommendations:

CCAC service intensity was low and did not meet best practices.

Investment in CCAC rehabilitation services could potentially reduce rates of readmission to hospitals and admission to long-term care institutions.

Given that 54% of all stroke/TIA patients are discharged directly to home from acute care following a median length of stay of seven days, the opportunity for maximizing recovery with community-based rehabilitation services is lacking. Given the burden of care for many families, the level of respite and social work services seems low. This requires further investigation.

### Exhibit 4.1 Number and percentage of clients (active and new) receiving home care services following an acute hospitalization for stroke, in Ontario and by Local Health Integration Network, 2006/07 to 2007/08

Site	Number of Active Clients with Stroke <sup>1</sup>	Percentage of Active Clients with Stroke	Number of New Clients with Stroke <sup>1</sup>	Percentage of New Clients with Stroke
<b>Ontario</b>	<b>2,564</b>	<b>100.0</b>	<b>4,566</b>	<b>100.0</b>
<b>Local Health Integration Network</b>				
1. Erie St. Clair	176	6.9	263	5.8
2. South West	283	11.0	408	8.9
3. Waterloo Wellington	166	6.5	270	5.9
4. Hamilton Niagara Haldimand Brant	296	11.5	630	13.8
5. Central West	117	4.6	241	5.3
6. Mississauga Halton	127	5.0	311	6.8
7. Toronto Central	178	6.9	342	7.5
8. Central	237	9.2	477	10.5
9. Central East	273	10.7	526	11.5
10. South East	115	4.5	190	4.2
11. Champlain	247	9.6	276	6.0
12. North Simcoe Muskoka	115	4.5	193	4.2
13. North East	148	5.8	293	6.4
14. North West	76	3.0	110	2.4
LHIN unknown	10	0.4	36	0.8

Data sources: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2006/07; National Ambulatory Care Reporting System (CIHI-NACRS), 2006/07; Ontario Ministry of Health and Long-Term Care, Home Care Database 2006/07–2007/08.

Inclusion criteria: All clients discharged from an acute care facility in 2006/07 with a stroke-related diagnosis (based on ICD-10 codes) who received home care services within 60 days of discharge. 'Active clients' includes those receiving home care services 90 days before the admission to acute care. 'New clients' includes those not receiving home care services 90 days before the acute stroke hospitalization.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Note: Provider-based analysis; clients with stroke may be enrolled simultaneously in more than one Community Care Access Centre and receive services from multiple sites.

**Exhibit 4.2 Support services provided to home care clients (active and new) following an acute hospitalization for stroke, in Ontario and by Local Health Integration Network, 2006/07 to 2007/08**

Site	No. of Clients with Stroke <sup>1</sup>	Nursing		Personal Support		Personal Support & Homemaker Services		Occupational Therapy		Physiotherapy	
		No. of clients <sup>1</sup>	Average no. of visits per client	No. of clients <sup>1</sup>	Average no. of visits per client	No. of clients <sup>1</sup>	Average no. of visits per client	No. of clients <sup>1</sup>	Average no. of visits per client	No. of clients <sup>1</sup>	Average no. of visits per client
<b>Ontario</b>	<b>7,130</b>	<b>1,965</b>	<b>10.1</b>	<b>687</b>	<b>24.4</b>	<b>1,903</b>	<b>25.1</b>	<b>2,615</b>	<b>2.8</b>	<b>1,812</b>	<b>3.8</b>
<b>Local Health Integration Network</b>											
1. Erie St. Clair	439	220	10.6	147	23.2	-	-	147	2.4	119	5.2
2. South West	691	230	9.4	173	19.6	95	20.8	261	2.2	167	3.3
3. Waterloo Wellington	436	75	9.3	20	28.5	125	24.3	202	2.9	102	3.8
4. Hamilton Niagara Haldimand Brant	926	201	9.6	-	-	275	22.6	391	2.2	295	3.5
5. Central West	358	83	10.6	8	18.4	110	29.0	154	3.5	98	4.6
6. Mississauga Halton	438	76	10.5	-	-	148	29.3	212	3.5	125	4.4
7. Toronto Central	520	135	10.8	-	-	214	23.9	176	3.4	110	3.7
8. Central	714	157	11.6	**	4.5	256	28.9	256	3.7	149	4.2
9. Central East	799	203	10.2	38	32.1	284	22.9	262	3.3	194	3.7
10. South East	305	90	12.6	**	27.0	116	27.2	109	2.2	80	3.2
11. Champlain	523	169	8.6	139	28.7	120	23.9	142	2.5	134	3.3
12. North Simcoe Muskoka	308	124	9.0	71	27.1	26	14.3	81	2.6	51	3.3
13. North East	441	141	10.3	84	21.1	80	26.6	141	2.0	133	3.1
14. North West	186	53	8.7	-	-	51	26.6	69	2.1	49	3.7
LHIN unknown	46	8	19.8	**	94.8	**	22.2	12	2.3	6	4.0

Site	No. of Clients with Stroke <sup>1</sup>	Speech Therapy		Social Work		Dietetics		Psychological Services		Respite Care	
		No. of clients <sup>1</sup>	Average no. of visits per client	No. of clients <sup>1</sup>	Average no. of visits per client	No. of clients <sup>1</sup>	Average no. of visits per client	No. of clients <sup>1</sup>	Average no. of visits per client	No. of clients <sup>1</sup>	Average no. of visits per client
<b>Ontario</b>	<b>7,130</b>	<b>775</b>	<b>3.0</b>	<b>212</b>	<b>2.6</b>	<b>254</b>	<b>2.5</b>	<b>35</b>	<b>3.3</b>	<b>104</b>	<b>11.3</b>
<b>Local Health Integration Network</b>											
1. Erie St. Clair	439	35	3.5	7	2.0	15	2.0	-	-	14	9.9
2. South West	691	69	2.9	24	2.2	29	2.2	-	-	29	14.0
3. Waterloo Wellington	436	41	3.3	26	2.3	28	3.2	-	-	-	-
4. Hamilton Niagara Haldimand Brant	926	109	3.2	16	2.6	41	2.5	-	-	31	9.6
5. Central West	358	42	2.9	9	3.0	12	2.9	**	4.0	**	20.0
6. Mississauga Halton	438	43	3.2	**	2.7	13	2.0	6	2.3	**	18.5
7. Toronto Central	520	65	3.1	9	2.2	12	2.7	12	2.9	-	-
8. Central	714	116	3.3	13	3.4	21	3.3	**	3.8	-	-
9. Central East	799	74	2.6	18	3.5	15	2.9	8	3.9	**	12.0
10. South East	305	26	2.2	13	2.4	16	3.2	-	-	7	7.9
11. Champlain	523	43	2.0	6	1.8	21	1.5	-	-	**	17.3
12. North Simcoe Muskoka	308	23	2.7	46	2.5	17	2.2	-	-	**	7.0
13. North East	441	73	3.2	20	2.5	7	1.9	-	-	9	9.2
14. North West	186	15	2.7	**	3.0	**	1.2	-	-	-	-
LHIN unknown	46	**	6.0	-	-	**	2.0	-	-	**	2.0

Data source: Ontario Ministry of Health and Long-Term Care, Home Care Database, 2006/07 to 2007/08.

Inclusion criteria: All clients discharged from an acute care facility in 2006/07 with a stroke-related diagnosis (based on ICD-10 codes) who received home care services within 60 days. Active clients include those receiving home care services 90 days before admission to acute care (N=2,576). New clients include those not receiving home care services 90 days before hospitalization for acute stroke (N=4,561).

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Provider-based analysis; clients with stroke may be enrolled simultaneously in more than one Community Care Access Centre and receive services from multiple sites.  
(2) Cells in which there was no reported/available data are marked with a hyphen (-).

## 5. Patient Outcomes

### Age- and Sex-adjusted Non-elective Stroke/TIA-related Readmission Rates

#### Findings:

- ▶ **Exhibit 5.1:** Following the first emergency department visit or inpatient admission for stroke/TIA, the rate of another stroke-related re-admission within 30 days increased provincially by 8% by 2006/07 relative to 2003/04. The ischemic stroke 30-day readmission rate underwent a 13% relative increase between 2003/04 and 2006/07. The TIA 30-day readmission rate increased from 7.1% in 2003/04 to 7.3% in 2006/07. District stroke centres experienced the greatest increase in 30-day stroke-related readmissions; there was a 13% relative increase between 2003/04 and 2006/07. Across the Local Health Integration Networks, the 30-day stroke-related readmission rate in 2006/07 varied from 5.1% in the Central LHIN to 9.7% in the Champlain LHIN.
- ▶ **Exhibit 5.2:** Following the first emergency department visit or inpatient admission for stroke/TIA, the rate of another stroke/TIA admission within 90 days observed a 4% relative increase between 2003/04 and 2006/07. The 90-day readmission rate for ischemic stroke in Ontario observed a 5% relative increase between 2003/04 and 2006/07. The 90-day readmission rate for TIA remained stable at 9.2%. Non-designated centres experienced the greatest increase in 90-day stroke-related readmissions, from 8.6% in 2003/04 to 9.0% in 2006/07, and in recent years have had higher rates than specialized stroke centres. Across the Local Health Integration Networks, the 90-day stroke-related readmission rate in 2006/07 varied from 6.3% in the Central LHIN to 11.4% in the Champlain LHIN.

#### Conclusions and recommendations:

There was a decrease in annual index inpatient admissions between 2003/04 and 2005/06, which may be related to an increase in readmissions within 30 and 90 days.

---

### Age- and Sex-adjusted Inhospital Mortality Rates

#### Findings:

- ▶ **Exhibit 5.3:** Between 2003/04 and 2007/08, inhospital mortality had a relative decrease of 6% for stroke/TIA, 7% for ischemic stroke, 8% for intracerebral hemorrhage and 2% for subarachnoid hemorrhage. District stroke centres experienced the greatest decrease in inhospital mortality, from 15.6% in 2003/04 to 13.5% in 2007/08. Across the Local Health Integration Networks, the inhospital mortality rate in 2007/08 varied from 11.2% in the North West LHIN to 17.5% in the South East LHIN.
- 

### Age- and Sex-adjusted 30-day Mortality Rates

#### Findings:

- ▶ **Exhibit 5.4:** Between 2003/04 and 2006/07, Ontario's 30-day mortality rate had a relative decrease of 5% for stroke/TIA, 5% for ischemic stroke and 6% for intracerebral hemorrhage. Non-designated centres experienced the greatest decline in 30-day mortality, falling from 13.0% in 2003/04 to 12.1% in 2006/07. Across the Local Health Integration Networks, 30-day mortality rates in 2006/07 varied from 10.7% in the Champlain LHIN to 14.3% in the South East LHIN.

#### Conclusions and recommendations:

Inhospital and 30-day mortality rates improved province-wide and at both designated and non-designated centres. This may reflect OSS efforts to implement best practices on a region-wide basis.

Mortality rates improved across the stroke sub-types with the exception of subarachnoid hemorrhagic strokes. Hemorrhagic stroke is associated with very high mortality rates (more than 30%). Patients with hemorrhagic stroke typically are sent to regional stroke centres, and this must be considered when examining mortality rates.

The OSN will continue to monitor 30-day mortality rates.



**Exhibit 5.1 Age- and sex-adjusted readmission rates within 30 days following a stroke/TIA, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04 to 2006/07**

Group/Site	Adjusted Readmission Rate (%)			
	2003/04	2004/05	2005/06	2006/07
<b>Ontario<sup>1</sup></b>	<b>6.4</b>	<b>6.6</b>	<b>6.8</b>	<b>6.9</b>
<b>Stroke Type</b>				
Intracerebral hemorrhage	8.7	9.0	10.0	8.6
Ischemic stroke	5.4	5.6	5.8	6.1
Subarachnoid hemorrhage	10.5	11.5	12.5	11.5
Transient ischemic attack	7.1	7.2	7.1	7.3
<b>Ontario Stroke System Region</b>				
Central East	7.1	5.5	6.7	8.0
Central South	5.8	6.3	7.0	6.0
East – Champlain	7.9	10.5	8.1	9.7
Northeast	6.9	5.7	5.9	7.3
Northwest	4.9	5.8	7.3	6.9
South East	8.5	9.9	6.4	6.3
Southwest	6.0	5.7	7.0	5.7
Toronto – North & East	5.5	5.5	6.2	5.9
Toronto – Southeast	6.0	6.1	7.1	8.1
Toronto – West	4.2	6.9	6.2	6.2
West GTA	6.6	6.1	6.1	6.2
<b>Ontario Stroke System Classification</b>				
Regional stroke centre	5.6	6.1	6.1	6.1
District stroke centre	6.1	5.8	6.5	6.9
Non-designated	6.7	7.0	7.2	7.2
<b>Local Health Integration Network</b>				
1. Erie St. Clair	5.6	5.1	7.2	5.4
2. South West	6.3	6.2	6.8	5.9
3. Waterloo Wellington	5.5	5.6	7.7	6.9
4. Hamilton Niagara Haldimand Brant	5.9	6.6	6.8	5.6
5. Central West	6.7	5.8	5.1	6.2
6. Mississauga Halton	6.6	6.3	6.5	6.2
7. Toronto Central	4.6	6.9	7.0	7.2
8. Central	6.1	4.3	5.9	5.1
9. Central East	6.9	6.3	6.4	8.5
10. South East	8.5	9.9	6.4	6.3
11. Champlain	7.9	10.5	8.1	9.7
12. North Simcoe Muskoka	6.6	5.3	6.8	8.4
13. North East	6.9	5.7	5.9	7.3
14. North West	4.9	5.8	7.3	6.9

Data sources: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), and National Ambulatory Care Reporting System (CIHI-NACRS); 2003/04–2006/07.

Inclusion criteria: All patients readmitted to an emergency department or inpatient setting of an acute care hospital in Ontario with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack on both admissions within three months of the initial stroke event in each year.

Exclusion criteria: Patients with an elective admission or scheduled emergency department visits.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Notes: (1) No washout periods were applied; e.g., if a patient's first hospitalization for stroke had a discharge date of March 31, 2005 (FY 2004/05), followed by another hospitalization for stroke/TIA on April 1, 2005 (FY 2005/06), the April 1 hospitalization would be considered the first hospitalization in 2005/06 and not a readmission related to the hospitalization in 2004/05.

(2) Facility-based analysis (i.e., the location of the facility was used to report regional performance).

**Exhibit 5.2 Age- and sex-adjusted readmission rates within 90 days following stroke/TIA, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04 to 2006/07**

Group/Site	Adjusted Readmission Rate (%)			
	2003/04	2004/05	2005/06	2006/07
<b>Ontario<sup>1</sup></b>	<b>8.3</b>	<b>8.6</b>	<b>8.7</b>	<b>8.6</b>
<b>Stroke Type</b>				
Intracerebral hemorrhage	10.5	11.1	11.9	9.8
Ischemic stroke	7.4	7.8	7.6	7.8
Subarachnoid hemorrhage	11.9	13.3	14.1	13.2
Transient ischemic attack	9.2	9.2	9.2	9.2
<b>Ontario Stroke System Region</b>				
Central East	9.2	7.5	8.5	9.7
Central South	8.0	8.3	9.2	7.5
East – Champlain	9.4	12.5	10.3	11.4
Northeast	8.9	7.5	7.8	9.7
Northwest	7.2	9.7	9.7	8.7
South East	9.9	12.4	7.8	8.3
Southwest	8.0	7.8	9.2	7.6
Toronto – North & East	7.2	7.7	7.6	7.0
Toronto – Southeast	7.7	8.0	8.8	9.8
Toronto – West	6.4	8.7	7.9	8.0
West GTA	8.8	7.8	7.6	7.8
<b>Ontario Stroke System Classification</b>				
Regional stroke centre	7.6	8.2	7.8	7.8
District stroke centre	8.5	8.0	8.8	8.7
Non-designated	8.6	9.0	9.1	9.0
<b>Local Health Integration Network</b>				
1. Erie St. Clair	8.4	7.7	9.5	7.8
2. South West	7.7	8.0	9.0	7.6
3. Waterloo Wellington	7.6	7.6	9.8	8.8
4. Hamilton Niagara Haldimand Brant	8.1	8.6	9.0	7.0
5. Central West	9.0	7.3	6.7	8.5
6. Mississauga Halton	8.7	8.1	8.1	7.5
7. Toronto Central	6.4	8.6	8.6	8.7
8. Central	8.2	6.4	7.4	6.3
9. Central East	8.8	8.4	8.2	10.5
10. South East	9.9	12.4	7.8	8.3
11. Champlain	9.4	12.5	10.3	11.4
12. North Simcoe Muskoka	9.2	7.8	8.8	9.8
13. North East	8.9	7.5	7.8	9.7
14. North West	7.2	9.7	9.7	8.7

Data sources: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), and National Ambulatory Care Reporting System (CIHI-NACRS); 2003/04–2006/07.

Inclusion criteria: All patients readmitted to an emergency department or inpatient setting of an acute care hospital in Ontario with a diagnosis of stroke (ischemic or hemorrhagic) or TIA on both admissions within three months of initial stroke event starting in April 2003.

Exclusion criteria: Patients with an elective admission or scheduled emergency department visits.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Notes: (1) No washout periods were applied; e.g., if a patient's first hospitalization for stroke had a discharge date of March 31, 2005 (FY 2004/05), followed by another hospitalization for stroke/TIA on April 1, 2005 (FY 2005/06), the April 1 hospitalization would be considered the first hospitalization in 2005/06 and not a readmission related to the hospitalization in 2004/05.

(2) Facility-based analysis (i.e., the location of the facility was used to report regional performance).

**Exhibit 5.3 Age- and sex-adjusted in-hospital mortality rates following stroke/TIA, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04 to 2007/08**

Group/Site	Adjusted <sup>1</sup> In-hospital Mortality Rate (%)				
	2003/04	2004/05	2005/06	2006/07	2007/08
<b>Ontario<sup>2</sup></b>	<b>15.8</b>	<b>14.6</b>	<b>14.3</b>	<b>15.0</b>	<b>14.8</b>
<b>Stroke Type</b>					
Intracerebral hemorrhage	40.8	41.0	37.4	36.6	37.6
Ischemic stroke	15.1	13.7	13.7	14.4	14.0
Subarachnoid hemorrhage	39.9	36.9	37.5	38.5	39.2
Transient ischemic attack	0.4	0.3	0.2	0.4	0.3
<b>Ontario Stroke System Region</b>					
Central East	15.1	14.3	13.7	14.3	14.3
Central South	16.4	14.0	14.6	15.6	14.9
East – Champlain	17.0	17.6	13.5	15.0	15.8
Northeast	14.5	12.7	14.9	13.5	13.3
Northwest	17.6	10.3	10.1	9.5	11.2
South East	18.6	15.4	18.5	19.4	17.5
Southwest	14.0	13.1	13.8	14.1	14.6
Toronto – North & East	18.4	15.9	16.7	14.2	14.0
Toronto – Southeast	15.3	14.3	13.7	16.9	17.0
Toronto – West	18.6	16.5	14.7	18.7	17.0
West GTA	13.7	15.3	12.8	13.7	13.0
<b>Ontario Stroke System Classification</b>					
Regional stroke centre	16.8	15.7	15.7	15.5	15.7
District stroke centre	15.6	13.3	13.7	13.9	13.5
Non-designated	15.5	14.4	13.7	15.0	14.7
<b>Local Health Integration Network</b>					
1. Erie St. Clair	12.0	12.3	13.6	11.6	14.1
2. South West	15.5	13.7	14.0	15.8	15.0
3. Waterloo Wellington	17.4	16.1	13.0	17.2	16.4
4. Hamilton Niagara Haldimand Brant	16.0	13.2	15.1	15.0	14.4
5. Central West	12.7	11.9	8.4	9.9	10.3
6. Mississauga Halton	14.2	16.9	14.7	15.5	14.5
7. Toronto Central	16.4	15.7	14.8	16.7	16.7
8. Central	19.2	16.7	15.6	16.2	14.4
9. Central East	16.6	14.8	15.5	14.6	16.1
10. South East	18.6	15.4	18.5	19.4	17.5
11. Champlain	17.0	17.6	13.5	15.0	15.8
12. North Simcoe Muskoka	12.0	11.9	10.3	14.2	11.7
13. North East	16.6	12.7	14.9	13.5	13.3
14. North West	12.7	10.3	10.1	9.5	11.2

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04-2007/08.

Inclusion criteria: All patients who died as inpatients in an acute care hospital in Ontario with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack starting in April 2003.

<sup>1</sup> All rates were statistically adjusted for age and sex; rates were not adjusted for stroke severity or comorbidities.

<sup>2</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Note: Facility-based analysis (i.e., the location of the facility was used to report regional performance).

**Exhibit 5.4 Age- and sex-adjusted mortality rates at 30 days following stroke/TIA, in Ontario and by stroke type, OSS region, OSS classification and Local Health Integration Network, 2003/04 to 2006/07**

Group/Site	Adjusted <sup>1</sup> Mortality Rate (%)			
	2003/04	2004/05	2005/06	2006/07
<b>Ontario<sup>2</sup></b>	<b>13.4</b>	<b>12.4</b>	<b>12.6</b>	<b>12.7</b>
<b>Stroke Type</b>				
Intracerebral hemorrhage	42.5	42.9	41.0	39.8
Ischemic stroke	14.9	14.1	14.2	14.1
Subarachnoid hemorrhage	41.1	39.9	42.3	43.4
Transient ischemic attack	1.3	1.1	1.1	1.1
<b>Ontario Stroke System Region</b>				
Central East	12.6	12.0	12.7	12.4
Central South	13.6	12.4	13.2	13.2
East – Champlain	12.8	13.1	10.6	10.7
Northeast	12.6	12.1	13.1	12.1
Northwest	13.1	11.5	10.2	11.3
South East	14.6	11.4	14.0	14.3
Southwest	13.8	12.3	12.6	12.4
Toronto – North & East	13.7	12.5	14.4	12.1
Toronto – Southeast	13.7	12.4	12.3	14.1
Toronto – West	14.6	12.8	12.7	14.7
West GTA	12.6	13.3	11.7	13.4
<b>Ontario Stroke System Classification</b>				
Regional stroke centre	14.2	13.9	14.3	13.8
District stroke centre	13.8	12.8	13.6	13.2
Non-designated	13.0	11.7	11.6	12.1
<b>Local Health Integration Network</b>				
1. Erie St. Clair	12.3	11.9	12.2	11.3
2. South West	15.0	12.6	12.8	13.1
3. Waterloo Wellington	13.6	13.1	12.2	13.8
4. Hamilton Niagara Haldimand Brant	13.6	12.1	13.5	13.0
5. Central West	14.1	13.3	12.0	13.2
6. Mississauga Halton	11.7	13.2	11.6	13.6
7. Toronto Central	13.2	13.2	13.1	13.8
8. Central	14.9	12.5	13.8	13.3
9. Central East	13.8	12.0	12.8	12.4
10. South East	14.6	11.6	13.9	14.3
11. Champlain	12.7	13.0	10.6	10.7
12. North Simcoe Muskoka	10.1	10.9	12.0	12.6
13. North East	12.6	12.1	13.1	12.1
14. North West	13.1	11.5	10.2	11.3

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), and National Ambulatory Care Reporting System (CIHI-NACRS); Ontario Ministry of Health and Long-Term Care, Registered Persons Database (RPDB); 2003/04–2006/07.

Inclusion criteria: All patients who died either in hospital or following discharge within 30 days of admission to an emergency department or inpatient setting of an acute care hospital with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack, starting in April 2003.

<sup>1</sup> All rates were statistically adjusted for age and sex; rates were not adjusted for stroke severity or comorbidities.

<sup>2</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Notes: (1) Facility-based analysis (i.e., the location of the facility was used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

## List of Exhibits

### Paediatric Stroke

#### 6. Acute Inpatient Care

**Exhibit 6.1.1** Incidence of stroke per 100,000 children aged 0 to 18 years, by stroke type, ICD cohort (2004/05 to 2008/09) and validated cohort (2004 to 2008), in Ontario

**Exhibit 6.1.2** Incidence of stroke per 100,000 children aged 0 to 18 years in the validated cohort, by stroke type, in Ontario, 2004 to 2008

**Exhibit 6.2.1** Length of stay in hospital for paediatric stroke patients in the ICD cohort, in Ontario, 2004/05 to 2008/09

**Exhibit 6.2.2** Length of stay in hospital for paediatric stroke patients, by ICD cohort (2004/05 to 2008/09) and validated cohort (2004 to 2008), and by age group, in Ontario

**Exhibit 6.3** Discharge destination of paediatric stroke patients in the validated cohort following acute hospitalization, by absence or presence of confounding conditions, in Ontario, 2004 to 2008

#### 7. Patient Outcomes

**Exhibit 7.1.1** Hospital readmission rates within 365 days of discharge for paediatric stroke in the ICD cohort, by stroke type, age and year, in Ontario, 2004/05 to 2008/09

**Exhibit 7.1.2** Hospital readmission rates within 365 days of discharge for paediatric stroke in the validated cohort, by stroke type, age and year, in Ontario, 2004 to 2008

**Exhibit 7.1.3** Hospital readmission rates within 365 days of discharge for paediatric stroke in the ICD cohort (2004/05 to 2008/09) and validated cohort (2004 to 2008), by stroke type, age and year, in Ontario

**Exhibit 7.2.1** Neurological outcome within five years of stroke occurrence of paediatric patients in the validated cohort, by stroke type, in Ontario, 2004 to 2008

**Exhibit 7.2.2** Neurological outcome within five years of stroke occurrence of paediatric patients in the validated cohort, by stroke type and absence or presence of confounding conditions, in Ontario, 2004 to 2008

**Exhibit 7.3** Mortality rates within 365 days of admission date following paediatric stroke, by ICD cohort (2004/05 to 2008/09) and validated cohort (2004 to 2008), and by age group, in Ontario

## Findings and Exhibits—Paediatric Stroke

## Findings and Exhibits—Paediatric Stroke

### 6. Acute Inpatient Care

#### Background and Purpose

Stroke is a significant childhood disease with a reported incidence ranging from 2 to 13 per 100,000 people.<sup>7,8</sup> While adult stroke care in Ontario has received funding to develop an organized, integrated system in the past decade, no such funding has been made available for childhood stroke. Incidence, indicators of care and outcomes are not known for childhood stroke in Ontario. Also, the adequacy of International Classification of Diseases (ICD) code searches for identifying childhood stroke is not known. The following information is based on a 2009 report<sup>9</sup> to the Ontario Ministry of Health and Long-Term Care that sought to determine these parameters for childhood stroke.

#### Method

A large population-based study of children diagnosed with arterial ischemic stroke (AIS) or cerebral sinovenous thrombosis (CSVT) from birth to 18 years of age in Ontario from 2004 to 2008 was conducted. Two cohorts of children were assembled, as follows:

**ICD cohort:** includes children identified through a search of administrative/hospital databases at the Institute for Clinical Evaluative Sciences, using ICD-10 codes for adult stroke; and

**Validated cohort:** a consent-based<sup>10</sup> paediatric stroke registry of 285 individuals (214 with AIS and 118 with CSVT), of which 210 were linked successfully to ICES databases. Within the validated cohort of the paediatric registry, 95 patients matched the ICD cohort on health card number. These patients were identified by referral and an expanded list of ICD-10 stroke codes (see Appendix A), followed by validation performed on-site at the five acute care tertiary paediatric hospitals in Ontario.<sup>11</sup> All identified charts were reviewed to validate the diagnosis. Paediatric registry patients in the validated cohort were linked to the CIHI-DAD and NACRS databases. Outcomes were stratified by stroke type, age group and presence or absence of other medical confounding conditions. Paediatric stroke incidence, inpatient length of stay, discharge disposition, readmission rates, long-term neurological and one-year mortality were reported for the validated cohort.

---

<sup>7</sup> De Veber G. Stroke and the child's brain: an overview of epidemiology, syndromes and risk factors. *Curr Opin Neurol.* 2002; 15(2):133–8.

<sup>8</sup> Fullerton HJ, Wu YW, Zhao S, Johnston SC. Risk of stroke in children: ethnic and gender disparities. *Neurology.* 2003; 61(2):189–94.

<sup>9</sup> deVeber G, Lindsay P, Zak M, Yau I, Pontigon A, Humphreys P, Jardine L, Chan A. Pediatric Stroke ICES Linkage Study (MOH Grant 06352). Unpublished project report, October 21, 2009.

<sup>10</sup> Consent was waived in the case of deceased patients.

<sup>11</sup> Participating hospitals included the Hospital for Sick Children in Toronto, McMaster Children's Hospital in Hamilton, Children's Hospital of Western Ontario in London, and Children's Hospital of Eastern Ontario in Ottawa. Inability to acquire consent from families with acute stroke in children necessitated opting out by Kingston General Hospital.

## Results

**Exhibit 6.1.1:** Incidence of stroke per 100,000 children aged 0 to 18 years, by stroke type, ICD cohort (2004/05 to 2008/09) and validated cohort (2004 to 2008), in Ontario

**Exhibit 6.1.2:** Incidence of stroke per 100,000 children aged 0 to 18 years in the validated cohort, by stroke type, in Ontario, 2004 to 2008

### Findings:

- ▶ Ischemic stroke incidence rates for children aged 0 to 18 years were higher in the validated cohort (a mean ischemic incidence rate of 2.25 per 100,000 per year compared to the ICD cohort mean ischemic incidence rate of 1.38 per 100,000 per year). The same pattern was observed by stroke sub-type mean incidence rate per 100,000 per year as follows: 1.45 for AIS and 0.80 for CSVT in the validated cohort, compared to 1.02 for AIS, 0.36 for CSVT and 1.38 for hemorrhagic stroke in the ICD cohort. There were no hemorrhagic stroke cases in the validated cohort over the five years.

### Conclusions and Recommendations:

The combined estimated stroke rate is approximately 5 per 100,000 children per year, or over 200 children annually in Ontario.

Paediatric stroke should be identified by broader sets of ICD codes than those used for adult ICD code searches, and diagnoses should be validated.

Rates of perinatal stroke appear to be largely underestimated compared to published rates. ICD code searches should be expanded for paediatric stroke patients by adding specific codes for perinatal stroke, additional hospitals to capture all neonatal intensive care beds in Ontario, and ED visits.

A long-term, outcome-validated cohort study of paediatric hemorrhagic stroke in Ontario is needed.

---

**Exhibit 6.2.1:** Length of stay in hospital for paediatric stroke patients, in the ICD cohort, in Ontario, 2004/05 to 2008/09

### Findings:

- ▶ In the ICD cohort, the average length of hospital stay was 11.26 days for AIS, 10.84 days for CSVT, and 16.23 days for hemorrhagic stroke. Length of stay remained stable over the five-year period for all stroke types. The <1 year age group and the 1–18 year age group had similar inpatient lengths of stay (data not shown).
- 

**Exhibit 6.2.2:** Length of stay in hospital for paediatric stroke patients, by ICD cohort (2004/05 to 2008/09) and validated cohort (2004 to 2008) and by age group, in Ontario

### Findings:

- ▶ The length of stay (in days) increased two- to three-fold more in the validated cohort than in the ICD cohort.
- ▶ In the validated cohort, the length of stay for the <1 year age group showed a marked increase compared to the 1–18 year age group. In addition, the length of stay decreased over time among the <1 year stroke patients, but among the older children, length of stay remained stable. There were no observed differences between stroke subtypes average length of stay (data not shown).

### Conclusions and Recommendations:

The wide variation in hospital length of stay (range 10–40 days) reflects the difficulty in treating paediatric stroke patients. Unlike in adults, stroke in children is caused by multiple heterogeneous and overlapping risk factors.

The extrapolation of effective treatments from evidence-based research in adults to children is limited due to significant differences between childhood and adult stroke. Age-appropriate clinical trials are urgently needed.



**Exhibit 6.3:** Discharge destination of paediatric stroke patients in the validated cohort following acute hospitalization, by absence or presence of confounding conditions, in Ontario, 2004 to 2008

**Findings:**

- ▶ In the ICD cohort, the majority of patients were discharged to home. Poor outcome,<sup>12</sup> defined as death or transfer to a facility (rehabilitation, long-term, palliative care/hospice), was highest in the hemorrhagic stroke patient group (data not shown).
- ▶ In the validated cohort, 92.9% of patients without confounding conditions and 88.2% of those with confounding conditions were discharged to home (approximately half were discharged-to-home with services). Using the validated cohort, findings show a higher proportion of discharged-home disposition among patients without confounding conditions, and a higher proportion of death among patients with confounding conditions.

**Conclusions and Recommendations:**

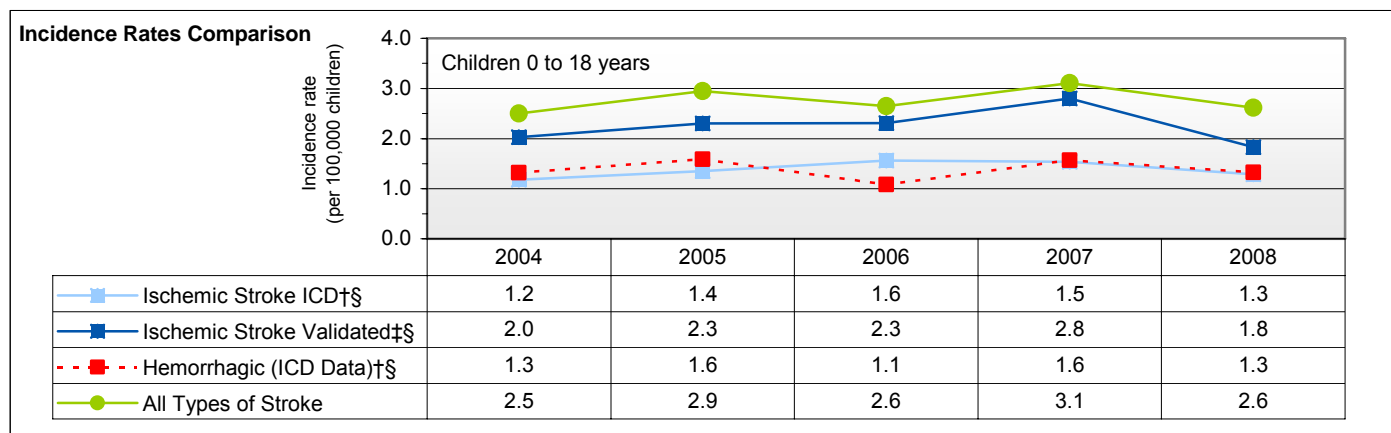
Post-discharge care, including rehabilitation and stroke recurrence rates in paediatric stroke, were unobtainable. Databases and data variable linkages should be expanded to include long-term outcomes and rehabilitation.

---

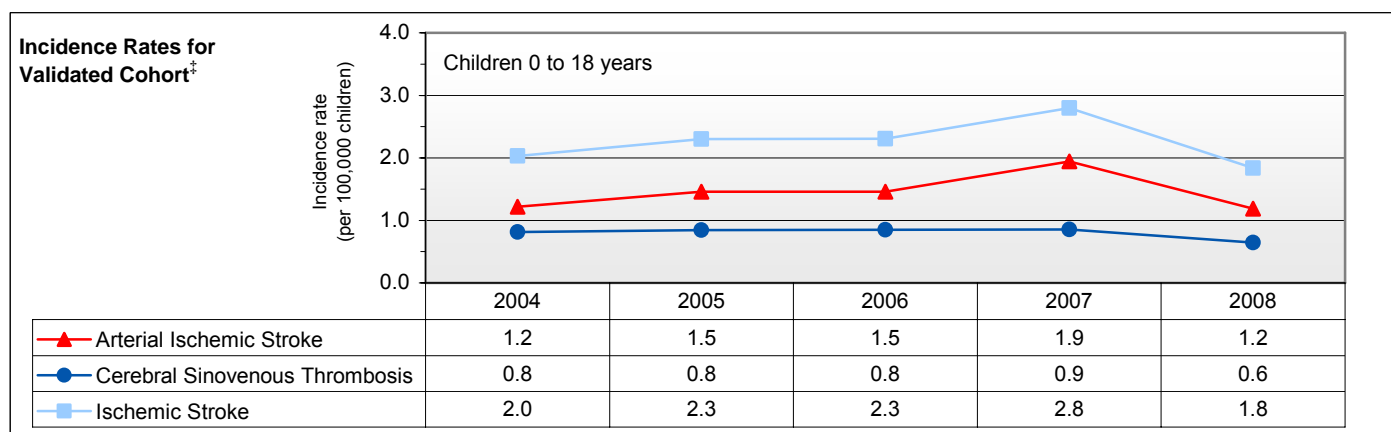
---

<sup>12</sup> Stroke patients with mild or moderate deficits receive rehabilitation at home or in outpatient clinics. Stroke patients with severe deficits post-discharge are transferred to rehabilitation facilities after acute care and thus are defined as having a poor outcome.

**Exhibit 6.1.1 Incidence of stroke per 100,000 children aged 0 to 18 years, by stroke type, ICD cohort (2004/05 to 2008/09) and validated cohort (2004 to 2008), in Ontario**



**Exhibit 6.1.2 Incidence of stroke per 100,000 children aged 0 to 18 years in the validated cohort, by stroke type, in Ontario, 2004 to 2008**



Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2004/05–2008/09; and Canadian Paediatric Ischemic Stroke Registry (CPISR), 2004–2008.

Inclusion criteria: All infants (for AIS only, premature infants <36 weeks, gestation excluded) and children aged term birth to 18 years after January 2004 admitted to an acute care hospital in Ontario with the diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack.

1) Arterial Ischemic Infarct: Both clinical and radiological criteria must be present.

**Clinical criteria:** focal neurological deficit of acute onset lasting greater than 24 hours (includes 'presumed perinatal' infarcts diagnosed in later infancy). **Radiological criteria:** a) CT and/or MRI diagnosis of arterial ischemic infarct, and b) hemorrhagic infarction. **Exceptions:** a) also include patient if clinical deficit ≤24 hours, but MRI shows infarct in location consistent with neurological syndrome, b) for neonates, seizures or lethargy alone may be the only symptoms, and c) prolonged seizure with post-ictal Todd's paresis. **Radiological criteria:** diffuse primary cerebral hemorrhage, hypoxic ischemic lesions, periventricular leukomalacia, primary cerebral contusion.

2) Sinovenous Thrombosis: Both clinical and radiological criteria must be present.

**Clinical criteria (clinical criteria for sinovenous thrombosis are necessarily non-specific consistent with known clinical presentation in this disorder):** any transient neurological dysfunction including headache, seizure, decreased level of consciousness, focal neurological signs consistent with cerebral sinovenous thrombosis. **Radiological criteria:** thrombosis of cerebral veins or venous sinuses, "sinovenous thrombosis" seen on MRI scan, MR angiography and/or conventional cerebral angiogram.

Exclusion criteria: Invalid ICES Key Number (IKN)

† ICD cohort based on unique patients only (i.e., does not include multiple patient-visits).

‡ Validated cohort based on unique patients only (i.e., does not include multiple patient-visits).

§ ICD and validated cohorts: There is 45% patient overlap [95 of 210 patients in the paediatric registry validated cohort match the ICD cohort on IKN (scrambled health card number)].

Notes: (1) Ischemic stroke = Arterial Ischemic Stroke (AIS) and Cerebral Sinovenous Thrombosis (CSV)

(2) ICD cohort: Children identified by International Classification of Disease (ICD) stroke code search of ICES databases at hospitals in Ontario based on the same search strategy as for adult stroke ICES linkage studies.

(3) Validated cohort: Children identified by referral or ICD stroke code searches utilizing wider range of stroke codes than adult studies (Appendix E), on-site at acute care tertiary paediatric hospitals in Ontario.

(4) ICD cohort is a population-based analysis (i.e., the patient's residence is used to report regional performance).

Exhibit 6.2.1 Length of stay in hospital for paediatric stroke patients in the ICD cohort, in Ontario, 2004/05 to 2008/09

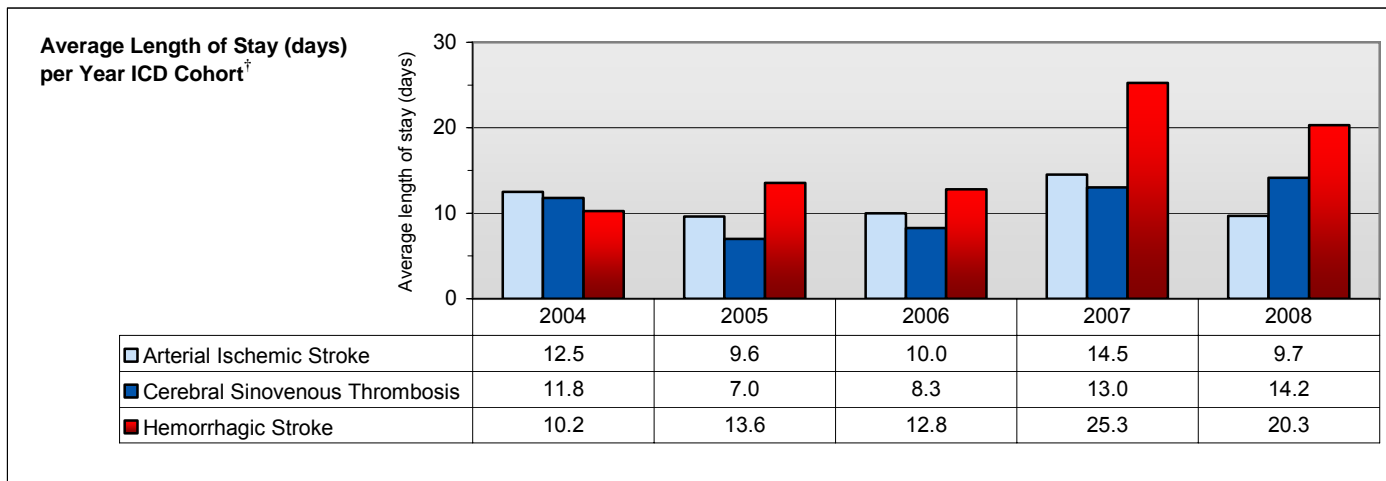
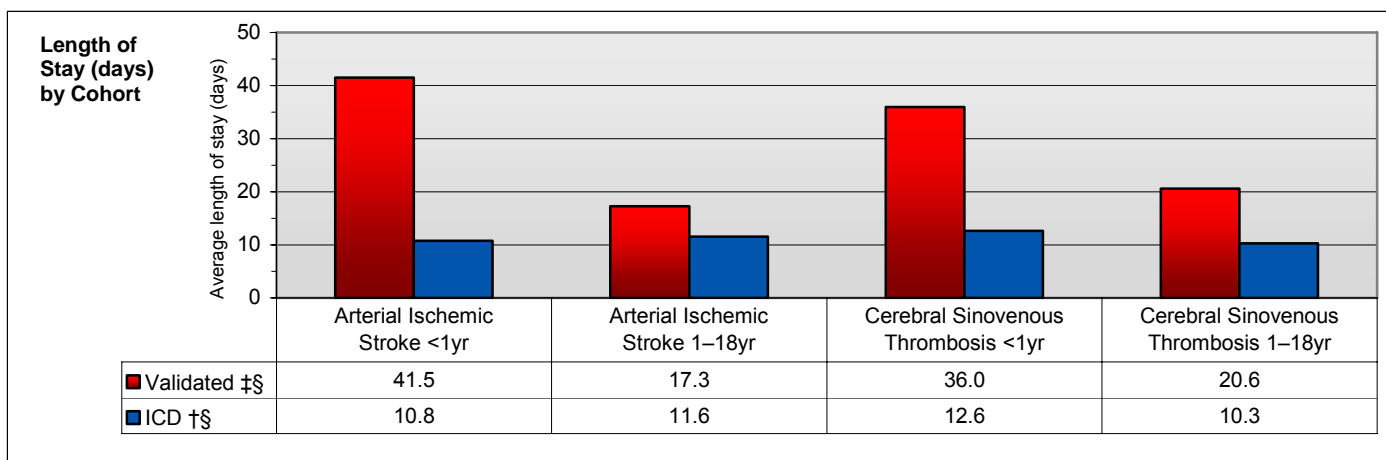


Exhibit 6.2.2: Length of stay in hospital for paediatric stroke patients, by ICD cohort (2004/05 to 2008/09) and validated cohort (2004 to 2008) and by age group, in Ontario



Data sources:

Exhibit 6.2.1—Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2004/05–2008/09.

Exhibit 6.2.2—Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2004/05–2008/09; and Canadian Paediatric Ischemic Stroke Registry (CPISR), 2004–2008.

Inclusion criteria: All infants (for AIS only, premature infants <36 weeks, gestation excluded) and children aged term birth to 18 years after January 2004 admitted to an acute care hospital in Ontario for stroke management.

1) Arterial Ischemic Infarct: Both clinical and radiological criteria must be present.

**Clinical criteria:** focal neurological deficit of acute onset lasting greater than 24 hours (includes 'presumed perinatal' infarcts diagnosed in later infancy). **Radiological criteria:** a) CT and/or MRI diagnosis of arterial ischemic infarct, and b) hemorrhagic infarction. **Exceptions:** a) also include patient if clinical deficit ≤24 hours, but MRI shows infarct in location consistent with neurological syndrome, b) for neonates, seizures or lethargy alone may be the only symptoms, and c) prolonged seizure with post-ictal Todd's paresis. **Radiological criteria:** diffuse primary cerebral hemorrhage, hypoxic ischemic lesions, periventricular leukomalacia, primary cerebral contusion.

2) Sinovenous Thrombosis: Both clinical and radiological criteria must be present.

**Clinical criteria (clinical criteria for sinovenous thrombosis are necessarily non-specific consistent with known clinical presentation in this disorder):** any transient neurological dysfunction including headache, seizure, decreased level of consciousness, focal neurological signs consistent with cerebral sinovenous thrombosis. **Radiological criteria:** thrombosis of cerebral veins or venous sinuses, "sinovenous thrombosis" seen on MRI scan, MR angiography and/or conventional cerebral angiogram.

Exclusion criteria: Invalid ICES Key Number (IKN)

† ICD cohort based on unique patients only (i.e., does not include multiple patient-visits).

‡ Validated cohort based on unique patients only (i.e., does not include multiple patient-visits).

§ ICD and validated cohorts: There is 45% patient overlap [95 of 210 patients in the paediatric registry validated cohort match the ICD cohort on IKN (scrambled health card number)].

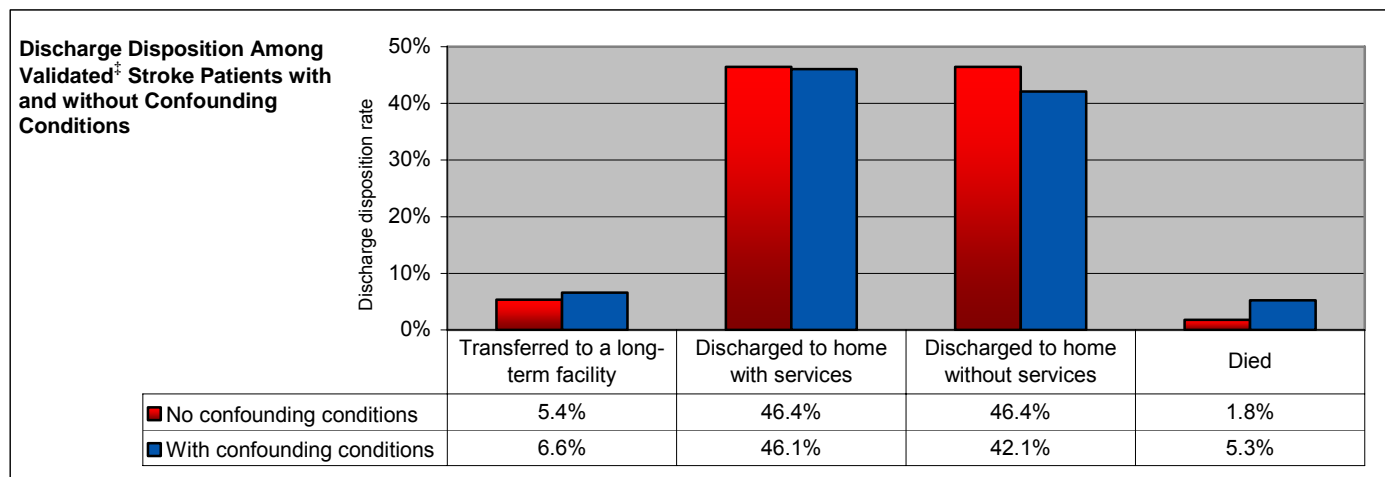
Notes: (1) Ischemic stroke = Arterial Ischemic Stroke (AIS) and Cerebral Sinovenous Thrombosis (CSV T)

(2) ICD cohort: Children identified by International Classification of Disease (ICD) stroke code search of ICES databases at hospitals in Ontario based on the same search strategy as for adult stroke ICES linkage studies.

(3) Validated cohort: Children identified by referral or ICD stroke code searches utilizing wider range of stroke codes than adult studies (Appendix E), on-site at acute care tertiary paediatric hospitals in Ontario.

(4) The ICD cohort is a population-based analysis (i.e., the patient's residence is used to report regional performance).

**Exhibit 6.3: Discharge destination of paediatric stroke patients following acute hospitalization in the validated cohort, by absence or presence of confounding conditions, in Ontario, 2004 to 2008**



Data sources: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2004/05–2008/09; and Canadian Paediatric Ischemic Stroke Registry (CPIISR), 2004–2008.

Inclusion criteria: All infants (for AIS only, premature infants <36 weeks, gestation excluded) and children aged term birth to 18 years after January 2004 admitted to an acute care hospital in Ontario with the diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack.

1) Arterial Ischemic Infarct: Both clinical and radiological criteria must be present.

**Clinical criteria:** focal neurological deficit of acute onset lasting greater than 24 hours (includes 'presumed perinatal' infarcts diagnosed in later infancy). **Radiological criteria:** a) CT and/or MRI diagnosis of arterial ischemic infarct, and b) hemorrhagic infarction. **Exceptions:** a) also include patient if clinical deficit  $\leq 24$  hours, but MRI shows infarct in location consistent with neurological syndrome, b) for neonates, seizures or lethargy alone may be the only symptoms, and c) prolonged seizure with post-ictal Todd's paresis. **Radiological criteria:** diffuse primary cerebral hemorrhage, hypoxic ischemic lesions, periventricular leukomalacia, primary cerebral contusion.

2) Sinovenous Thrombosis: Both clinical and radiological criteria must be present.

**Clinical criteria (clinical criteria for sinovenous thrombosis are necessarily non-specific consistent with known clinical presentation in this disorder):** any transient neurological dysfunction including headache, seizure, decreased level of consciousness, focal neurological signs consistent with cerebral sinovenous thrombosis. **Radiological criteria:** thrombosis of cerebral veins or venous sinuses, "sinovenous thrombosis" seen on MRI scan, MR angiography and/or conventional cerebral angiogram.

Exclusion criteria: Invalid ICES Key Number (IKN)

<sup>‡</sup> Validated cohort based on unique patients only (i.e., does not include multiple patient-visits).

Notes: (1) Confounding conditions include cardiac, cancer, major infection of the head and neck, any tumor or major pathology of the head and neck, sickle cell disease, Immunologic disorder with the presence of 4/11 criteria for SLE, and major genetic, renal, endocrine or lung disease causing systemic manifestations.

(2) Validated cohort: Children identified by referral or ICD stroke code searches utilizing wider range of stroke codes than adult studies (Appendix E), on-site at acute care tertiary paediatric hospitals in Ontario.

## 7. Patient Outcomes

**Exhibit 7.1.1:** Hospital readmission rates within 365 days of paediatric stroke for patients in the ICD cohort, by stroke type, age and year, in Ontario, 2004/05 to 2008/09

**Findings:**

- ▶ Over the five-year period, no readmissions were observed within a year of discharge except in 2008/09 where 27% of CSVT-diagnosed patients aged 1–18 years were readmitted (data not shown). In the ICD cohort, average readmission rates were higher for the 1–18 year age group compared to the <1 year age group (AIS: 2.6% vs. 11.3%; hemorrhagic stroke: 7.3% vs. 8.5%). In addition, 58% of AIS readmissions and 59% of hemorrhagic readmissions occurred within 90 days of the discharge date.

---

**Exhibit 7.1.2:** Hospital readmission rates within 365 days of discharge date for paediatric stroke patients in the validated cohort, by stroke type, age group and year, in Ontario, 2004 to 2008

**Findings:**

- ▶ Six of nine AIS readmissions (67%) occurred within 90 days of the discharge date. There were no readmissions for CSVT patients in the validated cohort.

---

**Exhibit 7.1.3:** Hospital readmission rates within 365 days of discharge date of paediatric stroke, by ICD cohort (2004/05 to 2008/09) and validated cohort (2004 to 2008), and by stroke type, age group and year, in Ontario

**Findings:**

- ▶ Similar trends were seen in readmission rates for the ICD and validated cohorts. Average readmission rates for patients with AIS were higher for the 1–18 year age group than for the >1 year age group. There was significant variation in readmission rates per year, ranging from 0–20%.

**Conclusions and Recommendations:**

Readmission rates of approximately 15% (half within 90 days of the index event) for children with stroke indicate that the burden of illness is substantial in the first year, and recurrent strokes are a major untreated problem.

**Exhibit 7.2.1:** Neurological outcome within five years of stroke occurrence of paediatric patients in the validated cohort, by stroke type, in Ontario, 2004 to 2008

**Findings:**

- ▶ From the validated cohort, 285 children (194 with AIS and 91 with CSVT) were seen for follow-up (defined as more than 28 days post-discharge) within the five-year time frame (2004 to 2008) with an average of 57 patients seen per year (68% of them with AIS).
  - ▶ Within five years of stroke occurrence, approximately 60% of AIS patients in the validated cohort had neurological deficits. The proportion of neurological deficit outcomes for AIS patients was twice that of CSVT patients. In the validated cohort, there was a higher proportion of deaths within five years for AIS patients compared to CSVT patients.
  - ▶ For AIS patients, the mean interval from date of event to follow-up was 3.65 years (CI 3.16, 4.14; range 32 days to 14 years). For CSVT patients, the mean interval from date of event to follow-up was 2.17 years (CI 1.63, 2.71; range 31 days to 13 years), (data not shown).
- 

**Exhibit 7.2.2:** Neurological outcome within five years of stroke occurrence of paediatric patients in the validated cohort, by stroke type and confounding conditions, in Ontario, 2004 to 2008

**Findings:**

- ▶ Both AIS and CSVT had similar proportions of patients with neurological deficits in groups with and without confounding conditions. There was a slight difference in proportions of death between the groups. There were more deaths in the AIS sub-type than the CSVT sub-type and more deaths in patients with confounding conditions than in patients without. Consequently, the AIS-without-confounding-conditions group had the highest mortality rate (4.2%).

**Conclusions and Recommendations:**

Patients with confounding conditions had longer hospital stays and higher mortality rates. However, the two groups had identical proportions of neurological deficit outcomes (50%) highlighting the large stroke-specific burden of illness for childhood stroke. The current methodology should be maintained for future linkage studies of childhood stroke, dividing stroke cohorts by the presence or absence of confounding conditions, for all stroke sub-types.

---

**Exhibit 7.3:** Mortality rates within 365 days of admission date following paediatric stroke, by ICD cohort (2004/05 to 2008/09) and validated cohort (2004 to 2008), and by age group, in Ontario

**Findings:**

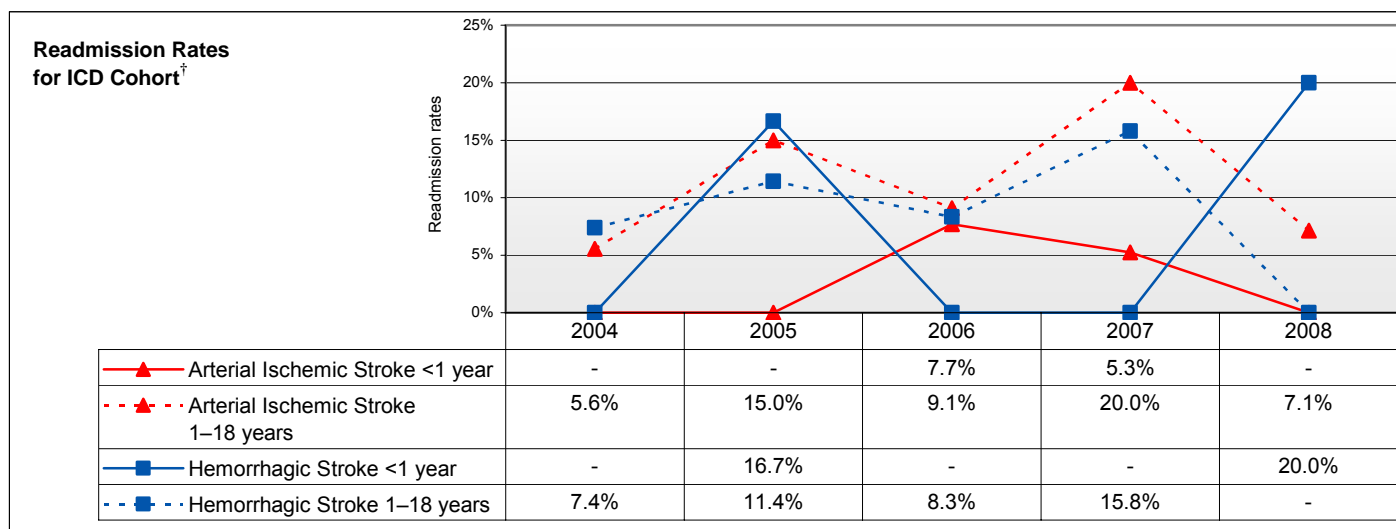
- ▶ Overall mortality rates for ischemic patients were higher in the validated cohort compared to the ICD cohort (5.7% vs. 2.0%). In addition, 50% of patients (two of four) in the ICD cohort and 17% of patients (two of 12) in the validated cohort died within seven days of admission. Among patients in the ICD cohort, the overall mortality rate for hemorrhagic stroke was higher than for ischemic stroke (9.4% vs. 2.0%).

**Conclusions and Recommendations:**

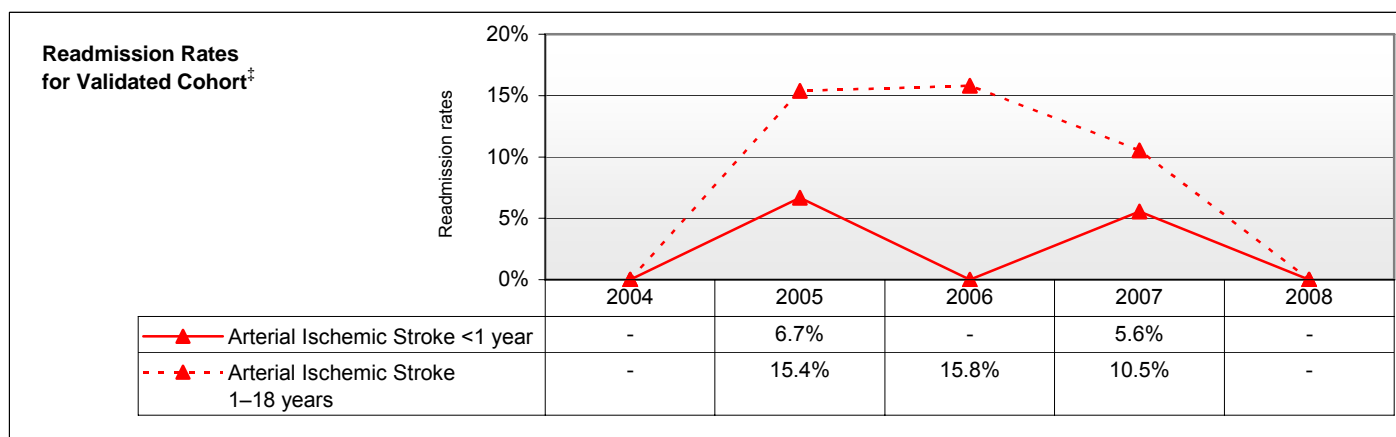
As expected, there was a higher mortality rate for hemorrhagic stroke compared to ischemic stroke in children. Paediatric hemorrhagic stroke emerged as an important sub-type of childhood stroke with an incidence rate identical to ischemic stroke. A long-term, outcome-validated cohort study of paediatric hemorrhagic stroke in Ontario is needed.

The validated ischemic stroke mortality rate of 5.7% significantly indicates that children are more likely than adults to survive acute stroke. As a consequence, the long-term impact of children's neurological deficits and rehabilitation and their lost potential will take effect over many more decades than for adult survivors.

**Exhibit 7.1.1 Hospital readmission rates within 365 days of discharge for paediatric stroke in the ICD cohort, by stroke type, age and year, in Ontario, 2004/05 to 2008/09**



**Exhibit 7.1.2 Hospital readmission rates within 365 days of discharge for paediatric stroke in the validated cohort, by stroke type, age and year, in Ontario, 2004 to 2008**



Data sources: Exhibit 7.1.1—Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2004/05–2008/09. Exhibit 7.1.2—Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2004/05–2008/09; and Canadian Paediatric Ischemic Stroke Registry (CPIISR), 2004–2008.

Inclusion criteria: All infants (for AIS only, premature infants <36 weeks, gestation excluded) and children aged term birth to 18 years readmitted to an emergency department or inpatient setting in an acute care hospital in Ontario with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack within three months of initial stroke event starting in January 2004.

1) Arterial Ischemic Infarct: Both clinical and radiological criteria must be present.

**Clinical criteria:** focal neurological deficit of acute onset lasting greater than 24 hours (includes 'presumed perinatal' infarcts diagnosed in later infancy). **Radiological criteria:** a) CT and/or MRI diagnosis of arterial ischemic infarct, and b) hemorrhagic infarction. **Exceptions:** a) also include patient if clinical deficit ≤24 hours, but MRI shows infarct in location consistent with neurological syndrome, b) for neonates, seizures or lethargy alone may be the only symptoms, and c) prolonged seizure with post-ictal Todd's paresis. **Radiological criteria:** diffuse primary cerebral hemorrhage, hypoxic ischemic lesions, periventricular leukomalacia, primary cerebral contusion.

2) Sinovenous Thrombosis: Both clinical and radiological criteria must be present.

**Clinical criteria (clinical criteria for sinovenous thrombosis are necessarily non-specific consistent with known clinical presentation in this disorder):** any transient neurological dysfunction including headache, seizure, decreased level of consciousness, focal neurological signs consistent with cerebral sinovenous thrombosis. **Radiological criteria:** thrombosis of cerebral veins or venous sinuses, "sinovenous thrombosis" seen on MRI scan, MR angiography and/or conventional cerebral angiogram.

Exclusion criteria: Invalid ICES Key Number (IKN)

‡ ICD cohort based on unique patients only (i.e., does not include multiple patient-visits).

† Validation cohort based on unique patients only (i.e., does not include multiple patient-visits).

Notes: (1) Ischemic stroke = Arterial Ischemic Stroke (AIS) and Cerebral Sinovenous Thrombosis (CSVT)

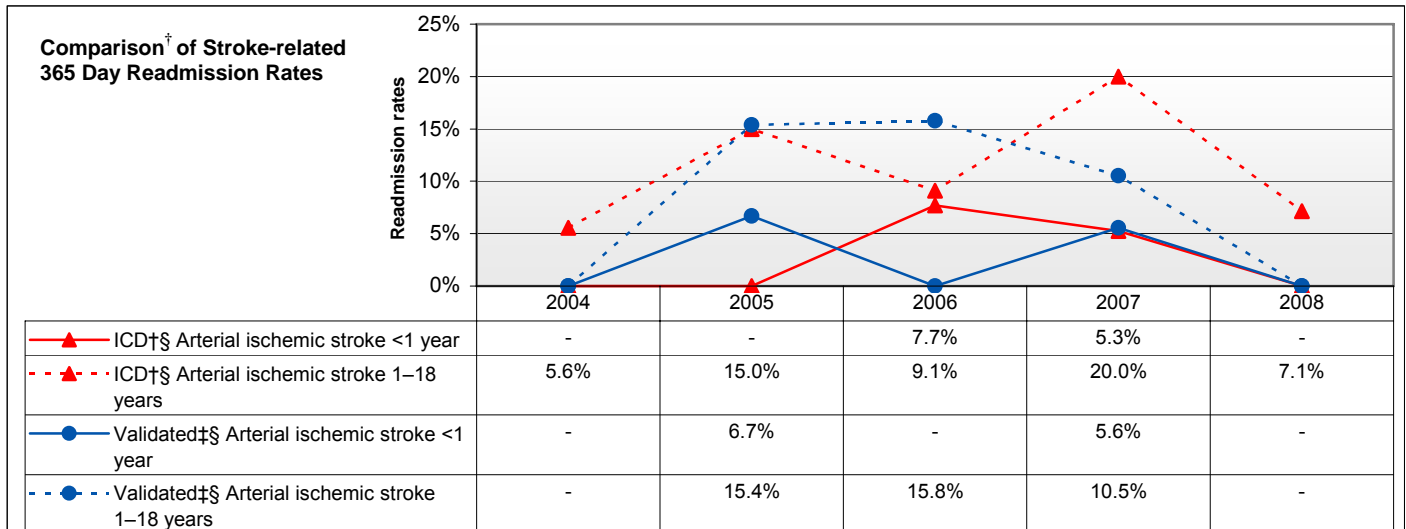
(2) ICD cohort: Children identified by International Classification of Disease (ICD) stroke code search of ICES databases at hospitals in Ontario based on the same search strategy as for adult stroke ICES linkage studies.

(3) ICD cohort is a population-based analysis (i.e., the patient's residence is used to report regional performance).

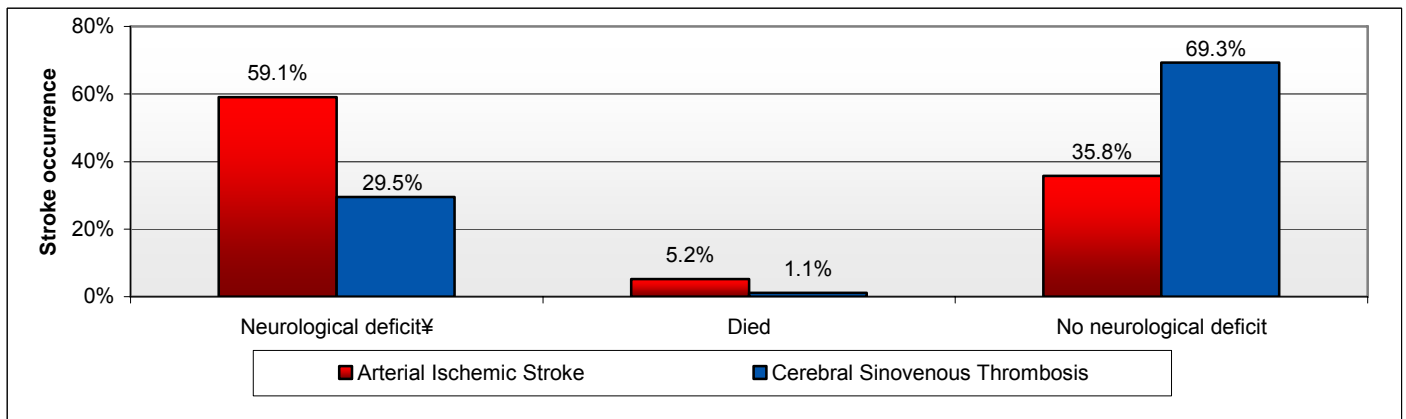
(4) No readmissions for CSVT patients except in 2008–2009 where 27% of CSVT-diagnosed patients aged 1–18 years were readmitted.

(5) Validated cohort: Children identified by referral or ICD stroke code searches utilizing wider range of stroke codes than adult studies (Appendix E), on-site at acute care tertiary paediatric hospitals in Ontario.

**Exhibit 7.1.3 Hospital readmission rates within 365 days of discharge for paediatric stroke in the ICD cohort (2004/05 to 2008/09) and validated cohort (2004 to 2008), by stroke type, age and year, in Ontario**



**Exhibit 7.2.1 Neurological outcome within five years of stroke occurrence of paediatric patients in the validated cohort, by stroke type, in Ontario, 2004 to 2008**



Data sources: Exhibit 7.1.3—Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2004/05–2008/09; and Canadian Paediatric Ischemic Stroke Registry (CPISR), 2004–2008. Exhibit 7.2.1—Canadian Paediatric Ischemic Stroke Registry (CPISR), 2004–2008.

Inclusion criteria:

Exhibit 7.1.3—All infants (for AIS only, premature infants < 36 weeks, gestation excluded) and children aged term birth to 18 years readmitted to an emergency department or inpatient setting of an acute care hospital in Ontario with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack within three months of initial stroke event starting in January 2004.

Exhibit 7.2.1—All infants (for AIS only, premature infants < 36 weeks, gestation excluded) and children aged term birth to 18 years after January 2004 admitted to an emergency department or inpatient setting of an acute care hospital in Ontario with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack within three months of initial stroke event starting in January 2004.

1) Arterial Ischemic Infarct: Both clinical and radiological criteria must be present.

**Clinical criteria:** focal neurological deficit of acute onset lasting greater than 24 hours (includes 'presumed perinatal' infarcts diagnosed in later infancy). **Radiological criteria:** a) CT and/or MRI diagnosis of arterial ischemic infarct, and b) hemorrhagic infarction. **Exceptions:** a) also include patient if clinical deficit ≤24 hours, but MRI shows infarct in location consistent with neurological syndrome, b) for neonates seizures or lethargy alone may be the only symptoms, and c) prolonged seizure with postictal Todd's paresis. **Radiological criteria:** diffuse primary cerebral hemorrhage, hypoxic ischemic lesions, periventricular leukomalacia, primary cerebral contusion.

2) Sinovenous Thrombosis: Both clinical and radiological criteria must be present.

**Clinical criteria (clinical criteria for sinovenous thrombosis are necessarily non-specific consistent with known clinical presentation in this disorder):** any transient neurological dysfunction including headache, seizure, decreased level of consciousness, focal neurological signs consistent with cerebral sinovenous thrombosis. **Radiological criteria:** thrombosis of cerebral veins or venous sinuses, "sinovenous thrombosis" seen on MRI scan, MR angiography and or conventional cerebral angiogram.

Exclusion criteria: Invalid ICES Key Number (IKN)

† ICD cohort based on unique patients only (i.e., does not include multiple patient-visits).

‡ Validated cohort based on unique patients only (i.e., does not include multiple patient-visits).

§ ICD and validated cohorts: There is 45% patient overlap [95 of 210 patients in the paediatric registry validated cohort match the ICD cohort on IKN (scrambled health card number)].

¥ Any (mild, moderate or severe) neurological deficit at time of neurological examination.

Notes: (1) Ischemic stroke = Arterial Ischemic Stroke (AIS) and Cerebral Sinovenous Thrombosis (CSVT)

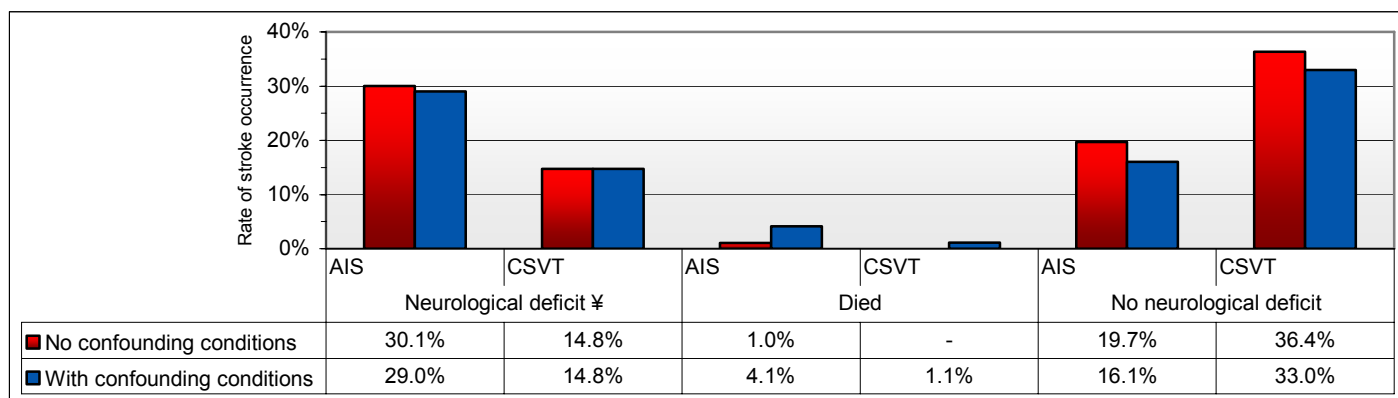
(2) ICD cohort: Children identified by International Classification of Disease (ICD) stroke code search of ICES databases at hospitals in Ontario based on the same search strategy as for adult stroke ICES linkage studies.

(3) Validated cohort: Children identified by referral or ICD stroke code searches utilizing wider range of stroke codes than adult studies (Appendix E), on-site at acute care tertiary paediatric hospitals in Ontario.

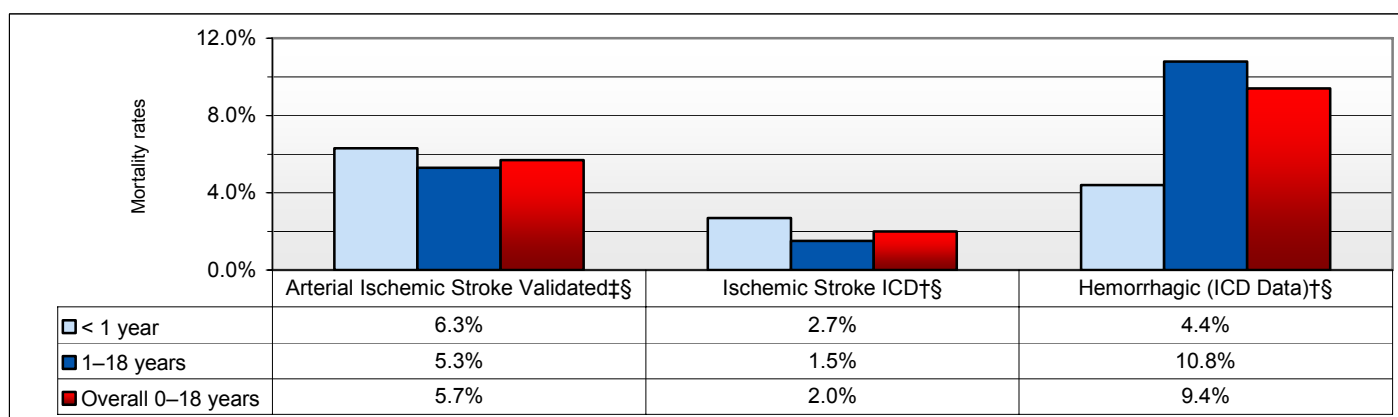
(4) ICD cohort is a population-based analysis (i.e., the patient's residence is used to report regional performance).



**Exhibit 7.2.2 Neurological outcome status of paediatric stroke patients within five years of stroke occurrence in the validated cohort, by stroke type and absence or presence of confounding conditions, in Ontario, 2004 to 2008**



**Exhibit 7.3 Mortality rates within 365 days of admission date following paediatric stroke, by ICD cohort (2004/05 to 2008/09) and validated cohort (2004 to 2008), and by age group, in Ontario**



Data sources: Exhibit 7.2.2—Canadian Paediatric Ischemic Stroke Registry (CPISR), 2004/05–2008/09. Exhibit 7.3—Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2004/05–2008/09; and Canadian Paediatric Ischemic Stroke Registry (CPISR), 2004–2008.

Inclusion criteria: Exhibit 7.2.2—All infants (for AIS only, premature infants <36 weeks, gestation excluded) and children aged term birth to 18 years after January 2004 admitted to an acute care hospital in Ontario with a diagnosis of stroke (ischemic or hemorrhagic) or TIA.

Exhibit 7.3—All infants (for AIS only, premature infants <36 weeks, gestation excluded) and children aged term birth to 18 years after January 2004 who died either in hospital or following discharge within one year of admission date to an emergency department or an inpatient setting of an acute care hospital with a diagnosis of stroke (ischemic or hemorrhagic) or TIA.

1) Arterial Ischemic Infarct: Both clinical and radiological criteria must be present.

**Clinical criteria:** focal neurological deficit of acute onset lasting greater than 24 hours (includes 'presumed perinatal' infarcts diagnosed in later infancy). **Radiological criteria:** a) CT and/or MRI diagnosis of arterial ischemic infarct, and b) hemorrhagic infarction. **Exceptions:** a) also include patient if clinical deficit ≤24 hours, but MRI shows infarct in location consistent with neurological syndrome, b) for neonates seizures or lethargy alone may be the only symptoms, and c) prolonged seizure with post-ictal Todd's paresis. **Radiological criteria:** diffuse primary cerebral hemorrhage, hypoxic ischemic lesions, periventricular leukomalacia, primary cerebral contusion.

2) Sinovenous Thrombosis: Both clinical and radiological criteria must be present.

**Clinical criteria (clinical criteria for sinovenous thrombosis are necessarily non-specific consistent with known clinical presentation in this disorder):** any transient neurological dysfunction including headache, seizure, decreased level of consciousness, focal neurological signs consistent with cerebral sinovenous thrombosis. **Radiological criteria:** thrombosis of cerebral veins or venous sinuses, "sinovenous thrombosis" seen on MRI scan, MR angiography and/or conventional cerebral angiogram.

Exclusion criteria: Invalid ICES Key Number (IKN)

† ICD cohort based on unique patients only (i.e., does not include multiple patient-visits).

‡ Validated cohort based on unique patients only (i.e., does not include multiple patient-visits).

§ ICD and validated cohorts: There is 45% patient overlap [95 of 210 patients in the paediatric registry validated cohort match the ICD cohort on IKN (scrambled health card number)].

¶ Any (mild, moderate, or severe) neurological deficit at time of neurological examination.

Notes: (1) Ischemic stroke = Arterial Ischemic Stroke (AIS) and Cerebral Sinovenous Thrombosis (CSVT)

(2) ICD cohort: Children identified by International Classification of Disease (ICD) stroke code search of ICES databases at hospitals in Ontario based on the same search strategy as for adult stroke ICES linkage studies.

(3) Validated cohort: Children identified by referral or ICD stroke code searches utilizing wider range of stroke codes than adult studies (Appendix E), on-site at acute care tertiary paediatric hospitals in Ontario.

(4) ICD cohort is a population-based analysis (i.e., the patient's residence is used to report regional performance).

## Appendix A: ICD-10 Codes Used in the Report

Category	ICD-10 Code
<b>Stroke Type</b>	
Transient ischemic attack	G45 (excl. G45.4)
Acute stroke	H34.1, I60, I61, I63 (excl. I63.6), I64
Subarachnoid hemorrhage	I60
Intracerebral hemorrhage	I61
Ischemic stroke	I63, I64
Stroke type not specified/undetermined	I64
<b>Inhospital Complications</b>	
Deep vein thrombosis	I80
Pneumonia	J13, J14, J15
Gastrointestinal bleeding	K92.2
<b>Vascular Surgery</b>	
Carotid stenting	1JE.50
Carotid endarterectomy	1JE.57

## Appendix B: Calculation of Stroke Patient Discharge Disposition from Acute Care

In 2005, the Canadian Institute for Health Information (CIHI) modified the definitions for the discharge disposition options provided in its Discharge Abstract Database.

Within the revised definitions, for any patient who is coded as a transfer from one institution to another, an additional code is required to indicate the type of institution to which the patient is transferred.

Based on discussions with CIHI, a new analysis model was developed for determining stroke discharge from acute care. Within this model, the “Institution to type” data element is used to determine the location of the transfer from acute care used in combination with the initial discharge disposition code to determine care.

Several coding sequences were tested, and the final sequence was found to be the most valid and reliable across data years (2003/04, 2004/05, 2005/06).

(SEAC Technical Report, July 2007)

Discharge Disposition	Coding Algorithm
Dead	Discharge disposition = 07
Rehabilitation	Discharge disposition = 01, 02 or 03 AND InstTyp = 02 or 07
Long-term care nursing home	Discharge disposition = 01, 02 or 03 AND InstTyp = 04
Long-term care home for the aged	Discharge disposition = 01, 02 or 03 AND InstTyp = 09
Complex continuing care	Discharge disposition = 01, 02 or 03 AND InstTyp = 03
Acute care	Discharge disposition = 01 AND InstTyp = 01
Home with support services	Discharge disposition = 04
Home without support services	Discharge disposition = 05
Palliative care	Discharge disposition = 03
Other	All other codes

## Appendix C: Rehabilitation Reporting System Coding for Discharge Destination

Discharge Disposition	Coding Algorithm
Home without services	dliveset = 1
Home with services	dliveset = 2
Other community services	dliveset = 3, 4, 6, 7
Long-term care facility	dliveset = 5
Acute care facility	referto = 02, 03
Dead	dreason = 8
Unavailable/unknown	dliveset = -50, -70

## Appendix D: Designated Rehabilitation Beds/facilities by Ontario Stroke System Region

OSS Region	NRS Facility Number/Facility Type	Institution
Central East	2771	Southlake Regional Health Centre
	3507	Royal Victoria Hospital
	3617	Peterborough Regional Health Centre
	3858	York Central Hospital
	3687	Penetanguishene General Hospital
	3934	Lakeridge Health Oshawa
	4307	Markham Stouffville Hospital
	4450	Northumberland Hills Hospital
	4483	Ross Memorial Hospital
Central South	1912	Grand River Hospital - Freeport
	3155	St. Joseph's Healthcare
	3736	Grand River Hospital - Kitchener-Waterloo
	3778	Joseph Brant Memorial Hospital
	3880	Hamilton Health Sciences - Henderson
	3881/Specialty	Hamilton Health Sciences - Chedoke
	3912	St. Joseph's Health Centre - Guelph
	4289	St. Mary's General Hospital
	4342	Hamilton Health Sciences - General
	4385	Guelph General Hospital
	4678	Brantford General Hospital
4595	Hotel Dieu Shaver Health and Rehabilitation	
East – Champlain	3782/Specialty	SCO Health Service
	4299	Pembroke General Hospital
	4329	The Ottawa Hospital, Civic Campus
	4429/Specialty	The Ottawa Hospital Rehabilitation Centre
	4461	Hôpital Montfort
	4470	Cornwall Community Hospital
	4584	Queensway Carleton Hospital
Northeast	3413	North Bay General Hospital
	4409	Sault Area Hospital
	4592	West Parry Sound Health Centre
	4061/Specialty	Sudbury Regional Hospital
Northwest	3891/Specialty 3892	St. Joseph's Care Group
South East	2223/Specialty	PCCC - St. Mary's of the Lake
	3990	Quinte Health Care Belleville General
	4369	Kingston General Hospital
	4647	Brockville General Hospital
Southwest	3612	Stratford General Hospital

OSS Region	NRS Facility Number/Facility Type	Institution
	3846/Specialty	Windsor Regional Hospital
	3884	St. Joseph's Health Care
	3884/Specialty 3916	Parkwood Hospital
	3897	Wingham & District Hospital
	3946	Grey Bruce Health Services - Owen Sound
	4149	Hotel-Dieu Grace Hospital
	4162	St Thomas-Elgin General Hospital
	4204	Leamington District Memorial Hospital
	4417	Bluewater Health
	4649	South Huron Hospital Association
	4361	St. Joseph's Health Services Association Chatham
<b>Toronto – North and East</b>	4155	Scarborough Hospital - General Division
	4156	Scarborough Hospital - Grace Division
	4273/4274	Sunnybrook & Women's College Health Sciences Centre
	4335	North York General Hospital
	1337/Specialty 4368	St. John's Rehab Hospital
	3439/Specialty	Baycrest Centre for Geriatric Care
<b>Toronto – Southeast</b>	3941	Rouge Valley Health System - Centenary
	4151	Rouge Valley Health System - Ajax
	4279	Toronto East General
	1355	Providence Healthcare
	1436	Bridgepoint Hospital
<b>Toronto – West</b>	3950/Specialty	Toronto Rehab Institute
	3951/Specialty	Toronto Rehab Institute - Lyndhurst
	4366	St. Joseph's Health Centre
	4293	Humber River Regional Hospital
<b>West GTA</b>	1471/Specialty	West Park Healthcare Centre
	3288	Credit Valley Hospital
	4136	Halton Healthcare Services - OTMH
	4150	Trillium Health Centre
	4277	William Osler Health Centre

Notes:

Assignment of OSS region is based on the geographic location of the facility/corporation.

Based on fiscal year 2007/08.

## Appendix E: ICD-10 Codes Used to Generate the Paediatric ICD Cohort

Category	ICD-10 Code
<b>Stroke Type</b>	
Transient ischemic attack	G45 (excl. G45.4)
Acute stroke	H34.1, I60, I61, I63 (excl. I63.6), I64
Subarachnoid hemorrhage	I60
Intracerebral hemorrhage	I61
Ischemic stroke	I63, I64
Stroke type not specified/undetermined	I64
<b>Inhospital Complications</b>	
Deep vein thrombosis	I80
Pneumonia	J13, J14, J15
Gastrointestinal bleeding	K92.2
<b>Vascular Surgery</b>	
Carotid stenting	1JE.50
Carotid endarterectomy	1JE.57

## Appendix F: Supplementary Data for Sub-Local Health Integration Networks

### List of Exhibits

- Exhibit 1.1A** Number and percentage of stroke/TIA patients and patient visits to the emergency department, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 1.4A** Number and percentage of stroke/TIA patients and patient visits to hospital by ambulance, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 1.6.1A** Emergency department length of stay for stroke/TIA, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 1.6.2A** Emergency department length of stay for ischemic stroke, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 1.6.3A** Emergency department length of stay for transient ischemic attack, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 1.6.4A** Emergency department length of stay for intracerebral hemorrhage, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 1.6.5A** Emergency department length of stay for subarachnoid hemorrhage, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 2.2A** Number and percentage of stroke/TIA patients admitted to acute care hospitals, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 2.3A** Number and percentage of patients admitted to acute care hospitals (OSS designated and non-designated) with a diagnosis of stroke/TIA, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 2.5.1A** Inpatient length of stay for stroke/TIA, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 2.5.2A** Acute inpatient length of stay for ischemic stroke, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 2.5.3A** Acute inpatient length of stay for transient ischemic attack, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 2.5.4A** Acute inpatient length of stay for intracerebral hemorrhage, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 2.5.6A** Acute inpatient length of stay for ill-defined stroke, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 2.6A** Age- and sex-adjusted in-hospital complication rates for pneumonia among stroke/TIA patients, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 2.7A** Discharge destination of stroke/transient ischemic attack patients following an acute hospitalization, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08
- Exhibit 5.1A** Age- and sex-adjusted readmission rates within 30 days following stroke or transient ischemic attack, by Sub-Local Health Integration Network, in Ontario, 2003/04 to 2006/07
- Exhibit 5.2A** Age- and sex-adjusted readmission rates within 90 days following stroke or transient ischemic attack, by Sub-Local Health Integration Network, in Ontario, 2003/04 to 2006/07
- Exhibit 5.3A** Age- and sex-adjusted in-hospital mortality rates following stroke or transient ischemic attack, by Sub-Local Health Integration Network, in Ontario, 2003/04 to 2007/08
- Exhibit 5.4A** Age- and sex-adjusted mortality rates at 30 days following stroke or transient ischemic attack, by Sub-Local Health Integration Network, in Ontario, 2003/04 to 2006/07



**Exhibit 1.1A Number and percentage of stroke/TIA patients and patient visits to the emergency department, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>1</sup>	2003/04 Patients <sup>2</sup> n (%)	2006/07 Patients <sup>2</sup> n (%)	2006/07 Patient Visits <sup>3</sup> n (%)	2007/08 Patients <sup>2</sup> n (%)	2007/08 Patient Visits <sup>3</sup> n (%)
Erie St. Clair – Essex	736 (3.9)	662 (3.5)	724 (3.4)	631 (3.3)	695 (3.2)
Erie St. Clair – Chatham-Kent	228 (1.2)	223 (1.2)	242 (1.1)	221 (1.1)	235 (1.1)
Erie St. Clair – Lambton	226 (1.2)	235 (1.2)	261 (1.2)	212 (1.1)	228 (1.1)
South West – Central	229 (1.2)	287 (1.5)	330 (1.5)	271 (1.4)	313 (1.4)
South West – North	339 (1.8)	347 (1.8)	381 (1.8)	348 (1.8)	401 (1.8)
South West – South	841 (4.4)	1,006 (5.2)	1,131 (5.3)	996 (5.1)	1,131 (5.2)
Waterloo Wellington – Rural – South Grey & North Wellington	47 (0.2)	32 (0.2)	34 (0.2)	40 (0.2)	41 (0.2)
Waterloo Wellington – Rural Waterloo	-	-	-	-	-
Waterloo Wellington – Rural Wellington	53 (0.3)	38 (0.2)	44 (0.2)	63 (0.3)	73 (0.3)
Waterloo Wellington – Urban Guelph	134 (0.7)	139 (0.7)	154 (0.7)	117 (0.6)	131 (0.6)
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	648 (3.4)	676 (3.5)	743 (3.5)	664 (3.4)	731 (3.4)
Hamilton Niagara Haldimand Brant – Brant	6 (0.0)	8 (0.0)	8 (0.0)	**	**
Hamilton Niagara Haldimand Brant – Brantford	230 (1.2)	270 (1.4)	310 (1.4)	288 (1.5)	317 (1.5)
Hamilton Niagara Haldimand Brant – Burlington	210 (1.1)	207 (1.1)	223 (1.0)	214 (1.1)	239 (1.1)
Hamilton Niagara Haldimand Brant – Fort Erie	32 (0.2)	31 (0.2)	39 (0.2)	32 (0.2)	34 (0.2)
Hamilton Niagara Haldimand Brant – Grimsby	61 (0.3)	47 (0.2)	54 (0.3)	53 (0.3)	59 (0.3)
Hamilton Niagara Haldimand Brant – Haldimand	82 (0.4)	81 (0.4)	96 (0.4)	71 (0.4)	75 (0.3)
Hamilton Niagara Haldimand Brant – Hamilton	1,003 (5.3)	909 (4.7)	1,005 (4.7)	958 (4.9)	1,053 (4.9)
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	171 (0.9)	252 (1.3)	277 (1.3)	262 (1.4)	296 (1.4)
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Norfolk	126 (0.7)	92 (0.5)	103 (0.5)	110 (0.6)	119 (0.5)
Hamilton Niagara Haldimand Brant – Pelham	45 (0.2)	22 (0.1)	22 (0.1)	19 (0.1)	19 (0.1)
Hamilton Niagara Haldimand Brant – Port Colborne	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	363 (1.9)	308 (1.6)	358 (1.7)	348 (1.8)	396 (1.8)
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	97 (0.5)	101 (0.5)	110 (0.5)	87 (0.4)	96 (0.4)
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-
Central West – Brampton	314 (1.6)	277 (1.4)	302 (1.4)	309 (1.6)	334 (1.5)
Central West – Caledon	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-
Central West – Orangeville	136 (0.7)	116 (0.6)	125 (0.6)	129 (0.7)	145 (0.7)
Central West – Rexdale (Toronto)	337 (1.8)	254 (1.3)	269 (1.3)	235 (1.2)	251 (1.2)
Central West – Woodbridge (Vaughan)	-	-	-	-	-
Mississauga Halton – Halton Hills	53 (0.3)	43 (0.2)	46 (0.2)	54 (0.3)	58 (0.3)
Mississauga Halton – Milton	36 (0.2)	52 (0.3)	55 (0.3)	29 (0.1)	32 (0.1)
Mississauga Halton – Northwest Mississauga	224 (1.2)	207 (1.1)	219 (1.0)	234 (1.2)	250 (1.2)
Mississauga Halton – Oakville	172 (0.9)	224 (1.2)	250 (1.2)	212 (1.1)	232 (1.1)
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	635 (3.3)	736 (3.8)	790 (3.7)	717 (3.7)	760 (3.5)

Sub-Local Health Integration Network <sup>1</sup>	2003/04 Patients <sup>2</sup> n (%)	2006/07 Patients <sup>2</sup> n (%)	2006/07 Patient Visits <sup>3</sup> n (%)	2007/08 Patients <sup>2</sup> n (%)	2007/08 Patient Visits <sup>3</sup> n (%)
Toronto Central – East	343 (1.8)	248 (1.3)	269 (1.3)	236 (1.2)	260 (1.2)
Toronto Central – North East	-	-	-	-	-
Toronto Central – North Toronto	396 (2.1)	457 (2.4)	500 (2.3)	499 (2.6)	549 (2.5)
Toronto Central – North West	-	-	-	-	-
Toronto Central – South East	169 (0.9)	274 (1.4)	359 (1.7)	312 (1.6)	404 (1.9)
Toronto Central – South West	598 (3.1)	695 (3.6)	785 (3.7)	710 (3.7)	794 (3.7)
Toronto Central – West	313 (1.6)	288 (1.5)	330 (1.5)	321 (1.7)	361 (1.7)
Central – Central York Region	313 (1.6)	286 (1.5)	310 (1.4)	293 (1.5)	333 (1.5)
Central – North York East	-	-	-	-	-
Central – North York Central	330 (1.7)	348 (1.8)	381 (1.8)	358 (1.8)	399 (1.8)
Central – North York West	508 (2.7)	439 (2.3)	468 (2.2)	419 (2.2)	455 (2.1)
Central – South East York Region	476 (2.5)	622 (3.2)	683 (3.2)	625 (3.2)	687 (3.2)
Central – South Simcoe & Northern York Region	44 (0.2)	38 (0.2)	38 (0.2)	33 (0.2)	34 (0.2)
Central – South West York Region	-	-	-	-	-
Central East – Durham East	416 (2.2)	486 (2.5)	546 (2.5)	455 (2.3)	496 (2.3)
Central East – Durham North/Central	102 (0.5)	82 (0.4)	88 (0.4)	100 (0.5)	109 (0.5)
Central East – Durham West	159 (0.8)	203 (1.1)	222 (1.0)	181 (0.9)	192 (0.9)
Central East – Haliburton Highlands	53 (0.3)	31 (0.2)	35 (0.2)	53 (0.3)	58 (0.3)
Central East – Kawartha Lakes	125 (0.7)	108 (0.6)	126 (0.6)	124 (0.6)	152 (0.7)
Central East – Northumberland-Havelock	150 (0.8)	175 (0.9)	209 (1.0)	178 (0.9)	211 (1.0)
Central East – Peterborough City and County	301 (1.6)	341 (1.8)	371 (1.7)	308 (1.6)	343 (1.6)
Central East – Scarborough Agincourt-Rouge	233 (1.2)	210 (1.1)	220 (1.0)	208 (1.1)	224 (1.0)
Central East – Scarborough Cliffs-Scarborough Centre	682 (3.6)	584 (3.0)	653 (3.0)	584 (3.0)	642 (3.0)
South East – Addington North/Central Frontenac	-	-	-	-	-
South East – Belleville	143 (0.8)	123 (0.6)	142 (0.7)	145 (0.7)	166 (0.8)
South East – Brockville	108 (0.6)	125 (0.7)	133 (0.6)	123 (0.6)	139 (0.6)
South East – Central Hastings	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-
South East – Kingston and Islands	416 (2.2)	391 (2.0)	459 (2.1)	421 (2.2)	502 (2.3)
South East – North Hastings	74 (0.4)	30 (0.2)	32 (0.1)	30 (0.2)	32 (0.1)
South East – Prince Edward County	53 (0.3)	58 (0.3)	64 (0.3)	63 (0.3)	71 (0.3)
South East – Quinte West	72 (0.4)	68 (0.4)	76 (0.4)	74 (0.4)	77 (0.4)
South East – Rideau Lakes	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	140 (0.7)	118 (0.6)	136 (0.6)	106 (0.5)	117 (0.5)
South East – South Frontenac	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-
South East – Tyendinaga Napanee	40 (0.2)	37 (0.2)	42 (0.2)	49 (0.3)	58 (0.3)
Champlain – North Lanark/North Grenville	88 (0.5)	70 (0.4)	81 (0.4)	67 (0.3)	80 (0.4)
Champlain – Ottawa	1,422 (7.5)	1,469 (7.7)	1,750 (8.2)	1,438 (7.4)	1,702 (7.8)
Champlain – Prescott-Russell	51 (0.3)	51 (0.3)	58 (0.3)	90 (0.5)	96 (0.4)
Champlain – Renfrew	213 (1.1)	246 (1.3)	315 (1.5)	253 (1.3)	297 (1.4)
Champlain – Stormont, Dundas and Glengarry	215 (1.1)	182 (0.9)	210 (1.0)	184 (0.9)	208 (1.0)
North Simcoe Muskoka – Central East	253 (1.3)	250 (1.3)	281 (1.3)	324 (1.7)	365 (1.7)
North Simcoe Muskoka – Central West	111 (0.6)	95 (0.5)	108 (0.5)	112 (0.6)	122 (0.6)
North Simcoe Muskoka – Muskoka	165 (0.9)	146 (0.8)	165 (0.8)	177 (0.9)	188 (0.9)

Sub-Local Health Integration Network <sup>1</sup>	2003/04 Patients <sup>2</sup> n (%)	2006/07 Patients <sup>2</sup> n (%)	2006/07 Patient Visits <sup>3</sup> n (%)	2007/08 Patients <sup>2</sup> n (%)	2007/08 Patient Visits <sup>3</sup> n (%)
North Simcoe Muskoka – North East	144 (0.8)	170 (0.9)	189 (0.9)	149 (0.8)	166 (0.8)
North Simcoe Muskoka – North West	180 (0.9)	130 (0.7)	143 (0.7)	122 (0.6)	134 (0.6)
North East – Algoma	263 (1.4)	250 (1.3)	275 (1.3)	244 (1.3)	265 (1.2)
North East – Cochrane	172 (0.9)	140 (0.7)	157 (0.7)	123 (0.6)	135 (0.6)
North East – James and Hudson Bay Coasts	-	-	-	-	-
North East – Manitoulin-Sudbury	402 (2.1)	360 (1.9)	395 (1.8)	352 (1.8)	389 (1.8)
North East – Nipissing	219 (1.1)	197 (1.0)	223 (1.0)	244 (1.3)	284 (1.3)
North East – Parry Sound	51 (0.3)	57 (0.3)	61 (0.3)	45 (0.2)	54 (0.2)
North East – Timiskaming	55 (0.3)	83 (0.4)	90 (0.4)	92 (0.5)	97 (0.4)
North West – Dryden	36 (0.2)	33 (0.2)	37 (0.2)	28 (0.1)	32 (0.1)
North West – Kenora	61 (0.3)	51 (0.3)	56 (0.3)	55 (0.3)	56 (0.3)
North West – Kenora District (excl. Kenora & Dryden)	7 (0.0)	31 (0.2)	34 (0.2)	15 (0.1)	18 (0.1)
North West – Nipigon Red Rock Greenstone	16 (0.1)	20 (0.1)	20 (0.1)	12 (0.1)	13 (0.1)
North West – North Shore	12 (0.1)	18 (0.1)	21 (0.1)	11 (0.1)	11 (0.1)
North West – Rainy River District	47 (0.2)	64 (0.3)	73 (0.3)	51 (0.3)	53 (0.2)
North West – Thunder Bay City	307 (1.6)	279 (1.5)	315 (1.5)	270 (1.4)	310 (1.4)

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack (TIA).

<sup>1</sup> Based on sub-LHIN planning area version 5.1.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may be counted more than once).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 1.4A Number and percentage of stroke/TIA patients and patient visits to hospital by ambulance, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>1</sup>	2003/04 Patients <sup>2</sup> n (%)	2006/07 Patients <sup>2</sup> n (%)	2006/07 Patient Visits <sup>3</sup> n (%)	2007/08 Patients <sup>2</sup> n (%)	2007/08 Patient Visits <sup>3</sup> n (%)
Erie St. Clair – Essex	430 (4.3)	364 (3.6)	393 (3.5)	399 (3.8)	433 (3.6)
Erie St. Clair – Chatham-Kent	139 (1.4)	124 (1.2)	132 (1.2)	129 (1.2)	138 (1.2)
Erie St. Clair – Lambton	85 (0.8)	106 (1.1)	116 (1.0)	98 (0.9)	109 (0.9)
South West – Central	106 (1.1)	138 (1.4)	161 (1.4)	135 (1.3)	163 (1.4)
South West – North	172 (1.7)	149 (1.5)	163 (1.4)	160 (1.5)	183 (1.5)
South West – South	444 (4.4)	527 (5.3)	613 (5.4)	541 (5.1)	632 (5.3)
Waterloo Wellington – Rural – South Grey & North Wellington	19 (0.2)	9 (0.1)	11 (0.1)	9 (0.1)	9 (0.1)
Waterloo Wellington – Rural Waterloo	-	-	-	-	-
Waterloo Wellington – Rural Wellington	27 (0.3)	15 (0.1)	18 (0.2)	22 (0.2)	27 (0.2)
Waterloo Wellington – Urban Guelph	73 (0.7)	75 (0.7)	85 (0.7)	68 (0.6)	79 (0.7)
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	359 (3.6)	392 (3.9)	432 (3.8)	391 (3.7)	430 (3.6)
Hamilton Niagara Haldimand Brant – Brant	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	121 (1.2)	152 (1.5)	175 (1.5)	174 (1.6)	195 (1.6)
Hamilton Niagara Haldimand Brant – Burlington	114 (1.1)	119 (1.2)	128 (1.1)	101 (1.0)	110 (0.9)
Hamilton Niagara Haldimand Brant – Fort Erie	17 (0.2)	11 (0.1)	17 (0.1)	6 (0.1)	8 (0.1)
Hamilton Niagara Haldimand Brant – Grimsby	18 (0.2)	16 (0.2)	18 (0.2)	15 (0.1)	17 (0.1)
Hamilton Niagara Haldimand Brant – Haldimand	32 (0.3)	24 (0.2)	33 (0.3)	25 (0.2)	27 (0.2)
Hamilton Niagara Haldimand Brant – Hamilton	569 (5.7)	532 (5.3)	591 (5.2)	513 (4.8)	568 (4.7)
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	104 (1.0)	177 (1.8)	193 (1.7)	185 (1.7)	210 (1.8)
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Norfolk	63 (0.6)	32 (0.3)	36 (0.3)	62 (0.6)	67 (0.6)
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	19 (0.2)	9 (0.1)	9 (0.1)	**	**
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	204 (2.0)	169 (1.7)	207 (1.8)	195 (1.8)	231 (1.9)
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	51 (0.5)	60 (0.6)	67 (0.6)	52 (0.5)	57 (0.5)
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-
Central West – Brampton	165 (1.6)	134 (1.3)	153 (1.3)	161 (1.5)	179 (1.5)
Central West – Caledon	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-
Central West – Orangeville	54 (0.5)	66 (0.7)	74 (0.7)	72 (0.7)	81 (0.7)
Central West – Rexdale (Toronto)	210 (2.1)	154 (1.5)	166 (1.5)	114 (1.1)	124 (1.0)
Central West – Woodbridge (Vaughan)	-	-	-	-	-
Mississauga Halton – Halton Hills	19 (0.2)	14 (0.1)	16 (0.1)	19 (0.2)	21 (0.2)
Mississauga Halton – Milton	17 (0.2)	19 (0.2)	21 (0.2)	8 (0.1)	10 (0.1)

<b>Sub-Local Health Integration Network<sup>1</sup></b>	<b>2003/04 Patients<sup>2</sup> n (%)</b>	<b>2006/07 Patients<sup>2</sup> n (%)</b>	<b>2006/07 Patient Visits<sup>3</sup> n (%)</b>	<b>2007/08 Patients<sup>2</sup> n (%)</b>	<b>2007/08 Patient Visits<sup>3</sup> n (%)</b>
Mississauga Halton – Northwest Mississauga	88 (0.9)	60 (0.6)	65 (0.6)	66 (0.6)	70 (0.6)
Mississauga Halton – Oakville	53 (0.5)	74 (0.7)	85 (0.7)	62 (0.6)	67 (0.6)
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	366 (3.6)	475 (4.7)	505 (4.4)	476 (4.5)	504 (4.2)
Toronto Central – East	186 (1.9)	129 (1.3)	141 (1.2)	131 (1.2)	144 (1.2)
Toronto Central – North East	-	-	-	-	-
Toronto Central – North Toronto	195 (1.9)	288 (2.9)	322 (2.8)	297 (2.8)	328 (2.7)
Toronto Central – North West	-	-	-	-	-
Toronto Central – South East	95 (0.9)	142 (1.4)	200 (1.8)	185 (1.7)	256 (2.1)
Toronto Central – South West	326 (3.2)	321 (3.2)	372 (3.3)	391 (3.7)	450 (3.8)
Toronto Central – West	165 (1.6)	117 (1.2)	133 (1.2)	177 (1.7)	189 (1.6)
Central – Central York Region	165 (1.6)	151 (1.5)	170 (1.5)	163 (1.5)	189 (1.6)
Central – North York East	-	-	-	-	-
Central – North York Central	167 (1.7)	134 (1.3)	153 (1.3)	176 (1.7)	198 (1.7)
Central – North York West	320 (3.2)	257 (2.6)	275 (2.4)	243 (2.3)	266 (2.2)
Central – South East York Region	254 (2.5)	347 (3.5)	387 (3.4)	379 (3.6)	417 (3.5)
Central – South Simcoe & Northern York Region	26 (0.3)	19 (0.2)	19 (0.2)	15 (0.1)	16 (0.1)
Central – South West York Region	-	-	-	-	-
Central East – Durham East	184 (1.8)	251 (2.5)	283 (2.5)	235 (2.2)	251 (2.1)
Central East – Durham North/Central	46 (0.5)	38 (0.4)	39 (0.3)	42 (0.4)	43 (0.4)
Central East – Durham West	87 (0.9)	129 (1.3)	141 (1.2)	117 (1.1)	123 (1.0)
Central East – Haliburton Highlands	13 (0.1)	6 (0.1)	10 (0.1)	23 (0.2)	25 (0.2)
Central East – Kawartha Lakes	61 (0.6)	50 (0.5)	60 (0.5)	71 (0.7)	87 (0.7)
Central East – Northumberland-Havelock	84 (0.8)	97 (1.0)	117 (1.0)	88 (0.8)	105 (0.9)
Central East – Peterborough City and County	132 (1.3)	203 (2.0)	218 (1.9)	188 (1.8)	215 (1.8)
Central East – Scarborough Agincourt-Rouge	148 (1.5)	120 (1.2)	127 (1.1)	114 (1.1)	125 (1.0)
Central East – Scarborough Cliffs-Scarborough Centre	400 (4.0)	279 (2.8)	311 (2.7)	302 (2.8)	334 (2.8)
South East – Addington North/Central Frontenac	-	-	-	-	-
South East – Belleville	77 (0.8)	52 (0.5)	66 (0.6)	83 (0.8)	96 (0.8)
South East – Brockville	62 (0.6)	59 (0.6)	62 (0.5)	56 (0.5)	64 (0.5)
South East – Central Hastings	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-
South East – Kingston and Islands	281 (2.8)	259 (2.6)	315 (2.8)	293 (2.8)	352 (2.9)
South East – North Hastings	23 (0.2)	13 (0.1)	13 (0.1)	6 (0.1)	7 (0.1)
South East – Prince Edward County	19 (0.2)	20 (0.2)	24 (0.2)	25 (0.2)	27 (0.2)
South East – Quinte West	36 (0.4)	38 (0.4)	43 (0.4)	34 (0.3)	36 (0.3)
South East – Rideau Lakes	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	62 (0.6)	43 (0.4)	54 (0.5)	44 (0.4)	50 (0.4)
South East – South Frontenac	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-
South East – Tyendinaga Napanee	18 (0.2)	15 (0.1)	20 (0.2)	27 (0.3)	32 (0.3)

Sub-Local Health Integration Network <sup>1</sup>	2003/04 Patients <sup>2</sup> n (%)	2006/07 Patients <sup>2</sup> n (%)	2006/07 Patient Visits <sup>3</sup> n (%)	2007/08 Patients <sup>2</sup> n (%)	2007/08 Patient Visits <sup>3</sup> n (%)
Champlain – North Lanark/North Grenville	42 (0.4)	24 (0.2)	31 (0.3)	29 (0.3)	35 (0.3)
Champlain – Ottawa	798 (8.0)	857 (8.6)	1,049 (9.2)	905 (8.5)	1,101 (9.2)
Champlain – Prescott-Russell	25 (0.2)	25 (0.2)	30 (0.3)	48 (0.5)	53 (0.4)
Champlain – Renfrew	95 (0.9)	114 (1.1)	136 (1.2)	106 (1.0)	127 (1.1)
Champlain – Stormont, Dundas and Glengarry	105 (1.0)	84 (0.8)	91 (0.8)	96 (0.9)	108 (0.9)
North Simcoe Muskoka – Central East	134 (1.3)	148 (1.5)	171 (1.5)	215 (2.0)	237 (2.0)
North Simcoe Muskoka – Central West	56 (0.6)	37 (0.4)	44 (0.4)	52 (0.5)	58 (0.5)
North Simcoe Muskoka – Muskoka	81 (0.8)	57 (0.6)	61 (0.5)	89 (0.8)	92 (0.8)
North Simcoe Muskoka – North East	75 (0.7)	77 (0.8)	86 (0.8)	66 (0.6)	77 (0.6)
North Simcoe Muskoka – North West	66 (0.7)	49 (0.5)	55 (0.5)	56 (0.5)	65 (0.5)
North East – Algoma	119 (1.2)	107 (1.1)	117 (1.0)	122 (1.2)	131 (1.1)
North East – Cochrane	76 (0.8)	60 (0.6)	69 (0.6)	48 (0.5)	53 (0.4)
North East – James and Hudson Bay Coasts	-	-	-	-	-
North East – Manitoulin-Sudbury	237 (2.4)	222 (2.2)	244 (2.1)	232 (2.2)	255 (2.1)
North East – Nipissing	114 (1.1)	93 (0.9)	101 (0.9)	100 (0.9)	109 (0.9)
North East – Parry Sound	19 (0.2)	31 (0.3)	33 (0.3)	22 (0.2)	25 (0.2)
North East – Timiskaming	23 (0.2)	33 (0.3)	35 (0.3)	32 (0.3)	32 (0.3)
North West – Dryden	13 (0.1)	12 (0.1)	13 (0.1)	14 (0.1)	14 (0.1)
North West – Kenora	29 (0.3)	28 (0.3)	28 (0.2)	28 (0.3)	29 (0.2)
North West – Kenora District (excl. Kenora & Dryden)	**	12 (0.1)	13 (0.1)	11 (0.1)	12 (0.1)
North West – Nipigon Red Rock Greenstone	6 (0.1)	**	**	**	**
North West – North Shore	**	**	**	**	**
North West – Rainy River District	16 (0.2)	25 (0.2)	26 (0.2)	20 (0.2)	20 (0.2)
North West – Thunder Bay City	131 (1.3)	130 (1.3)	158 (1.4)	136 (1.3)	164 (1.4)

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack (TIA).

<sup>1</sup> Based on sub-LHIN planning area version 5.1.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may be counted more than once).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).







Sub-Local Health Integration Network <sup>1</sup>	2003/04 <sup>2,3</sup>			2006/07 <sup>3</sup>			2006/07 All Visits <sup>4</sup>			2007/08 Disptime <sup>3,5</sup>			2007/08 Leftedtime <sup>3,6</sup>			2007/08 All Visits Disptime <sup>4,5</sup>			2007/08 All Visits Leftedtime <sup>4,6</sup>		
	No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
Central East – Peterborough City and County	301	4.9	4.1	341	5.2	4.2	371	5.1	4.1	308	4.7	4.0	308	19.5	7.2	343	4.5	3.6	343	18.6	7.1
Central East – Scarborough Agincourt-Rouge	233	6.4	5.6	210	6.5	5.9	220	6.4	5.9	208	6.8	6.1	208	11.3	8.9	224	6.6	6.1	224	11.1	8.7
Central East – Scarborough Cliffs-Scarborough Centre	682	7.1	5.9	584	7.4	6.3	653	7.3	6.2	584	7.2	6.5	584	14.1	9.0	642	7.1	6.4	642	13.9	9.0
South East – Addington North/Central Frontenac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Belleville	143	4.7	3.4	123	4.8	4.1	142	4.6	4.1	145	5.4	4.4	145	12.3	8.7	166	5.0	4.1	166	12.0	8.1
South East – Brockville	108	3.1	2.9	125	3.7	3.3	133	3.7	3.3	123	3.7	3.2	123	4.7	4.2	139	3.7	3.1	139	4.6	4.1
South East – Central Hastings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	416	5.2	4.1	391	6.3	5.1	459	6.2	5.0	421	6.7	5.3	421	16.9	9.4	502	6.5	5.1	502	15.8	9.0
South East – North Hastings	74	3.7	2.4	30	3.4	2.7	32	3.3	2.7	30	3.4	1.9	30	5.9	2.6	32	3.4	2.0	32	5.6	2.6
South East – Prince Edward County	53	2.4	1.6	58	2.5	2.2	64	2.5	2.1	63	2.6	1.9	63	5.0	3.1	71	2.4	1.8	71	4.9	3.0
South East – Quinte West	72	6.4	4.8	68	3.2	2.6	76	3.0	2.5	74	3.5	3.2	74	13.8	5.6	77	3.4	3.1	77	13.7	5.6
South East – Rideau Lakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	140	2.2	2.0	118	2.3	1.7	136	2.3	1.7	106	2.8	2.2	106	3.0	2.4	117	2.8	2.2	117	3.0	2.3
South East – South Frontenac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	40	3.8	3.4	37	4.1	2.8	42	4.2	2.8	49	2.8	1.8	49	4.7	3.6	58	2.7	1.9	58	4.7	3.3
Champlain – North Lanark/North Grenville	88	2.4	1.5	70	2.8	2.0	81	2.7	2.0	67	1.3	1.1	67	2.3	1.4	80	1.4	1.1	80	2.4	1.4
Champlain – Ottawa	1,422	7.2	5.6	1,469	6.9	5.3	1,750	6.8	5.1	1,438	7.6	5.7	1,438	14.0	6.9	1,702	7.6	5.5	1,702	13.7	6.9
Champlain – Prescott-Russell	51	10.7	4.8	51	8.3	4.9	58	8.7	4.9	90	7.3	5.4	90	17.5	9.6	96	7.2	5.3	96	16.9	9.9
Champlain – Renfrew	213	2.8	2.1	275	3.7	2.6	315	3.6	2.6	253	3.4	2.5	253	7.9	3.9	297	3.5	2.4	297	8.2	4.0
Champlain – Stormont, Dundas and Glengarry	215	5.9	3.3	182	5.1	3.5	210	5.5	3.5	184	5.3	3.1	184	5.1	3.2	208	5.0	3.0	208	5.0	3.2
North Simcoe Muskoka – Central East	253	6.1	5.4	250	4.3	3.4	281	4.2	3.4	324	4.1	3.4	324	17.6	8.1	365	4.1	3.4	365	16.8	8.1
North Simcoe Muskoka – Central West	111	3.4	2.9	95	3.5	3.1	108	3.5	3.1	112	3.7	3.2	112	12.0	5.2	122	3.5	3.1	122	11.9	5.2
North Simcoe Muskoka – Muskoka	165	5.7	3.9	146	3.1	2.8	165	3.1	2.8	177	3.6	3.0	177	5.5	3.8	188	3.6	3.0	188	5.4	3.7
North Simcoe Muskoka – North East	144	5.1	4.3	170	3.9	3.3	189	3.7	3.3	149	3.8	2.9	149	7.6	4.9	166	3.7	2.8	166	7.6	4.8
North Simcoe Muskoka – North West	180	3.7	3.1	130	4.3	4.0	143	4.1	3.8	122	3.0	2.8	122	7.0	5.2	134	2.9	2.7	134	6.7	5.0
North East – Algoma	263	2.8	2.4	250	3.2	2.7	275	3.2	2.7	244	3.2	2.7	244	8.8	5.0	265	3.1	2.7	265	8.5	5.0
North East – Cochrane	172	3.7	3.1	140	3.4	2.5	157	3.4	2.5	123	3.2	2.6	123	6.0	3.4	135	3.1	2.6	135	5.8	3.4
North East – James and Hudson Bay Coasts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North East – Manitoulin-Sudbury	402	7.6	6.1	360	4.1	3.6	395	4.1	3.5	352	4.0	3.6	352	12.5	6.5	389	3.9	3.5	389	12.0	6.2
North East – Nipissing	219	3.2	2.4	197	2.8	2.0	223	2.8	1.9	244	2.9	2.3	244	4.8	4.0	284	2.8	2.1	284	4.5	3.4
North East – Parry Sound	51	3.0	2.0	57	3.2	2.8	61	3.2	2.7	45	2.9	2.9	45	3.8	3.3	54	2.9	2.9	54	4.4	3.3
North East – Timiskaming	55	3.6	2.1	83	2.7	1.7	90	3.2	1.9	92	2.8	2.2	92	4.3	3.3	97	2.8	2.2	97	4.2	3.2
North West – Dryden	36	3.2	2.9	33	4.2	3.7	37	3.8	3.5	28	2.8	2.5	28	3.1	2.8	32	2.9	2.5	32	3.1	2.8
North West – Kenora	61	3.6	3.0	51	3.3	3.0	56	3.3	3.1	55	3.8	3.3	55	5.9	4.1	56	3.8	3.3	56	6.2	4.2
North West – Kenora District (excl. Kenora & Dryden)	7	3.9	1.8	31	3.3	2.5	34	3.2	2.5	15	3.8	3.1	15	3.1	3.1	18	3.5	2.9	18	3.1	2.9
North West – Nipigon Red Rock Greenstone	16	2.0	1.1	20	3.2	2.8	20	3.2	2.8	12	3.7	2.6	12	4.0	2.9	13	3.6	2.6	13	3.8	2.7
North West – North Shore	12	2.7	2.2	18	4.3	3.3	21	4.1	3.2	11	3.9	3.1	11	4.7	3.4	11	3.9	3.1	11	4.7	3.4
North West – Rainy River District	47	2.9	2.0	64	2.8	2.1	73	2.8	2.1	51	3.1	2.3	51	3.3	2.7	53	3.2	2.4	53	3.3	2.8
North West – Thunder Bay City	307	7.2	4.7	279	4.6	3.9	315	4.5	3.7	270	4.8	4.2	270	9.8	6.7	310	4.7	4.0	310	10.1	7.0

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack (TIA).

<sup>1</sup> Due to differences in data collection, only 'Disptime' was reported in 2003/04.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may appear more than once).

<sup>4</sup> 'Disptime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Disptime is the time (HHMM) in which the main service provider makes the decision about the patient's disposition.

<sup>5</sup> 'Leftedtime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Leftedtime is the time (HHMM) in which the patient physically leaves the emergency department and does not return. Using this data element and REGTIME to calculate the ED length of stay is recommended.

<sup>6</sup> Based on sub-LHIN planning area version 5.1.

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).  
(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 1.6.2A Emergency department length of stay for ischemic stroke, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>1</sup>	2003/04 <sup>2,3</sup>			2006/07 <sup>3</sup>			2006/07 All Visits <sup>4</sup>			2007/08 Disptime <sup>3,5</sup>			2007/08 Leftedtime <sup>3,6</sup>			2007/08 All Visits Disptime <sup>4,5</sup>			2007/08 All Visits Leftedtime <sup>4,6</sup>		
	No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
Erie St. Clair – Essex	390	4.8	4.0	356	5.1	3.9	389	5.0	4.0	330	4.3	3.8	330	9.2	6.5	361	4.3	3.8	361	9.1	6.5
Erie St. Clair – Chatham-Kent	135	2.7	2.4	115	2.5	1.9	120	2.4	2.0	120	2.8	2.1	120	3.9	3.3	123	2.8	2.0	123	3.9	3.4
Erie St. Clair – Lambton	124	5.0	3.3	119	5.3	2.8	131	5.3	2.8	123	3.8	2.7	123	12.9	5.9	130	3.8	2.7	130	13.1	5.8
South West – Central	141	2.4	2.1	160	3.0	2.0	190	3.0	2.0	169	2.9	2.3	169	3.0	2.2	195	2.7	2.1	195	2.8	2.1
South West – North	189	2.8	2.1	190	3.4	2.9	209	3.4	2.8	191	3.4	2.7	191	3.5	2.9	218	3.2	2.5	218	3.4	2.7
South West – South	461	4.8	4.1	503	4.1	3.5	568	4.1	3.4	499	4.4	3.3	499	10.6	6.9	562	4.4	3.3	562	10.5	6.8
Waterloo Wellington – Rural - South Grey & North	30	2.0	1.8	15	2.6	1.9	17	2.6	1.9	21	1.6	1.2	21	2.1	1.9	21	1.6	1.2	21	2.1	1.9
Waterloo Wellington – Rural Waterloo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Wellington	36	2.5	2.4	19	2.2	1.9	21	2.0	1.7	39	2.4	1.9	39	3.5	3.5	45	2.3	1.9	45	3.6	3.4
Waterloo Wellington – Urban Guelph	71	4.2	3.9	68	5.6	5.3	71	5.4	5.2	59	6.4	5.7	59	8.2	7.1	68	6.1	5.6	68	8.2	7.0
Waterloo Wellington – Urban Waterloo & Rural Waterloo	374	5.0	4.3	355	5.2	4.9	383	5.0	4.8	351	4.8	4.0	351	11.5	7.5	393	4.7	3.9	393	11.5	7.5
Hamilton Niagara Haldimand Brant – Brant	**	0.8	0.8	**	1.0	0.9	**	1.0	0.9	**	1.4	1.3	**	1.4	1.3	**	1.4	1.3	**	1.4	1.3
Hamilton Niagara Haldimand Brant – Brantford	117	7.0	6.4	139	5.6	4.4	159	5.3	4.2	151	4.5	4.2	151	12.3	7.8	164	4.5	4.1	164	12.3	7.8
Hamilton Niagara Haldimand Brant – Burlington	126	10.2	6.0	117	6.8	5.8	124	7.0	5.8	120	7.2	6.5	120	31.5	25.0	133	7.0	6.3	133	30.9	24.4
Hamilton Niagara Haldimand Brant – Fort Erie	18	4.5	4.0	17	2.9	2.3	24	2.5	2.0	19	3.0	2.5	19	3.1	2.7	20	2.9	2.2	20	3.1	2.7
Hamilton Niagara Haldimand Brant – Grimsby	32	3.6	2.5	22	4.5	3.9	25	4.3	3.7	30	5.3	4.4	30	9.5	8.3	33	5.1	4.4	33	9.4	8.0
Hamilton Niagara Haldimand Brant – Haldimand	41	2.7	1.8	51	3.8	2.9	61	3.7	2.9	35	4.1	4.1	35	5.2	4.4	35	4.1	4.1	35	5.2	4.4
Hamilton Niagara Haldimand Brant – Hamilton	565	7.2	6.7	517	7.1	6.7	569	7.0	6.6	510	6.9	6.7	510	16.8	9.3	551	6.9	6.7	551	16.7	9.3
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	95	7.3	4.9	166	5.7	3.4	178	5.5	3.1	157	7.4	3.6	157	14.6	8.1	178	7.3	3.4	178	14.5	7.7
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Norfolk	71	3.5	3.1	47	2.8	2.8	51	3.1	2.9	63	2.9	2.7	63	4.8	4.4	68	2.9	2.6	68	8.6	4.4
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	16	4.6	4.0	15	3.2	2.8	15	3.2	2.8	9	3.3	2.9	9	4.9	2.9	9	3.3	2.9	9	4.9	2.9
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	178	4.9	4.5	149	5.8	4.8	170	5.5	4.7	168	6.8	5.4	168	14.9	10.3	194	6.3	5.1	194	14.3	9.9
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	59	7.0	6.2	62	6.8	5.6	67	6.5	5.4	49	6.9	4.6	49	11.8	7.9	56	6.5	4.2	56	11.6	7.7
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Brampton	180	7.5	6.7	156	8.9	8.5	174	8.7	8.2	176	8.9	8.4	176	23.2	12.7	191	8.8	8.3	191	22.8	12.6
Central West – Caledon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Orangeville	81	5.1	3.8	54	4.5	3.8	55	4.5	3.7	65	4.5	4.4	65	6.6	6.0	76	4.2	4.2	76	6.5	5.8
Central West – Rexdale (Toronto)	233	6.8	6.1	166	7.2	6.6	178	7.1	6.6	141	7.3	6.8	141	28.9	19.0	152	7.1	6.7	152	28.3	18.4
Central West – Woodbridge (Vaughan)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mississauga Halton – Halton Hills	32	2.6	2.8	18	4.1	3.8	20	3.9	3.7	34	3.4	2.4	34	6.0	4.2	36	3.3	2.0	36	5.7	4.1
Mississauga Halton – Milton	15	7.7	6.3	27	4.5	3.6	28	4.5	3.7	12	5.1	2.1	12	14.2	7.0	14	4.5	1.9	14	14.8	14.9
Mississauga Halton – Northwest Mississauga	132	6.6	6.2	122	7.4	7.0	129	7.3	6.9	128	8.3	7.5	128	35.2	26.9	139	8.5	7.6	139	36.2	26.9
Mississauga Halton – Oakville	77	5.5	4.5	107	6.3	5.5	117	6.1	5.3	108	5.8	4.8	108	6.4	4.8	118	5.7	4.8	118	6.5	4.8
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	376	9.0	6.2	429	5.3	4.0	460	5.3	4.1	431	5.3	4.1	431	13.2	7.6	460	5.3	4.1	460	13.1	7.5
Toronto Central – East	214	6.5	6.0	142	7.9	7.0	155	7.9	7.1	128	7.0	6.6	128	24.2	21.0	142	7.0	6.4	142	23.7	19.3
Toronto Central – North East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toronto Central – North Toronto	227	12.2	11.1	242	8.2	7.0	258	8.1	6.9	270	7.7	6.6	270	12.0	9.2	291	7.8	6.6	291	12.1	9.3
Toronto Central – North West	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toronto Central – South East	90	9.4	8.3	138	13.6	10.9	159	13.3	9.8	152	9.1	7.0	152	17.7	12.1	164	9.2	7.1	164	18.6	12.5
Toronto Central – South West	322	10.2	9.5	431	12.2	9.2	467	11.9	9.1	412	7.9	7.1	412	26.8	18.1	451	7.8	7.1	451	26.1	18.1
Toronto Central – West	224	21.5	18.5	179	9.8	8.4	202	9.8	8.3	189	8.5	7.3	189	22.2	16.3	204	8.3	7.1	204	21.7	16.2
Central – Central York Region	179	5.7	5.3	162	6.8	6.5	179	6.7	6.4	147	7.9	7.1	147	9.3	7.8	167	7.8	7.0	167	9.1	7.8
Central – North York East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central – North York Central	189	7.6	6.8	227	8.2	7.6	244	8.0	7.4	194	8.0	7.5	194	20.1	19.7	224	7.8	7.2	224	19.9	19.2
Central – North York West	344	6.7	6.0	278	7.5	6.5	297	7.6	6.5	253	8.8	7.8	253	10.7	8.9	274	8.6	7.7	274	10.4	8.3
Central – South East York Region	295	6.7	5.7	391	6.7	6.1	424	6.7	6.1	371	6.7	6.0	371	15.9	11.4	402	6.7	5.9	402	16.2	11.7
Central – South Simcoe & Northern York Region	20	4.0	3.3	17	6.1	3.9	17	6.1	3.9	17	4.6	3.7	17	5.3	4.5	17	4.6	3.7	17	5.3	4.5
Central – South West York Region	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central East – Durham East	250	8.5	5.1	283	5.9	4.9	320	5.8	4.8	249	7.0	5.6	249	33.8	8.2	265	7.0	5.6	265	32.3	8.1
Central East – Durham North/Central	48	2.9	2.7	41	4.2	3.6	45	4.2	3.5	44	3.4	2.9	44	7.3	5.2	48	3.3	2.8	48	6.8	5.0
Central East – Durham West	77	9.4	8.0	112	8.8	7.4	124	8.8	7.3	93	8.5	7.0	93	27.9	17.3	98	8.5	6.9	98	28.4	17.1
Central East – Haliburton Highlands	28	4.4	2.1	17	4.8	4.6	21	5.4	3.4	26	4.2	2.1	26	3.5	1.8	28	4.3	2.4	28	3.8	1.8
Central East – Kawartha Lakes	62	3.8	2.8	65	8.9	6.1	78	8.7	5.9	68	7.9	5.4	68	14.8	9.9	85	7.8	5.0	85	38.8	11.4
Central East – Northumberland-Havelock	85	3.9	3.8	82	4.0	3.5	97	3.9	3.5	80	4.8	3.9	80	7.0	5.3	94	4.8	4.0	94	7.1	5.4

Sub-Local Health Integration Network <sup>1</sup>	2003/04 <sup>2,3</sup>			2006/07 <sup>3</sup>			2006/07 All Visits <sup>4</sup>			2007/08 Disptime <sup>3,5</sup>			2007/08 Leftedtime <sup>3,6</sup>			2007/08 All Visits Disptime <sup>4,5</sup>			2007/08 All Visits Leftedtime <sup>4,6</sup>		
	No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
Central East – Peterborough City and County	173	4.7	4.1	190	4.7	3.7	206	4.8	3.7	168	4.6	3.4	168	22.1	7.0	184	4.4	3.1	184	20.6	6.6
Central East – Scarborough Agincourt-Rouge	167	6.6	5.8	145	6.8	6.2	153	6.7	6.1	130	6.8	6.3	130	12.3	9.9	141	6.6	6.3	141	12.0	9.5
Central East – Scarborough Cliffs-Scarborough Centre	437	7.7	6.3	347	7.6	6.4	389	7.7	6.4	346	7.4	6.7	346	16.8	10.1	381	7.3	6.6	381	16.7	10.1
South East – Addington North/Central Frontenac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Belleville	73	3.9	3.1	65	5.4	4.4	78	5.2	4.3	84	5.6	5.2	84	13.9	9.7	98	5.1	4.2	98	13.4	9.2
South East – Brockville	73	3.2	3.0	71	3.8	3.3	75	3.7	3.3	64	3.2	3.0	64	4.3	4.1	73	3.1	2.9	73	4.1	4.0
South East – Central Hastings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	253	5.6	4.7	213	6.4	5.2	247	6.5	5.1	255	6.7	5.4	255	21.3	10.6	291	6.5	5.3	291	19.9	10.2
South East – North Hastings	19	5.3	3.5	7	4.7	2.8	7	4.7	2.8	14	2.2	1.9	14	6.0	3.3	14	2.2	1.9	14	6.0	3.3
South East – Prince Edward County	23	2.5	2.1	19	3.0	2.9	23	2.8	2.6	30	2.6	2.2	30	3.3	3.2	32	2.5	2.0	32	3.7	3.2
South East – Quinte West	44	6.8	5.0	35	3.0	2.1	39	2.8	1.9	44	3.4	2.7	44	17.5	7.6	46	3.3	2.7	46	17.2	7.7
South East – Rideau Lakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	52	2.2	2.0	57	2.7	1.8	62	2.8	1.8	47	3.3	2.2	47	3.6	2.9	52	3.2	2.2	52	3.6	2.8
South East – South Frontenac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	20	4.0	3.7	15	5.3	4.0	17	4.9	3.0	20	2.8	1.3	20	4.7	2.8	24	2.7	1.8	24	5.3	2.9
Champlain – North Lanark/North Grenville	46	2.0	1.5	28	2.2	1.4	34	2.1	1.4	30	1.1	1.0	30	1.3	1.1	36	1.2	1.1	36	1.5	1.1
Champlain – Ottawa	755	8.2	6.8	753	8.0	6.0	860	8.0	5.9	742	8.8	6.4	742	19.1	8.9	858	9.0	6.3	858	18.3	8.9
Champlain – Prescott-Russell	27	13.9	6.8	29	9.3	4.9	32	9.2	4.9	51	7.7	5.9	51	20.2	14.0	54	7.6	5.8	54	19.6	12.9
Champlain – Renfrew	105	3.0	2.0	144	3.4	2.4	164	3.4	2.4	125	2.9	2.3	125	8.0	4.2	151	2.9	2.2	151	7.8	4.0
Champlain – Stormont, Dundas and Glengarry	104	5.7	3.3	91	5.4	3.5	102	5.8	3.5	91	4.6	3.1	91	5.2	3.4	104	4.4	3.0	104	5.2	3.4
North Simcoe Muskoka – Central East	121	6.9	5.9	137	3.7	3.1	150	3.7	3.1	172	3.7	3.0	172	22.6	9.1	192	3.8	3.1	192	21.5	9.3
North Simcoe Muskoka – Central West	54	3.7	3.2	54	3.6	3.1	62	3.4	3.1	58	3.8	3.6	58	13.9	5.7	66	3.5	3.2	66	13.6	5.7
North Simcoe Muskoka – Muskoka	80	5.6	4.3	69	2.6	2.4	79	2.7	2.5	72	3.6	3.1	72	6.1	4.3	74	3.5	3.0	74	6.1	4.3
North Simcoe Muskoka – North East	77	5.1	4.5	88	4.0	3.4	100	3.8	3.3	67	3.7	2.7	67	9.8	6.9	81	3.5	2.6	81	9.2	6.1
North Simcoe Muskoka – North West	79	4.5	4.1	55	4.6	4.5	59	4.5	4.3	77	2.7	2.7	77	7.4	5.0	84	2.5	2.5	84	7.1	5.0
North East – Algoma	143	2.7	2.3	140	2.9	2.6	148	2.9	2.6	134	2.9	2.7	134	5.8	5.3	145	2.9	2.7	145	5.8	5.3
North East – Cochrane	79	4.2	3.5	71	3.5	2.9	81	3.7	2.9	56	2.9	2.7	56	5.8	3.8	60	2.9	2.7	60	5.6	3.6
North East – James and Hudson Bay Coasts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North East – Manitoulin-Sudbury	221	8.4	6.8	189	4.0	3.5	203	3.9	3.4	183	3.9	3.5	183	11.6	8.4	195	3.8	3.4	195	11.3	8.1
North East – Nipissing	99	2.5	2.3	94	2.3	1.9	104	2.3	1.9	105	2.9	1.9	105	5.1	4.3	120	2.7	1.9	120	4.9	3.8
North East – Parry Sound	20	2.3	1.9	36	3.0	2.6	37	3.0	2.6	25	2.6	2.5	25	3.7	3.0	27	2.6	2.5	27	4.8	3.1
North East – Timiskaming	29	4.0	2.3	47	2.6	1.7	50	3.5	1.8	46	2.4	2.1	46	3.4	2.9	49	2.3	2.0	49	3.4	2.9
North West – Dryden	16	3.3	3.0	21	3.9	3.0	23	3.7	2.7	15	3.1	2.6	15	3.3	3.7	17	3.1	2.6	17	3.3	3.7
North West – Kenora	30	3.7	3.5	31	2.9	2.9	33	3.0	2.9	34	3.9	3.1	34	5.5	4.4	35	3.9	3.2	35	6.1	4.6
North West – Kenora District (excl. Kenora & Dryden)	**	1.8	1.5	23	2.6	2.5	26	2.5	2.5	10	4.2	3.2	10	3.1	3.2	12	3.7	2.9	12	3.1	3.2
North West – Nipigon Red Rock Greenstone	8	0.9	0.9	14	3.1	2.9	14	3.1	2.9	**	4.6	4.0	**	5.8	4.0	**	4.6	4.0	**	5.8	4.0
North West – North Shore	**	2.5	1.5	7	2.7	2.6	9	2.4	2.2	8	4.8	3.4	8	5.3	3.5	8	4.8	3.4	8	5.3	3.5
North West – Rainy River District	25	2.3	2.3	35	2.9	2.3	40	2.9	2.3	32	2.9	2.2	32	2.7	2.2	32	2.9	2.2	32	2.7	2.2
North West – Thunder Bay City	155	7.6	4.3	160	4.2	3.6	178	4.0	3.3	148	4.7	3.9	148	10.8	7.7	176	4.6	3.7	176	11.0	8.1

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of ischemic stroke.

<sup>1</sup> Due to differences in data collection, only 'Disptime' was reported in 2003/04.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may appear more than once).

<sup>4</sup> 'Disptime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Disptime is the time (HHMM) in which the main service provider makes the decision about the patient's disposition.

<sup>5</sup> 'Leftedtime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Leftedtime is the time (HHMM) in which the patient physically leaves the emergency department and does not return. Using this data element and REGTIME to calculate the ED length of stay is recommended.

<sup>6</sup> Based on sub-LHIN planning area version 5.1.

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).  
(2) Cells in which there was no reported/available data are marked with a hyphen (-).

Exhibit 1.6.3A Emergency department length of stay for transient ischemic attack, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08

Sub-Local Health Integration Network <sup>1</sup>	2003/04 <sup>2,3</sup>			2006/07 <sup>3</sup>			2006/07 All Visits <sup>4</sup>			2007/08 Disptime <sup>3,5</sup>			2007/08 Leftedtime <sup>3,6</sup>			2007/08 All Visits Disptime <sup>4,5</sup>			2007/08 All Visits Leftedtime <sup>4,6</sup>		
	No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
Erie St. Clair – Essex	287	5.7	4.9	241	5.2	4.4	264	5.1	4.4	236	5.0	4.1	236	6.0	4.6	262	5.1	4.2	262	6.1	4.6
Erie St. Clair – Chatham-Kent	80	2.9	2.5	94	3.5	2.7	106	3.3	2.5	84	3.3	2.8	84	3.8	3.1	94	3.3	2.6	94	3.8	3.1
Erie St. Clair – Lambton	98	3.9	3.0	94	5.1	3.3	108	4.9	3.2	73	4.0	2.6	73	4.1	3.1	80	4.4	2.6	80	5.8	3.2
South West – Central	72	2.3	2.1	112	2.9	2.3	125	2.9	2.2	87	2.8	2.5	87	3.0	2.5	101	2.6	2.4	101	2.8	2.5
South West – North	127	2.5	2.0	133	3.1	1.9	145	3.2	1.9	127	3.1	2.5	127	3.3	2.6	151	2.9	2.2	151	3.1	2.3
South West – South	281	3.6	3.2	399	4.1	3.4	442	4.1	3.3	391	4.1	3.3	391	5.8	4.0	441	4.0	3.2	441	5.7	3.9
Waterloo Wellington – Rural - South Grey & North	16	4.8	1.9	17	1.6	1.2	17	1.6	1.2	17	2.1	0.9	17	1.9	1.5	18	2.1	0.9	18	1.8	1.4
Waterloo Wellington – Rural Waterloo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Wellington	14	3.4	3.6	14	3.1	3.2	18	3.1	3.2	20	2.5	2.1	20	3.0	2.6	24	2.6	2.4	24	3.1	2.6
Waterloo Wellington – Urban Guelph	45	3.9	3.4	52	4.7	3.8	62	4.4	3.5	44	5.0	4.5	44	6.4	5.1	49	4.9	4.5	49	6.1	5.1
Waterloo Wellington – Urban Waterloo & Rural Waterloo	216	4.2	3.8	248	5.2	4.9	280	5.2	4.8	228	5.1	4.6	228	7.4	5.0	248	5.2	4.6	248	7.5	5.0
Hamilton Niagara Haldimand Brant – Brant	**	1.5	1.7	**	1.3	1.2	**	1.3	1.2	**	1.8	1.8	**	1.8	1.8	**	1.8	1.8	**	1.8	1.8
Hamilton Niagara Haldimand Brant – Brantford	89	6.2	5.4	108	5.1	4.6	127	5.0	4.4	110	5.2	4.3	110	6.6	5.4	126	5.4	4.5	126	6.9	5.4
Hamilton Niagara Haldimand Brant – Burlington	68	6.8	4.6	60	6.9	5.3	68	6.6	5.1	72	6.5	4.8	72	16.4	6.5	84	6.7	4.9	84	19.6	6.7
Hamilton Niagara Haldimand Brant – Fort Erie	11	2.5	2.9	13	2.7	2.5	14	2.9	2.6	11	3.7	2.4	11	4.2	2.8	12	3.5	2.0	12	4.6	3.5
Hamilton Niagara Haldimand Brant – Grimsby	27	5.5	3.1	23	3.6	3.0	27	4.0	3.2	21	3.7	2.9	21	6.1	2.5	24	3.5	2.5	24	5.9	2.5
Hamilton Niagara Haldimand Brant – Haldimand	41	2.5	2.1	30	3.3	3.0	35	3.3	3.0	36	3.2	2.6	36	3.6	3.2	40	3.2	2.6	40	3.6	3.3
Hamilton Niagara Haldimand Brant – Hamilton	311	5.6	4.7	317	5.9	5.4	348	5.8	5.3	350	6.2	5.2	350	9.2	6.0	385	6.1	5.2	385	9.1	6.0
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	61	5.8	3.1	65	4.9	3.5	76	5.0	3.6	77	7.5	4.1	77	8.6	4.4	88	7.2	4.0	88	8.6	4.4
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Norfolk	51	3.9	3.2	41	3.2	3.1	46	3.0	3.1	44	3.8	3.7	44	4.3	3.8	48	3.7	3.7	48	4.2	3.8
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	28	2.9	2.3	7	2.8	2.7	7	2.8	2.7	9	4.1	4.2	9	4.4	4.6	9	4.1	4.2	9	4.4	4.6
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	155	5.6	5.4	140	6.6	5.8	165	6.5	5.7	145	7.4	5.8	145	10.0	6.6	164	7.1	5.5	164	9.7	6.3
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	29	6.4	4.8	25	9.2	5.6	28	8.9	5.6	29	6.6	5.3	29	8.8	7.1	31	6.3	5.2	31	8.4	6.9
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Brampton	86	6.0	5.4	83	7.8	7.2	86	8.1	7.2	93	7.5	6.8	93	13.1	8.1	102	7.2	6.7	102	12.6	8.1
Central West – Caledon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Orangeville	37	4.2	3.5	43	3.7	3.6	49	3.5	3.5	46	3.8	3.4	46	4.9	3.7	51	3.7	3.4	51	5.0	3.7
Central West – Rexdale (Toronto)	74	5.9	5.3	65	6.4	6.1	67	6.6	6.1	61	6.5	5.9	61	25.3	7.0	63	6.3	5.8	63	24.5	6.9
Central West – Woodbridge (Vaughan)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mississauga Halton – Halton Hills	18	2.5	1.9	22	3.4	2.3	22	3.4	2.3	18	4.4	3.9	18	5.1	4.7	20	4.2	3.5	20	4.8	4.0
Mississauga Halton – Milton	18	3.8	2.6	18	6.3	3.7	20	6.1	3.7	12	4.7	2.9	12	9.9	3.6	13	4.5	2.9	13	18.8	4.3
Mississauga Halton – Northwest Mississauga	65	6.6	6.6	59	6.3	6.0	64	6.4	6.1	74	6.0	5.6	74	13.3	6.3	78	5.8	5.5	78	13.4	6.3
Mississauga Halton – Oakville	83	4.6	3.5	88	4.9	4.1	100	5.0	4.3	74	4.9	4.7	74	5.4	4.3	82	5.1	4.7	82	5.3	4.5
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	187	6.1	4.7	220	5.4	4.7	241	5.5	4.8	198	6.1	5.4	198	7.8	5.8	210	6.1	5.3	210	8.3	5.9
Toronto Central – East	100	6.1	5.7	76	7.1	6.4	84	7.1	6.4	81	7.3	6.8	81	13.1	7.4	88	7.4	6.8	88	13.0	7.2
Toronto Central – North East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toronto Central – North Toronto	133	8.1	6.8	158	7.9	7.1	175	7.9	7.2	179	8.1	7.5	179	9.3	7.9	207	8.1	7.5	207	9.4	8.1
Toronto Central – North West	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toronto Central – South East	40	7.2	5.6	84	9.9	5.8	90	9.7	5.9	83	7.0	5.5	83	14.2	7.8	87	7.0	5.7	87	14.0	7.8
Toronto Central – South West	177	8.0	7.0	179	8.6	6.7	194	8.7	6.9	210	7.2	5.5	210	15.2	6.5	232	7.1	5.5	232	15.1	7.0
Toronto Central – West	67	10.9	6.5	87	5.9	5.3	106	5.3	4.8	99	6.0	5.3	99	7.8	6.1	124	5.6	4.9	124	9.9	5.6
Central – Central York Region	111	4.4	4.0	104	5.8	5.4	111	5.8	5.4	112	6.1	5.3	112	6.0	5.1	129	6.2	5.4	129	6.0	5.0
Central – North York East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central – North York Central	101	6.5	5.2	82	8.0	6.9	94	7.8	6.9	111	8.6	7.4	111	16.3	14.4	119	8.6	7.4	119	16.6	14.5
Central – North York West	121	6.7	6.0	117	7.7	6.6	127	7.8	6.6	128	7.7	7.0	128	9.4	7.7	140	7.6	6.8	140	9.1	7.5
Central – South East York Region	138	5.5	4.8	173	6.4	5.4	197	6.3	5.2	191	6.9	6.1	191	11.6	7.2	221	6.6	5.8	221	11.6	7.1
Central – South Simcoe & Northern York Region	23	5.0	2.7	18	3.7	3.2	18	3.7	3.2	15	2.9	2.9	15	3.5	3.0	16	2.9	2.9	16	3.5	3.1
Central – South West York Region	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central East – Durham East	134	4.2	3.3	168	4.3	3.9	188	4.2	3.9	173	4.7	4.2	173	5.4	4.3	198	4.6	4.1	198	5.6	4.2
Central East – Durham North/Central	51	2.7	2.2	35	3.3	2.8	37	3.2	2.8	48	3.6	2.7	48	4.2	2.8	53	3.5	2.7	53	4.0	2.7
Central East – Durham West	63	6.0	4.4	68	5.2	4.6	73	5.5	4.7	64	6.0	4.9	64	13.8	5.7	70	5.8	4.9	70	13.0	5.5
Central East – Haliburton Highlands	25	3.6	1.7	13	2.2	1.6	13	2.2	1.6	26	3.6	1.6	26	4.1	2.0	29	4.3	1.7	29	4.0	2.1
Central East – Kawartha Lakes	42	5.0	3.3	31	5.7	3.5	35	5.8	3.6	45	6.1	3.7	45	6.7	3.6	54	6.3	3.8	54	7.5	4.2
Central East – Northumberland-Havelock	58	4.3	3.5	83	3.3	3.1	101	3.2	2.9	90	4.6	3.5	90	5.3	3.6	108	4.4	3.5	108	5.1	3.6

Sub-Local Health Integration Network <sup>1</sup>	2003/04 <sup>2,3</sup>			2006/07 <sup>3</sup>			2006/07 All Visits <sup>4</sup>			2007/08 Disptime <sup>3,5</sup>			2007/08 Leftedtime <sup>3,6</sup>			2007/08 All Visits Disptime <sup>4,5</sup>			2007/08 All Visits Leftedtime <sup>4,6</sup>		
	No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
Central East – Peterborough City and County	103	4.9	4.1	115	6.0	4.4	129	5.7	4.3	112	4.7	4.0	112	13.2	10.3	125	4.4	4.0	125	15.5	10.7
Central East – Scarborough Agincourt-Rouge	49	6.3	5.0	46	5.5	5.0	48	5.4	4.9	45	7.0	5.7	45	9.2	6.9	48	6.9	5.6	48	9.0	6.8
Central East – Scarborough Cliffs-Scarborough Centre	179	6.0	5.0	174	7.0	6.0	196	6.8	5.8	177	6.9	6.1	177	9.5	6.6	197	6.8	6.1	197	9.2	6.7
South East – Addington North/Central Frontenac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Belleville	61	5.7	4.1	46	4.0	3.8	52	3.9	3.8	49	5.0	4.2	49	8.5	4.9	55	4.8	4.0	55	8.3	4.9
South East – Brockville	32	3.0	2.6	46	3.4	3.1	49	3.5	3.1	47	3.9	3.5	47	4.7	4.0	53	4.0	3.5	53	4.8	4.1
South East – Central Hastings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	112	4.7	3.9	132	6.0	5.3	154	6.1	5.3	110	6.7	5.4	110	9.6	7.3	138	6.7	5.6	138	9.4	7.3
South East – North Hastings	24	2.7	1.6	20	3.1	2.7	22	2.9	2.5	15	4.1	1.9	15	5.8	2.0	17	4.0	2.0	17	5.2	2.0
South East – Prince Edward County	29	2.3	1.3	39	2.3	2.1	41	2.2	2.1	30	2.2	1.8	30	7.4	3.1	36	2.1	1.7	36	6.4	2.7
South East – Quinte West	26	5.9	4.6	31	3.2	3.1	35	3.2	2.9	25	3.5	3.4	25	5.8	4.5	26	3.4	3.4	26	5.8	4.5
South East – Rideau Lakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	84	2.2	2.0	57	2.0	1.7	70	1.9	1.6	57	2.5	2.2	57	2.5	2.2	63	2.5	2.2	63	2.6	2.2
South East – South Frontenac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	20	3.6	2.8	21	3.3	2.4	24	3.9	2.6	26	3.1	2.5	26	4.8	4.2	31	2.9	2.3	31	4.4	3.6
Champlain – North Lanark/North Grenville	41	2.8	1.5	40	3.0	2.1	45	2.9	2.1	36	1.6	1.3	36	3.2	1.9	42	1.6	1.4	42	3.4	1.9
Champlain – Ottawa	477	5.5	4.6	537	5.6	4.9	638	5.7	4.9	495	6.1	5.1	495	7.4	5.6	586	6.1	5.0	586	7.6	5.6
Champlain – Prescott-Russell	23	7.2	3.7	22	6.7	4.6	26	8.0	4.6	28	7.1	5.3	28	12.0	5.4	31	6.8	4.7	31	11.7	5.5
Champlain – Renfrew	133	2.7	2.1	121	4.2	2.8	139	4.0	2.7	122	4.0	2.6	122	8.1	3.6	140	4.1	2.8	140	9.1	3.9
Champlain – Stormont, Dundas and Glengarry	98	6.1	3.1	83	4.8	3.2	98	5.0	3.2	85	6.2	3.2	85	5.2	3.1	96	5.9	3.0	96	4.9	2.9
North Simcoe Muskoka – Central East	105	5.6	4.9	83	4.5	3.6	98	4.4	3.6	116	4.8	4.0	116	10.5	9.0	136	4.8	3.9	136	10.0	8.4
North Simcoe Muskoka – Central West	48	2.7	2.2	32	3.4	3.2	36	3.6	3.4	45	3.4	2.9	45	10.8	5.0	46	3.3	2.9	46	10.9	5.4
North Simcoe Muskoka – Muskoka	78	5.8	3.3	63	3.4	3.1	70	3.4	3.1	83	3.4	2.9	83	4.6	3.4	92	3.4	2.9	92	4.5	3.2
North Simcoe Muskoka – North East	52	5.2	3.8	60	3.6	3.1	64	3.6	3.1	66	3.9	2.9	66	5.4	3.2	68	3.9	2.9	68	5.7	3.2
North Simcoe Muskoka – North West	94	2.9	2.5	70	3.7	3.1	79	3.6	2.9	41	3.6	3.1	41	5.4	5.2	46	3.6	3.0	46	5.4	5.1
North East – Algoma	107	3.2	2.7	90	4.0	3.4	106	3.9	3.4	91	3.3	2.8	91	14.9	4.7	100	3.2	2.7	100	13.8	4.5
North East – Cochrane	79	3.2	2.4	62	3.2	2.3	68	3.1	2.2	59	3.3	2.3	59	4.4	2.7	66	3.2	2.2	66	4.3	2.6
North East – James and Hudson Bay Coasts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North East – Manitoulin-Sudbury	142	6.2	5.3	145	4.2	3.8	165	4.4	3.8	130	4.1	3.8	130	15.3	5.4	151	4.1	3.7	151	14.4	5.3
North East – Nipissing	106	3.9	2.4	94	3.2	1.9	110	3.2	1.9	121	3.0	2.6	121	4.5	3.8	146	2.8	2.4	146	4.0	3.1
North East – Parry Sound	28	2.7	2.1	14	2.9	2.7	17	2.8	2.7	16	3.2	3.2	16	3.7	4.0	23	3.0	3.2	23	3.4	3.3
North East – Timiskaming	25	2.7	1.8	33	2.8	1.6	37	2.7	1.7	42	3.1	2.3	42	4.6	2.8	44	3.0	2.3	44	4.6	3.1
North West – Dryden	20	3.0	2.7	11	4.6	4.8	13	4.0	3.7	13	2.6	2.3	13	2.8	2.3	15	2.7	2.3	15	2.9	2.3
North West – Kenora	30	3.5	3.0	16	3.5	3.2	19	3.4	3.0	18	3.6	3.5	18	6.9	3.4	18	3.6	3.5	18	6.9	3.4
North West – Kenora District (excl. Kenora & Dryden)	**	6.8	2.1	8	5.3	2.6	8	5.3	2.6	**	2.9	2.9	**	2.7	2.7	**	2.8	2.8	**	2.7	2.5
North West – Nipigon Red Rock Greenstone	7	3.1	1.4	6	3.5	2.1	6	3.5	2.1	7	3.1	2.1	7	2.3	2.1	8	3.0	2.1	8	2.2	2.1
North West – North Shore	6	2.8	2.2	11	5.4	4.6	12	5.3	4.4	**	1.7	1.3	**	0.7	0.7	**	1.7	1.3	**	0.7	0.7
North West – Rainy River District	20	3.5	1.9	26	2.5	1.6	30	2.5	1.7	18	3.3	2.4	18	5.2	3.7	20	3.5	2.8	20	5.0	3.9
North West – Thunder Bay City	126	7.2	5.3	87	5.3	4.3	101	5.2	4.3	93	5.1	4.8	93	9.0	6.1	104	4.9	4.7	104	9.5	6.1

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of transient ischemic attack.

<sup>1</sup> Due to differences in data collection, only 'Disptime' was reported in 2003/04.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may appear more than once).

<sup>4</sup> 'Disptime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Disptime is the time (HHMM) in which the main service provider makes the decision about the patient's disposition.

<sup>5</sup> 'Leftedtime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Leftedtime is the time (HHMM) in which the patient physically leaves the emergency department and does not return. Using this data element and REGTIME to calculate the ED length of stay is recommended.

<sup>6</sup> Based on sub-LHIN planning area version 5.1.

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 1.6.4A Emergency department length of stay for intracerebral hemorrhage, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>1</sup>	2003/04 <sup>2,3</sup>			2006/07 <sup>3</sup>			2006/07 All Visits <sup>4</sup>			2007/08 Disptime <sup>3,5</sup>			2007/08 Leftedtime <sup>3,6</sup>			2007/08 All Visits Disptime <sup>4,5</sup>			2007/08 All Visits Leftedtime <sup>4,6</sup>		
	No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
Erie St. Clair – Essex	40	3.9	3.4	43	4.1	3.2	46	4.0	3.2	46	3.7	3.1	46	6.0	4.9	49	3.6	2.8	49	5.9	5.1
Erie St. Clair – Chatham-Kent	9	5.6	5.0	7	3.5	2.5	9	2.9	2.3	10	3.1	1.9	10	4.8	3.7	11	2.9	1.6	11	4.8	3.7
Erie St. Clair – Lambton	-	-	-	13	6.4	2.6	13	6.4	2.6	11	3.3	3.1	11	8.1	5.9	13	3.2	3.1	13	7.7	5.3
South West – Central	10	2.2	1.9	11	3.7	3.6	11	3.7	3.6	11	2.7	2.1	11	2.9	2.5	13	2.4	2.0	13	2.6	2.5
South West – North	19	2.4	2.7	10	3.5	3.1	11	3.6	3.3	20	3.4	2.5	20	3.4	2.5	20	3.4	2.5	20	3.4	2.5
South West – South	56	4.7	4.1	63	3.6	3.0	69	3.6	3.0	68	4.3	3.3	68	11.2	6.8	81	4.3	3.4	81	11.7	7.3
Waterloo Wellington – Rural - South Grey & North Wellington	**	1.3	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Waterloo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Wellington	**	1.7	1.6	**	4.4	4.4	**	4.4	4.4	**	2.7	2.5	**	4.2	5.2	**	2.7	2.5	**	4.2	5.2
Waterloo Wellington – Urban Guelph	9	4.0	4.3	15	4.8	3.7	16	4.5	3.6	6	6.3	5.0	6	7.8	5.0	6	6.3	5.0	6	7.8	5.0
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	37	3.7	3.2	54	5.0	4.5	57	4.8	4.2	53	5.0	4.3	53	7.8	5.6	58	5.2	4.3	58	7.8	5.6
Hamilton Niagara Haldimand Brant – Brant	15	5.5	4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	11	6.7	4.3	18	4.8	4.8	19	4.8	4.6	22	4.8	4.2	22	9.8	6.1	22	4.8	4.2	22	9.8	6.1
Hamilton Niagara Haldimand Brant – Burlington	**	2.2	2.2	22	5.9	4.2	23	6.4	4.4	17	6.7	6.4	17	17.0	10.6	17	6.7	6.4	17	17.0	10.6
Hamilton Niagara Haldimand Brant – Fort Erie	**	4.0	4.0	**	1.3	1.3	**	1.3	1.3	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Grimsby	-	-	-	**	1.5	1.5	**	1.5	1.5	**	10.5	10.5	**	11.7	11.7	**	10.5	10.5	**	11.7	11.7
Hamilton Niagara Haldimand Brant – Haldimand	84	5.0	4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Hamilton	-	-	-	46	6.3	6.0	49	6.0	5.5	57	6.4	5.3	57	13.4	8.1	62	6.1	5.2	62	13.2	8.1
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	11	4.5	3.3	18	3.7	2.2	20	3.4	2.1	22	3.5	2.8	22	12.6	5.9	23	3.4	2.7	23	12.4	5.9
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Norfolk	**	3.8	3.8	**	4.2	3.8	6	4.1	3.8	**	5.6	5.6	**	8.7	8.7	**	5.6	5.6	**	8.7	8.7
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	**	6.9	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	18	4.1	3.4	13	5.6	5.0	16	5.2	4.4	20	5.1	5.1	20	7.8	6.7	23	4.9	4.9	23	7.5	6.0
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	**	11.6	11.8	10	5.2	4.9	11	5.2	4.9	**	5.9	5.9	**	9.4	10.3	**	5.9	5.9	**	9.4	10.3
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Brampton	28	8.7	7.5	21	9.5	8.6	25	9.2	8.6	21	9.7	6.5	21	18.6	13.4	22	9.6	6.6	22	18.3	12.6
Central West – Caledon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Orangeville	13	4.8	4.7	17	4.4	3.9	18	4.2	3.9	14	4.8	4.4	14	8.5	7.3	14	4.8	4.4	14	8.5	7.3
Central West – Rexdale (Toronto)	23	6.1	4.7	15	5.9	6.6	15	5.9	6.6	23	8.4	8.4	23	22.6	10.2	24	8.2	8.3	24	22.1	10.5
Central West – Woodbridge (Vaughan)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mississauga Halton – Halton Hills	**	6.4	7.2	-	-	-	**	25.7	25.7	**	4.5	4.5	**	5.3	5.3	**	4.5	4.5	**	5.3	5.3
Mississauga Halton – Milton	-	-	-	**	1.0	1.0	**	1.0	1.0	**	9.9	9.9	**	9.9	9.9	**	9.9	9.9	**	9.9	9.9
Mississauga Halton – Northwest Mississauga	17	6.5	6.6	16	6.2	4.9	16	6.2	4.9	20	8.3	7.3	20	30.7	20.8	21	8.3	7.7	21	35.0	23.2
Mississauga Halton – Oakville	**	6.3	5.1	16	5.2	5.4	17	5.2	5.4	17	4.5	4.4	17	31.7	4.5	19	4.7	4.5	19	28.4	4.8
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	58	10.3	7.3	56	4.7	3.5	58	4.6	3.4	68	4.9	3.6	68	10.4	6.8	70	4.9	3.6	70	10.6	6.9
Toronto Central – East	17	5.7	5.4	19	9.5	7.5	19	9.5	7.5	19	7.4	6.2	19	18.9	12.2	22	6.9	5.9	22	18.0	8.3
Toronto Central – North East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toronto Central – North Toronto	30	9.8	8.8	32	7.3	6.9	35	6.9	5.8	31	7.9	7.1	31	11.3	9.0	31	7.9	7.1	31	11.3	9.0
Toronto Central – North West	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toronto Central – South East	17	5.4	2.8	21	12.7	6.5	35	11.1	6.5	33	7.2	5.1	33	10.6	6.5	51	5.7	3.1	51	9.3	6.3
Toronto Central – South West	56	7.1	6.2	65	7.9	6.5	84	7.5	5.6	50	6.2	5.6	50	24.5	9.9	57	5.8	5.6	57	22.3	9.3
Toronto Central – West	15	13.7	9.4	12	7.5	7.9	12	7.5	7.9	20	7.8	5.8	20	12.7	9.5	20	7.8	5.8	20	12.7	9.5
Central – Central York Region	19	4.2	3.7	11	6.4	6.7	11	6.4	6.7	19	7.2	6.3	19	41.9	6.3	21	7.3	6.3	21	41.9	6.3
Central – North York East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central – North York Central	30	6.6	6.0	29	7.3	8.0	33	6.8	6.0	38	7.6	6.2	38	15.5	11.5	41	7.5	6.2	41	15.1	11.1
Central – North York West	30	5.5	5.2	30	6.6	6.0	30	6.6	6.0	20	7.5	6.7	20	13.4	8.9	23	8.0	7.4	23	14.2	9.5
Central – South East York Region	31	5.8	6.0	43	6.0	5.8	47	5.8	5.7	50	6.3	5.7	50	12.3	9.2	51	6.3	5.8	51	13.5	9.5
Central – South Simcoe & Northern York Region	-	-	-	**	2.1	2.1	**	2.1	2.1	-	-	-	-	-	-	-	-	-	-	-	-
Central – South West York Region	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central East – Durham East	20	10.1	5.3	20	5.9	4.9	23	6.1	5.7	20	6.4	6.1	20	16.9	12.8	20	6.4	6.1	20	16.9	12.8
Central East – Durham North/Central	**	2.3	2.3	**	1.5	1.7	**	1.5	1.7	**	6.1	3.3	**	17.9	3.3	**	6.1	3.3	**	17.9	3.3
Central East – Durham West	14	10.0	6.7	16	8.0	7.0	18	7.9	7.0	18	8.1	5.7	18	17.0	10.6	18	8.1	5.7	18	17.0	10.6

Sub-Local Health Integration Network <sup>1</sup>	2003/04 <sup>2,3</sup>			2006/07 <sup>3</sup>			2006/07 All Visits <sup>4</sup>			2007/08 Disptime <sup>3,5</sup>			2007/08 Leftedtime <sup>3,6</sup>			2007/08 All Visits Disptime <sup>4,5</sup>			2007/08 All Visits Leftedtime <sup>4,6</sup>		
	No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
Central East – Haliburton Highlands	-	-	-	**	1.8	1.8	**	1.8	1.8	**	3.7	3.7	**	3.7	3.7	**	3.7	3.7	**	3.7	3.7
Central East – Kawartha Lakes	14	4.2	3.8	10	4.5	4.5	11	4.3	4.5	**	8.0	2.8	**	10.8	6.5	**	6.5	2.5	**	8.7	3.9
Central East – Northumberland-Havelock	**	4.1	4.3	7	5.7	4.6	8	5.7	4.9	**	11.9	6.4	**	6.3	6.3	**	9.2	6.3	**	4.5	6.3
Central East – Peterborough City and County	17	6.3	5.5	23	5.3	4.7	23	5.3	4.7	21	5.3	4.8	21	8.8	6.5	26	5.2	4.7	26	8.1	5.5
Central East – Scarborough Agincourt-Rouge	13	5.1	4.7	14	6.8	5.1	14	6.8	5.1	23	5.8	5.4	23	11.6	8.4	25	5.7	4.9	25	11.6	8.4
Central East – Scarborough Cliffs-Scarborough Centre	56	6.8	6.0	40	7.2	6.1	44	7.1	6.3	43	6.7	6.0	43	12.4	9.5	45	6.5	5.8	45	12.2	9.4
South East – Addington North/Central Frontenac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Belleville	**	7.2	5.5	6	4.4	2.8	6	4.4	2.8	8	5.1	2.8	8	8.3	6.5	9	4.8	2.8	9	9.6	7.1
South East – Brockville	**	1.3	1.3	**	5.9	6.0	**	5.9	6.0	10	5.2	4.7	10	6.8	5.9	11	5.0	3.9	11	6.7	5.5
South East – Central Hastings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Gananogue Leeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	26	5.6	3.7	28	6.9	3.9	36	5.9	3.5	36	6.5	5.1	36	13.4	9.4	47	6.2	4.4	47	13.0	9.4
South East – North Hastings	-	-	-	**	2.9	2.9	**	2.9	2.9	**	-	-	**	-	-	**	-	-	**	-	-
South East – Prince Edward County	-	-	-	-	-	-	-	-	-	**	2.5	2.5	**	2.8	2.8	**	2.5	2.5	**	2.8	2.8
South East – Quinte West	**	6.2	6.2	**	7.2	7.2	**	7.2	7.2	**	7.3	7.3	**	11.2	11.2	**	7.3	7.3	**	11.2	11.2
South East – Rideau Lakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	**	3.1	3.1	**	1.9	1.9	**	1.9	1.9	**	1.1	1.1	**	1.1	1.1	**	1.1	1.1	**	1.1	1.1
South East – South Frontenac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	-	-	-	**	1.7	1.7	**	1.7	1.7	**	1.5	1.5	**	-	-	**	1.5	1.5	**	-	-
Champlain – North Lanark/North Grenville	-	-	-	**	6.2	6.2	**	6.2	6.2	-	-	-	-	-	-	**	-	-	**	-	-
Champlain – Ottawa	119	7.9	6.1	104	7.1	4.8	130	6.5	4.5	136	6.8	5.0	136	12.2	7.5	167	6.7	5.0	167	12.8	7.7
Champlain – Prescott-Russell	-	-	-	-	-	-	-	-	-	**	4.4	1.8	**	15.1	6.6	**	4.4	1.8	**	15.1	6.6
Champlain – Renfrew	**	4.2	2.9	7	4.4	3.5	9	4.2	3.5	**	3.1	3.2	**	3.4	3.6	**	3.1	3.2	**	3.4	3.6
Champlain – Stormont, Dundas and Glengarry	8	4.4	3.9	6	6.2	5.0	8	6.0	5.0	**	2.4	2.6	**	2.3	2.6	**	2.4	2.6	**	2.3	2.6
North Simcoe Muskoka – Central East	20	5.5	5.7	23	6.2	5.5	26	5.8	4.6	30	3.3	2.5	30	7.4	5.6	30	3.3	2.5	30	7.4	5.6
North Simcoe Muskoka – Central West	**	2.2	2.1	9	3.9	3.8	10	3.9	3.9	**	4.4	4.0	**	4.6	4.1	**	4.4	4.3	**	4.5	4.3
North Simcoe Muskoka – Muskoka	**	4.3	5.3	12	3.5	3.0	14	3.6	3.0	16	5.2	3.9	16	7.5	5.4	16	5.2	3.9	16	7.5	5.4
North Simcoe Muskoka – North East	12	5.5	4.8	13	4.0	3.4	16	3.6	3.2	9	3.5	3.0	9	10.0	5.7	10	3.2	2.9	10	9.5	5.5
North Simcoe Muskoka – North West	**	4.5	5.3	**	10.6	10.0	**	10.6	10.0	**	2.5	2.4	**	6.0	6.0	**	2.5	2.4	**	6.0	6.0
North East – Algoma	9	1.4	1.0	11	3.0	2.3	12	2.8	2.3	14	3.3	2.7	14	5.0	4.9	15	3.4	2.8	15	5.0	4.6
North East – Cochrane	11	4.3	4.5	6	2.6	2.1	7	2.5	2.0	**	2.8	2.8	**	7.9	4.8	**	2.8	2.8	**	7.9	4.8
North East – James and Hudson Bay Coasts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North East – Manitoulin-Sudbury	26	6.8	5.5	16	3.4	3.6	16	3.4	3.6	30	3.8	3.4	30	8.8	5.5	34	3.6	3.2	34	8.1	5.4
North East – Nipissing	7	3.7	3.0	**	2.2	2.2	**	2.2	2.2	12	1.9	1.8	12	4.5	3.9	12	1.9	1.8	12	4.5	3.9
North East – Parry Sound	**	10.3	10.3	**	3.9	4.3	**	3.9	4.3	**	3.3	2.9	**	4.8	4.3	**	3.3	2.9	**	4.8	4.3
North East – Timiskaming	-	-	-	**	2.3	2.3	**	2.3	2.3	**	4.7	4.7	**	13.9	13.9	**	4.7	4.7	**	13.9	13.9
North West – Dryden	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North West – Kenora	-	-	-	-	-	-	-	-	-	**	2.6	2.6	**	3.4	3.4	**	2.6	2.6	**	3.4	3.4
North West – Kenora District (excl. Kenora & Dryden)	-	-	-	-	-	-	-	-	-	**	4.0	4.0	**	4.0	4.0	**	4.0	4.0	**	4.0	4.0
North West – Nipigon Red Rock Greenstone	**	2.3	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North West – North Shore	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North West – Rainy River District	**	2.9	2.9	**	2.9	2.9	**	2.9	2.9	-	-	-	-	-	-	-	-	-	-	-	-
North West – Thunder Bay City	14	5.5	4.9	27	4.6	3.7	31	4.4	3.0	17	3.6	2.4	17	7.7	6.4	18	3.5	2.3	18	7.3	6.4

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of intracerebral hemorrhage.

<sup>1</sup> Due to differences in data collection, only 'Disptime' was reported in 2003/04.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may appear more than once).

<sup>4</sup> 'Disptime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Disptime is the time (HHMM) in which the main service provider makes the decision about the patient's disposition.

<sup>5</sup> 'Leftedtime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Leftedtime is the time (HHMM) in which the patient physically leaves the emergency department and does not return. Using this data element and REGTIME to calculate the ED length of stay is recommended.

<sup>6</sup> Based on sub-LHIN planning area version 5.1.

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).  
(2) Cells in which there was no reported/available data are marked with a hyphen (-).

Exhibit 1.6.5A Emergency department length of stay for subarachnoid hemorrhage, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08

Sub-Local Health Integration Network <sup>1</sup>	2003/04 <sup>2,3</sup>			2006/07 <sup>3</sup>			2006/07 All Visits <sup>4</sup>			2007/08 Disptime <sup>3,5</sup>			2007/08 Leftedtime <sup>3,6</sup>			2007/08 All Visits Disptime <sup>4,5</sup>			2007/08 All Visits Leftedtime <sup>4,6</sup>		
	No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
Erie St. Clair – Essex	19	4.1	4.0	22	4.5	3.1	25	4.1	3.0	19	4.0	3.1	19	5.8	5.0	23	3.7	2.7	23	5.3	4.8
Erie St. Clair – Chatham-Kent	**	7.2	7.3	7	3.4	3.7	7	3.4	3.7	7	4.3	3.7	7	4.5	3.8	7	4.3	3.7	7	4.5	3.8
Erie St. Clair – Lambton	**	5.2	3.4	9	5.2	4.8	9	5.2	4.8	**	4.8	4.6	**	4.8	4.7	**	4.8	4.6	**	4.8	4.7
South West – Central	6	3.7	3.6	**	4.2	4.1	**	4.2	4.1	**	4.3	2.1	**	4.3	3.3	**	4.3	2.1	**	4.3	3.3
South West – North	**	4.6	3.2	14	3.8	3.3	16	3.8	3.3	10	3.9	3.9	10	3.9	3.9	12	4.0	3.9	12	4.0	3.9
South West – South	43	3.8	3.3	41	3.4	3.1	52	3.3	2.5	38	4.5	3.8	38	8.2	5.8	47	3.9	3.3	47	7.5	5.3
Waterloo Wellington – Rural - South Grey & North Wellington	-	-	-	-	-	-	-	-	-	**	-	-	**	2.2	2.2	**	-	-	**	2.2	2.2
Waterloo Wellington – Rural Waterloo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Wellington	-	-	-	**	6.0	3.2	**	6.0	3.2	-	-	-	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Urban Guelph	9	5.7	3.0	**	7.0	6.8	**	6.0	6.3	8	4.8	4.7	8	5.3	4.2	8	4.8	4.7	8	5.3	4.2
Waterloo Wellington – Urban Waterloo & Rural Waterloo	21	4.8	4.5	19	6.3	5.8	23	5.9	5.6	32	5.3	4.5	32	5.8	5.2	32	5.3	4.5	32	5.8	5.2
Hamilton Niagara Haldimand Brant – Brant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	9	3.2	2.3	**	5.1	3.2	**	5.1	3.2	**	2.8	3.1	**	4.4	3.7	**	2.8	3.1	**	4.4	3.7
Hamilton Niagara Haldimand Brant – Burlington	**	4.6	3.3	8	6.7	7.1	8	6.7	7.1	**	5.6	4.3	**	8.3	5.9	**	5.6	4.3	**	8.3	5.9
Hamilton Niagara Haldimand Brant – Fort Erie	**	3.1	3.1	-	-	-	-	-	-	**	2.6	2.6	**	2.6	2.6	**	2.6	2.6	**	2.6	2.6
Hamilton Niagara Haldimand Brant – Grimsby	**	4.4	4.4	**	1.5	1.5	**	1.5	1.5	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Haldimand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Hamilton	44	4.4	3.8	29	4.1	3.6	39	3.7	3.4	41	4.2	3.1	41	6.2	4.2	55	3.5	2.9	55	5.8	3.8
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	**	2.9	2.4	**	6.1	5.3	**	6.1	5.3	6	5.5	2.8	6	6.3	3.5	7	4.8	1.9	7	5.4	3.1
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Norfolk	**	1.6	1.6	-	-	-	-	-	-	**	2.5	2.5	**	2.5	2.5	**	2.5	2.5	**	2.5	2.5
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	-	-	-	-	-	-	-	-	-	**	7.2	7.2	**	7.2	7.2	**	7.2	7.2	**	7.2	7.2
Hamilton Niagara Haldimand Brant – Six Nations (Part)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	12	3.1	3.5	6	3.9	3.5	7	6.4	3.5	15	8.2	7.2	15	12.2	9.6	15	8.2	7.2	15	12.2	9.6
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	**	4.6	2.7	**	3.3	3.0	**	3.3	3.0	**	9.5	5.2	**	9.5	5.2	**	9.5	5.2	**	9.5	5.2
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Brampton	20	5.3	4.5	17	8.5	7.3	17	8.5	7.3	19	6.5	6.7	19	14.2	7.9	19	6.5	6.7	19	14.2	7.9
Central West – Caledon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Orangeville	**	3.4	3.2	**	4.6	4.6	**	5.1	4.9	**	5.9	6.0	**	5.9	6.0	**	5.9	6.0	**	5.9	6.0
Central West – Rexdale (Toronto)	7	3.5	3.4	8	8.6	6.3	9	7.8	5.2	10	6.4	6.5	10	8.9	7.9	12	6.2	5.6	12	13.7	8.6
Central West – Woodbridge (Vaughan)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mississauga Halton – Halton Hills	-	-	-	**	3.8	3.6	**	3.8	3.6	**	3.9	3.9	**	3.9	3.9	**	3.9	3.9	**	3.9	3.9
Mississauga Halton – Milton	**	2.1	0.9	6	4.2	4.2	6	4.2	4.2	**	8.3	8.9	**	7.6	7.6	**	8.3	8.9	**	7.6	7.6
Mississauga Halton – Northwest Mississauga	10	4.5	4.1	10	8.5	7.2	10	8.5	7.2	12	6.6	5.1	12	10.1	6.1	12	6.6	5.1	12	10.1	6.1
Mississauga Halton – Oakville	8	3.3	3.3	13	4.1	3.9	16	3.5	3.3	13	4.3	3.2	13	4.7	3.8	13	4.3	3.2	13	4.7	3.8
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	15	7.1	4.4	31	5.1	3.5	31	5.1	3.5	20	4.6	4.7	20	8.5	5.9	20	4.6	4.7	20	8.5	5.9
Toronto Central – East	12	6.8	4.8	11	9.2	5.4	11	9.2	5.4	8	5.4	4.0	8	5.4	4.0	8	5.4	4.0	8	5.4	4.0
Toronto Central – North East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toronto Central – North Toronto	6	7.7	5.9	25	7.0	3.6	32	5.8	3.2	19	8.8	7.2	19	13.6	9.5	20	8.4	7.2	20	13.1	9.3
Toronto Central – North West	22	5.3	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toronto Central – South East	44	6.5	4.1	31	6.9	5.7	75	5.4	4.4	44	5.7	2.6	44	7.6	4.6	102	3.4	1.7	102	5.9	3.9
Toronto Central – South West	7	5.0	4.5	30	6.5	5.5	42	5.7	4.0	38	5.3	4.3	38	21.3	8.6	54	4.2	2.9	54	15.8	5.6
Toronto Central – West	-	-	-	10	9.2	7.8	10	9.2	7.8	13	7.6	5.8	13	9.4	7.3	13	7.6	5.8	13	9.4	7.3
Central – Central York Region	**	5.6	5.7	9	5.7	6.0	9	5.7	6.0	15	7.7	6.0	15	8.2	6.0	16	7.7	6.5	16	8.2	6.0
Central – North York East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central – North York Central	10	4.5	3.8	10	8.1	6.4	10	8.1	6.4	15	6.5	6.0	15	9.0	8.8	15	6.5	6.0	15	9.0	8.8
Central – North York West	13	9.0	6.8	14	4.7	4.5	14	4.7	4.5	18	5.3	5.0	18	6.0	6.3	18	5.3	5.0	18	6.0	6.3
Central – South East York Region	12	4.7	4.6	15	6.3	4.9	15	6.3	4.9	13	7.6	5.5	13	6.5	5.8	13	7.6	5.5	13	6.5	5.8
Central – South Simcoe & Northern York Region	**	4.9	4.9	**	-	-	**	-	-	**	5.7	5.7	**	7.8	7.8	**	5.7	5.7	**	7.8	7.8
Central – South West York Region	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central East – Durham East	12	6.2	5.3	15	4.4	4.2	15	4.4	4.2	13	7.9	5.5	13	8.8	5.5	13	7.9	5.5	13	8.8	5.5
Central East – Durham North/Central	**	3.2	3.2	**	3.3	3.8	**	3.3	3.8	**	3.8	3.5	**	3.8	3.5	**	3.8	3.5	**	3.8	3.5
Central East – Durham West	**	4.2	2.6	7	6.6	2.8	7	6.6	2.8	6	8.0	5.9	6	21.7	10.1	6	8.0	5.9	6	21.7	10.1
Central East – Haliburton Highlands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central East – Kawartha Lakes	7	4.5	3.4	**	8.4	8.4	**	8.4	8.4	7	4.6	4.8	7	15.4	5.1	8	4.8	5.1	8	14.2	5.4



Sub-Local Health Integration Network <sup>1</sup>	2003/04 <sup>2,3</sup>			2006/07 <sup>3</sup>			2006/07 All Visits <sup>4</sup>			2007/08 Disptime <sup>3,5</sup>			2007/08 Leftedtime <sup>3,6</sup>			2007/08 All Visits Disptime <sup>4,5</sup>			2007/08 All Visits Leftedtime <sup>4,6</sup>		
	No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)		No. of Patients	Length of Stay (hrs)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median
Central East – Northumberland-Havelock	**	3.7	2.6	**	5.3	3.5	**	5.3	3.5	**	4.3	2.8	**	4.3	2.9	**	4.3	2.8	**	4.3	2.9
Central East – Peterborough City and County	8	3.8	3.7	13	4.6	3.8	13	4.6	3.8	7	9.1	8.0	7	11.6	9.9	8	8.6	6.4	8	11.6	9.9
Central East – Scarborough Agincourt-Rouge	**	5.0	4.4	**	5.7	5.5	**	5.7	5.5	10	7.5	6.7	10	8.1	7.0	10	7.5	6.7	10	8.1	7.0
Central East – Scarborough Cliffs-Scarborough Centre	10	5.2	4.7	23	6.2	6.2	24	6.1	6.0	18	8.0	5.7	18	9.2	5.7	19	7.7	4.7	19	8.9	4.7
South East – Addington North/Central Frontenac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Belleville	**	4.3	3.7	6	3.9	4.2	6	3.9	4.2	**	6.3	4.4	**	8.4	7.3	**	6.3	4.4	**	8.4	7.3
South East – Brockville	**	4.9	4.9	**	5.6	4.5	6	5.5	4.5	**	7.1	7.1	**	7.1	7.1	**	7.1	7.1	**	7.1	7.1
South East – Central Hastings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	25	3.1	2.8	18	5.4	4.7	22	4.9	4.2	20	6.2	4.2	20	11.6	8.9	26	5.3	3.9	26	10.7	8.7
South East – North Hastings	-	-	-	**	1.6	1.6	**	1.6	1.6	-	-	-	-	-	-	-	-	-	-	-	-
South East – Prince Edward County	**	5.0	5.0	-	-	-	-	-	-	**	9.5	9.5	**	9.5	9.5	**	9.5	9.5	**	9.5	9.5
South East – Quinte West	**	2.5	2.5	**	4.6	4.6	**	4.6	4.6	**	3.8	3.8	**	4.4	4.2	**	3.8	3.8	**	4.4	4.2
South East – Rideau Lakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	**	0.8	0.8	**	1.5	1.4	**	1.5	1.4	**	1.3	1.3	**	1.3	1.3	**	1.3	1.3	**	1.3	1.3
South East – South Frontenac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	-	-	-	-	-	-	-	-	-	**	0.6	0.6	**	3.1	3.1	**	0.6	0.6	**	3.1	3.1
Champlain – North Lanark/North Grenville	**	1.3	1.3	-	-	-	-	-	-	**	0.5	0.5	**	0.5	0.5	**	0.5	0.5	**	0.5	0.5
Champlain – Ottawa	71	7.3	5.4	75	5.5	4.5	122	4.9	3.6	65	6.1	3.8	65	10.3	5.7	91	5.3	3.6	91	10.2	5.7
Champlain – Prescott-Russell	**	4.0	4.0	-	-	-	-	-	-	7	5.9	4.2	7	11.2	5.5	7	5.9	4.2	7	11.2	5.5
Champlain – Renfrew	**	6.3	6.3	**	1.6	1.6	**	1.6	1.6	**	2.9	2.9	**	4.3	4.3	**	2.9	2.9	**	4.3	4.3
Champlain – Stormont, Dundas and Glengarry	**	7.8	3.9	**	5.9	5.9	**	5.9	5.9	**	3.3	3.6	**	2.6	3.2	**	3.3	3.6	**	2.6	3.2
North Simcoe Muskoka – Central East	7	2.7	2.3	7	6.9	5.1	7	6.9	5.1	6	4.3	4.4	6	6.9	7.6	7	3.9	2.2	7	6.9	7.6
North Simcoe Muskoka – Central West	6	8.0	4.1	-	-	-	-	-	-	**	4.7	2.7	**	4.7	2.7	**	4.7	2.7	**	4.7	2.7
North Simcoe Muskoka – Muskoka	**	9.5	9.5	**	4.4	4.4	**	4.4	4.4	6	3.5	3.4	6	4.1	3.7	6	3.5	3.4	6	4.1	3.7
North Simcoe Muskoka – North East	**	4.2	4.3	9	4.0	3.9	9	4.0	3.9	7	4.4	3.4	7	5.1	4.1	7	4.4	3.4	7	5.1	4.1
North Simcoe Muskoka – North West	**	4.1	3.9	**	6.8	6.8	**	6.8	6.8	**	4.3	4.3	**	-	-	**	4.3	4.3	**	-	-
North East – Algoma	**	2.3	2.5	9	2.4	1.8	9	2.4	1.8	**	6.8	2.2	**	7.1	2.7	**	6.8	2.2	**	7.1	2.7
North East – Cochrane	**	3.5	3.6	**	5.2	5.2	**	5.2	5.2	**	6.3	5.3	**	30.1	9.4	**	5.8	4.4	**	24.8	8.3
North East – James and Hudson Bay Coasts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North East – Manitoulin-Sudbury	13	8.6	7.5	10	5.0	4.3	11	5.0	4.4	9	5.0	2.4	9	5.5	3.6	9	5.0	2.4	9	5.5	3.6
North East – Nipissing	7	2.1	2.3	7	5.2	4.0	7	5.2	4.0	6	3.2	3.9	6	4.5	5.0	6	3.2	3.9	6	4.5	5.0
North East – Parry Sound	**	10.3	10.3	**	5.9	4.7	**	5.9	4.7	**	4.3	4.3	**	4.5	4.5	**	4.3	4.3	**	4.5	4.5
North East – Timiskaming	**	16.4	16.4	**	4.4	4.4	**	4.4	4.4	**	6.5	6.5	**	6.6	6.6	**	6.5	6.5	**	6.6	6.6
North West – Dryden	-	-	-	**	4.9	4.9	**	4.9	4.9	-	-	-	-	-	-	-	-	-	-	-	-
North West – Kenora	**	2.4	2.4	**	4.8	4.4	**	4.8	4.4	**	5.6	5.6	**	6.6	6.6	**	5.6	5.6	**	6.6	6.6
North West – Kenora District (excl. Kenora & Dryden)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North West – Nipigon Red Rock Greenstone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North West – North Shore	**	3.2	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North West – Rainy River District	-	-	-	**	5.0	5.0	**	5.0	5.0	**	4.5	4.5	**	4.5	4.5	**	4.5	4.5	**	4.5	4.5
North West – Thunder Bay City	12	3.7	2.8	**	7.1	8.0	**	7.1	8.0	12	5.3	4.0	12	6.5	5.5	12	5.3	4.0	12	6.5	5.5

Data source: Canadian Institute for Health Information, National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged from an emergency department with a diagnosis of subarachnoid hemorrhage.

<sup>1</sup> Due to differences in data collection, only 'Disptime' was reported in 2003/04.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may appear more than once).

<sup>4</sup> 'Disptime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Disptime is the time (HHMM) in which the main service provider makes the decision about the patient's disposition.

<sup>5</sup> 'Leftedtime' is used for the calculation of length of stay in the 2007 CIHI-NACRS database. Leftedtime is the time (HHMM) in which the patient physically leaves the emergency department and does not return. Using this data element and REGTIME to calculate the ED length of stay is recommended.

<sup>6</sup> Based on sub-LHIN planning area version 5.1.

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).  
(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 2.2A Number and percentage of stroke/TIA patients admitted to acute care hospitals, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>1</sup>	2003/04 <sup>2</sup> n (%)	2006/07 <sup>2</sup> n (%)	2006/07 all events <sup>3</sup> n (%)	2007/08 <sup>2</sup> n (%)	2007/08 all events <sup>3</sup> n (%)
Erie St. Clair – Essex	669 (4.2)	585 (3.8)	623 (3.7)	596 (3.8)	635 (3.8)
Erie St. Clair – Chatham-Kent	225 (1.4)	191 (1.2)	199 (1.2)	202 (1.3)	222 (1.3)
Erie St. Clair – Lambton	207 (1.3)	174 (1.1)	183 (1.1)	166 (1.1)	174 (1.0)
South West – Central	239 (1.5)	231 (1.5)	253 (1.5)	240 (1.5)	256 (1.5)
South West – North	301 (1.9)	279 (1.8)	303 (1.8)	265 (1.7)	291 (1.8)
South West – South	904 (5.6)	857 (5.5)	916 (5.5)	826 (5.3)	889 (5.3)
Waterloo Wellington – Rural - South Grey & North Wellington	41 (0.3)	32 (0.2)	35 (0.2)	30 (0.2)	31 (0.2)
Waterloo Wellington – Rural Waterloo	-	-	-	-	-
Waterloo Wellington – Rural Wellington	54 (0.3)	36 (0.2)	39 (0.2)	62 (0.4)	67 (0.4)
Waterloo Wellington – Urban Guelph	131 (0.8)	148 (1.0)	160 (1.0)	130 (0.8)	136 (0.8)
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	511 (3.2)	493 (3.2)	531 (3.2)	476 (3.1)	504 (3.0)
Hamilton Niagara Haldimand Brant – Brant	6 (<0.1)	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	209 (1.3)	195 (1.3)	210 (1.3)	208 (1.3)	-
Hamilton Niagara Haldimand Brant – Burlington	217 (1.3)	200 (1.3)	204 (1.2)	192 (1.2)	201 (1.2)
Hamilton Niagara Haldimand Brant – Fort Erie	43 (0.3)	37 (0.2)	38 (0.2)	27 (0.2)	28 (0.2)
Hamilton Niagara Haldimand Brant – Grimsby	48 (0.3)	29 (0.2)	32 (0.2)	45 (0.3)	48 (0.3)
Hamilton Niagara Haldimand Brant – Haldimand	63 (0.4)	53 (0.3)	58 (0.3)	48 (0.3)	48 (0.3)
Hamilton Niagara Haldimand Brant – Hamilton	863 (5.4)	875 (5.6)	931 (5.6)	858 (5.5)	910 (5.5)
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	145 (0.9)	168 (1.1)	171 (1.0)	149 (1.0)	151 (0.9)
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	**	**
Hamilton Niagara Haldimand Brant – Norfolk	88 (0.5)	70 (0.5)	74 (0.4)	93 (0.6)	98 (0.6)
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	28 (0.2)	16 (0.1)	16 (0.1)	11 (0.1)	11 (0.1)
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	294 (1.8)	236 (1.5)	247 (1.5)	275 (1.8)	285 (1.7)
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	136 (0.8)	132 (0.9)	137 (0.8)	107 (0.7)	114 (0.7)
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-
Central West – Brampton	235 (1.5)	200 (1.3)	216 (1.3)	256 (1.7)	290 (1.7)
Central West – Caledon	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-
Central West – Orangeville	114 (0.7)	97 (0.6)	102 (0.6)	107 (0.7)	111 (0.7)
Central West – Rexdale (Toronto)	210 (1.3)	194 (1.2)	202 (1.2)	212 (1.4)	220 (1.3)
Central West – Woodbridge (Vaughan)	-	-	-	-	-
Mississauga Halton – Halton Hills	46 (0.3)	37 (0.2)	38 (0.2)	45 (0.3)	47 (0.3)
Mississauga Halton – Milton	34 (0.2)	54 (0.3)	56 (0.3)	40 (0.3)	40 (0.2)
Mississauga Halton – Northwest Mississauga	184 (1.1)	189 (1.2)	195 (1.2)	195 (1.3)	205 (1.2)
Mississauga Halton – Oakville	178 (1.1)	187 (1.2)	197 (1.2)	167 (1.1)	177 (1.1)
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	608 (3.8)	599 (3.9)	631 (3.8)	570 (3.7)	607 (3.7)
Toronto Central – East	254 (1.6)	176 (1.1)	193 (1.2)	181 (1.2)	190 (1.1)
Toronto Central – North East	-	-	-	-	-
Toronto Central – North Toronto	332 (2.1)	411 (2.6)	437 (2.6)	382 (2.5)	404 (2.4)
Toronto Central – North West	-	-	-	-	-
Toronto Central – South East	281 (1.7)	338 (2.2)	374 (2.2)	350 (2.3)	398 (2.4)
Toronto Central – South West	651 (4.0)	726 (4.7)	808 (4.9)	777 (5.0)	840 (5.1)
Toronto Central – West	236 (1.5)	186 (1.2)	204 (1.2)	217 (1.4)	231 (1.4)
Central – Central York Region	213 (1.3)	201 (1.3)	217 (1.3)	203 (1.3)	224 (1.3)
Central – North York East	-	-	-	-	-
Central – North York Central	265 (1.6)	356 (2.3)	384 (2.3)	359 (2.3)	378 (2.3)
Central – North York West	459 (2.8)	365 (2.4)	383 (2.3)	363 (2.3)	382 (2.3)
Central – South East York Region	365 (2.3)	476 (3.1)	499 (3.0)	435 (2.8)	459 (2.8)
Central – South Simcoe & Northern York Region	55 (0.3)	35 (0.2)	35 (0.2)	35 (0.2)	38 (0.2)
Central – South West York Region	-	-	-	-	-
Central East – Durham East	306 (1.9)	295 (1.9)	316 (1.9)	262 (1.7)	273 (1.6)
Central East – Durham North/Central	74 (0.5)	49 (0.3)	54 (0.3)	57 (0.4)	58 (0.3)
Central East – Durham West	114 (0.7)	128 (0.8)	135 (0.8)	111 (0.7)	119 (0.7)
Central East – Haliburton Highlands	8 (<0.1)	6 (<0.1)	7 (<0.1)	6 (<0.1)	6 (<0.1)
Central East – Kawartha Lakes	118 (0.7)	105 (0.7)	122 (0.7)	83 (0.5)	88 (0.5)

<b>Sub-Local Health Integration Network<sup>1</sup></b>	<b>2003/04<sup>2</sup> n (%)</b>	<b>2006/07<sup>2</sup> n (%)</b>	<b>2006/07 all events<sup>3</sup> n (%)</b>	<b>2007/08<sup>2</sup> n (%)</b>	<b>2007/08 all events<sup>3</sup> n (%)</b>
Central East – Northumberland-Havelock	118 (0.7)	105 (0.7)	108 (0.6)	91 (0.6)	96 (0.6)
Central East – Peterborough City and County	243 (1.5)	248 (1.6)	262 (1.6)	230 (1.5)	240 (1.4)
Central East – Scarborough Agincourt-Rouge	185 (1.1)	181 (1.2)	186 (1.1)	151 (1.0)	168 (1.0)
Central East – Scarborough Cliffs-Scarborough Centre	501 (3.1)	445 (2.9)	486 (2.9)	444 (2.9)	481 (2.9)
South East – Addington North/Central Frontenac	-	-	-	-	-
South East – Belleville	144 (0.9)	105 (0.7)	120 (0.7)	133 (0.9)	146 (0.9)
South East – Brockville	113 (0.7)	95 (0.6)	104 (0.6)	101 (0.7)	111 (0.7)
South East – Central Hastings	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-
South East – Kingston and Islands	285 (1.8)	286 (1.8)	303 (1.8)	314 (2.0)	334 (2.0)
South East – North Hastings	27 (0.2)	12 (0.1)	12 (0.1)	6 (<0.1)	7 (<0.1)
South East – Prince Edward County	41 (0.3)	17 (0.1)	18 (0.1)	38 (0.2)	39 (0.2)
South East – Quinte West	64 (0.4)	50 (0.3)	52 (0.3)	51 (0.3)	51 (0.3)
South East – Rideau Lakes	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	77 (0.5)	41 (0.3)	44 (0.3)	52 (0.3)	60 (0.4)
South East – South Frontenac	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-
South East – Tyendinaga Napanee	24 (0.1)	27 (0.2)	28 (0.2)	21 (0.1)	22 (0.1)
Champlain – North Lanark/North Grenville	63 (0.4)	38 (0.2)	42 (0.3)	50 (0.3)	55 (0.3)
Champlain – Ottawa	913 (5.7)	891 (5.7)	965 (5.8)	935 (6.0)	1021 (6.1)
Champlain – Prescott-Russell	26 (0.2)	28 (0.2)	30 (0.2)	51 (0.3)	57 (0.3)
Champlain – Renfrew	158 (1.0)	222 (1.4)	239 (1.4)	194 (1.3)	207 (1.2)
Champlain – Stormont, Dundas and Glengarry	153 (0.9)	120 (0.8)	136 (0.8)	120 (0.8)	133 (0.8)
North Simcoe Muskoka – Central East	218 (1.4)	206 (1.3)	224 (1.3)	233 (1.5)	254 (1.5)
North Simcoe Muskoka – Central West	91 (0.6)	92 (0.6)	95 (0.6)	85 (0.5)	96 (0.6)
North Simcoe Muskoka – Muskoka	147 (0.9)	125 (0.8)	134 (0.8)	122 (0.8)	126 (0.8)
North Simcoe Muskoka – North East	168 (1.0)	98 (0.6)	104 (0.6)	98 (0.6)	109 (0.7)
North Simcoe Muskoka – North West	94 (0.6)	94 (0.6)	102 (0.6)	107 (0.7)	117 (0.7)
North East – Algoma	229 (1.4)	256 (1.6)	270 (1.6)	252 (1.6)	274 (1.6)
North East – Cochrane	130 (0.8)	146 (0.9)	156 (0.9)	120 (0.8)	131 (0.8)
North East – James and Hudson Bay Coasts	8 (<0.1)	7 (<0.1)	10 (0.1)	6 (<0.1)	6 (<0.1)
North East – Manitoulin-Sudbury	408 (2.5)	361 (2.3)	394 (2.4)	31 (0.2)	378 (2.3)
North East – Nipissing	202 (1.3)	168 (1.1)	175 (1.1)	353 (2.3)	191 (1.1)
North East – Parry Sound	29 (0.2)	54 (0.3)	57 (0.3)	182 (1.2)	40 (0.2)
North East – Timiskaming	80 (0.5)	66 (0.4)	75 (0.5)	59 (0.4)	62 (0.4)
North West – Dryden	18 (0.1)	12 (0.1)	14 (0.1)	15 (0.1)	16 (0.1)
North West – Kenora	30 (0.2)	38 (0.2)	40 (0.2)	48 (0.3)	51 (0.3)
North West – Kenora District (excl. Kenora & Dryden)	20 (0.1)	17 (0.1)	18 (0.1)	13 (0.1)	17 (0.1)
North West – Nipigon Red Rock Greenstone	11 (0.1)	8 (0.1)	9 (0.1)	6 (<0.1)	7 (<0.1)
North West – North Shore	7 (<0.1)	6 (<0.1)	7 (<0.1)	8 (0.1)	9 (0.1)
North West – Rainy River District	39 (0.2)	38 (0.2)	44 (0.3)	32 (0.2)	32 (0.2)
North West – Thunder Bay City	283 (1.8)	371 (2.4)	399 (2.4)	342 (2.2)	377 (2.3)

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

<sup>1</sup> Based on sub-LHIN planning area version 5.1.

<sup>2</sup> The 2003/04 cohort includes unique patients only. For 2006/07 and 2007/08, two separate cohorts were created: one including unique patients and one including all events.

<sup>3</sup> Analysis includes all visits (i.e., a patient may appear more than once).

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 2.3A Number and percentage of patients<sup>1</sup> admitted to acute care hospitals (OSS designated and non-designated) with a diagnosis of stroke/TIA, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>2</sup>	2003/04				2006/07				2007/08			
	All n (%)	Regional Stroke Centre n (%)	District Stroke Centre n (%)	Non-designated n (%)	All n (%)	Regional Stroke Centre n (%)	District Stroke Centre n (%)	Non-designated n (%)	All n (%)	Regional Stroke Centre n (%)	District Stroke Centre n (%)	Non-designated n (%)
Erie St. Clair – Essex	669 (4.2)	393 (8.7)	-	276 (3.0)	585 (3.8)	348 (7.2)	-	237 (2.9)	596 (3.8)	337 (6.8)	-	259 (3.2)
Erie St. Clair – Chatham-Kent	225 (1.4)	-	166 (7.1)	59 (0.6)	191 (1.2)	-	168 (6.8)	23 (0.3)	202 (1.3)	-	186 (8.3)	16 (0.2)
Erie St. Clair – Lambton	207 (1.3)	-	178 (7.6)	29 (0.3)	174 (1.1)	-	155 (6.3)	19 (0.2)	166 (1.1)	-	148 (6.6)	18 (0.2)
South West – Central	239 (1.5)	-	80 (3.4)	159 (1.7)	231 (1.5)	-	74 (3.0)	157 (1.9)	240 (1.5)	-	96 (4.3)	144 (1.8)
South West – North	301 (1.9)	-	121 (5.2)	180 (1.9)	279 (1.8)	-	81 (3.3)	198 (2.4)	265 (1.7)	-	101 (4.5)	164 (2.0)
South West – South	904 (5.6)	481 (10.6)	-	423 (4.6)	857 (5.5)	539 (11.2)	-	318 (3.9)	826 (5.3)	554 (11.3)	-	272 (3.3)
Waterloo Wellington – Rural - South Grey & North Wellington	41 (0.3)	-	-	41 (0.4)	32 (0.2)	-	-	32 (0.4)	30 (0.2)	-	-	30 (0.4)
Waterloo Wellington – Rural Waterloo	-	-	-	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Wellington	54 (0.3)	-	-	54 (0.6)	36 (0.2)	-	-	36 (0.4)	62 (0.4)	-	-	62 (0.8)
Waterloo Wellington – Urban Guelph	131 (0.8)	-	-	131 (1.4)	148 (1.0)	-	-	148 (1.8)	130 (0.8)	-	-	130 (1.6)
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	511 (3.2)	-	211 (9.0)	300 (3.2)	493 (3.2)	-	340 (13.8)	153 (1.9)	476 (3.1)	-	328 (14.7)	148 (1.8)
Hamilton Niagara Haldimand Brant – Brant	6 (<0.1)	-	-	6 (0.1)	195 (1.3)	-	195 (7.9)	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	209 (1.3)	-	209 (8.9)	-	195 (1.3)	-	195 (7.9)	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Burlington	217 (1.3)	-	-	217 (2.3)	200 (1.3)	-	-	200 (2.4)	192 (1.2)	-	-	192 (2.4)
Hamilton Niagara Haldimand Brant – Fort Erie	43 (0.3)	-	-	43 (0.5)	37 (0.2)	-	-	37 (0.4)	27 (0.2)	-	-	27 (0.3)
Hamilton Niagara Haldimand Brant – Grimsby	48 (0.3)	-	-	48 (0.5)	29 (0.2)	-	-	29 (0.4)	45 (0.3)	-	-	45 (0.6)
Hamilton Niagara Haldimand Brant – Haldimand	63 (0.4)	-	-	63 (0.7)	53 (0.3)	-	-	53 (0.6)	48 (0.3)	-	-	48 (0.6)
Hamilton Niagara Haldimand Brant – Hamilton	863 (5.4)	438 (9.7)	-	425 (4.6)	875 (5.6)	493 (10.2)	-	382 (4.6)	858 (5.5)	512 (10.4)	-	346 (4.2)
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	145 (0.9)	-	145 (6.2)	-	168 (1.1)	-	168 (6.8)	-	149 (1.0)	-	149 (6.7)	-
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	6 (<0.1)	-	6 (0.3)	-	168 (1.1)	-	168 (6.8)	-	**	-	**	-
Hamilton Niagara Haldimand Brant – Norfolk	88 (0.5)	-	-	88 (1.0)	70 (0.5)	-	-	70 (0.8)	93 (0.6)	-	-	93 (1.1)
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	28 (0.2)	-	-	28 (0.3)	16 (0.1)	-	-	16 (0.2)	11 (0.1)	-	-	11 (0.1)
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	294 (1.8)	-	-	294 (3.2)	236 (1.5)	-	-	236 (2.9)	275 (1.8)	-	-	275 (3.4)
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	136 (0.8)	-	-	136 (1.5)	132 (0.9)	-	-	132 (1.6)	107 (0.7)	-	-	107 (1.3)
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Brampton	235 (1.5)	-	-	235 (2.5)	200 (1.3)	-	-	200 (2.4)	256 (1.7)	-	-	256 (3.1)
Central West – Caledon	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-	-	-	-	-	-	-	-
Central West – Orangeville	114 (0.7)	-	-	114 (1.2)	97 (0.6)	-	-	97 (1.2)	107 (0.7)	-	-	107 (1.3)
Central West – Rexdale (Toronto)	210 (1.3)	-	-	210 (2.3)	194 (1.2)	-	-	194 (2.4)	212 (1.4)	-	-	212 (2.6)
Central West – Woodbridge (Vaughan)	-	-	-	-	-	-	-	-	-	-	-	-
Mississauga Halton – Halton Hills	46 (0.3)	-	-	46 (0.5)	37 (0.2)	-	-	37 (0.4)	45 (0.3)	-	-	45 (0.6)
Mississauga Halton – Milton	34 (0.2)	-	-	34 (0.4)	54 (0.3)	-	-	54 (0.7)	40 (0.3)	-	-	40 (0.5)
Mississauga Halton – Northwest Mississauga	184 (1.1)	-	-	184 (2.0)	189 (1.2)	-	-	189 (2.3)	195 (1.3)	-	-	195 (2.4)
Mississauga Halton – Oakville	178 (1.1)	-	-	178 (1.9)	187 (1.2)	-	-	187 (2.3)	167 (1.1)	-	-	167 (2.1)
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-	-	-	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	608 (3.8)	608 (13.4)	-	-	599 (3.9)	599 (12.4)	-	-	570 (3.7)	570 (11.6)	-	-
Toronto Central – East	254 (1.6)	-	-	254 (2.7)	176 (1.1)	-	-	176 (2.1)	181 (1.2)	-	-	181 (2.2)
Toronto Central – North East	-	-	-	-	-	-	-	-	-	-	-	-
Toronto Central – North Toronto	332 (2.1)	332 (7.3)	-	-	411 (2.6)	411 (8.5)	-	-	382 (2.5)	382 (7.8)	-	-
Toronto Central – North West	-	-	-	-	-	-	-	-	-	-	-	-
Toronto Central – South East	281 (1.7)	281 (6.2)	-	-	338 (2.2)	338 (7.0)	-	-	350 (2.3)	350 (7.1)	-	-
Toronto Central – South West	651 (4.0)	496 (11.0)	-	155 (1.7)	726 (4.7)	593 (12.3)	-	133 (1.6)	777 (5.0)	651 (13.2)	-	126 (1.5)
Toronto Central – West	236 (1.5)	-	-	236 (2.6)	186 (1.2)	-	-	186 (2.3)	217 (1.4)	-	-	217 (2.7)
Central – Central York Region	213 (1.3)	-	-	213 (2.3)	201 (1.3)	-	-	201 (2.4)	203 (1.3)	-	-	203 (2.5)
Central – North York East	-	-	-	-	-	-	-	-	-	-	-	-
Central – North York Central	265 (1.6)	-	-	265 (2.9)	356 (2.3)	-	-	356 (4.3)	359 (2.3)	-	-	359 (4.4)
Central – North York West	459 (2.8)	-	-	459 (5.0)	365 (2.4)	-	-	365 (4.4)	363 (2.3)	-	-	363 (4.5)
Central – South East York Region	365 (2.3)	-	251 (10.7)	114 (1.2)	476 (3.1)	-	354 (14.4)	122 (1.5)	435 (2.8)	-	322 (14.4)	113 (1.4)

Sub-Local Health Integration Network <sup>2</sup>	2003/04				2006/07				2007/08			
	All n (%)	Regional Stroke Centre n (%)	District Stroke Centre n (%)	Non-designated n (%)	All n (%)	Regional Stroke Centre n (%)	District Stroke Centre n (%)	Non-designated n (%)	All n (%)	Regional Stroke Centre n (%)	District Stroke Centre n (%)	Non-designated n (%)
Central – South Simcoe & Northern York	55 (0.3)	-	-	55 (0.6)	35 (0.2)	-	-	35 (0.4)	35 (0.2)	-	-	35 (0.4)
Central – South West York Region	-	-	-	-	-	-	-	-	-	-	-	-
Central East – Durham East	306 (1.9)	-	-	306 (3.3)	295 (1.9)	-	-	295 (3.6)	262 (1.7)	-	-	262 (3.2)
Central East – Durham North/Central	74 (0.5)	-	-	74 (0.8)	49 (0.3)	-	-	49 (0.6)	57 (0.4)	-	-	57 (0.7)
Central East – Durham West	114 (0.7)	-	-	114 (1.2)	128 (0.8)	-	-	128 (1.6)	111 (0.7)	-	-	111 (1.4)
Central East – Haliburton Highlands	8 (<0.1)	-	-	8 (0.1)	6 (<0.1)	-	-	6 (0.1)	6 (<0.1)	-	-	6 (0.1)
Central East – Kawartha Lakes	118 (0.7)	-	-	118 (1.3)	105 (0.7)	-	-	105 (1.3)	83 (0.5)	-	-	83 (1.0)
Central East – Northumberland-Havelock	118 (0.7)	-	-	118 (1.3)	105 (0.7)	-	-	105 (1.3)	91 (0.6)	-	-	91 (1.1)
Central East – Peterborough City and County	243 (1.5)	-	243 (10.4)	-	248 (1.6)	-	248 (10.1)	-	230 (1.5)	-	230 (10.3)	-
Central East – Scarborough Agincourt-Rouge	185 (1.1)	-	-	185 (2.0)	181 (1.2)	-	-	181 (2.2)	151 (1.0)	-	-	151 (1.9)
Central East – Scarborough Cliffs-Scarborough Centre	501 (3.1)	-	-	501 (5.4)	445 (2.9)	-	-	445 (5.4)	444 (2.9)	-	-	444 (5.5)
South East – Addington North/Central Frontenac	-	-	-	-	-	-	-	-	-	-	-	-
South East – Belleville	144 (0.9)	-	144 (6.2)	-	105 (0.7)	-	105 (4.3)	-	133 (0.9)	-	133 (5.9)	-
South East – Brockville	113 (0.7)	-	-	113 (1.2)	95 (0.6)	-	-	95 (1.2)	101 (0.7)	-	-	101 (1.2)
South East – Central Hastings	-	-	-	-	-	-	-	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	285 (1.8)	285 (6.3)	-	-	286 (1.8)	286 (5.9)	-	-	314 (2.0)	314 (6.4)	-	-
South East – North Hastings	15 (0.1)	-	-	15 (0.2)	12 (0.1)	-	-	12 (0.1)	6 (<0.1)	-	-	6 (0.1)
South East – Prince Edward County	41 (0.3)	-	-	41 (0.4)	17 (0.1)	-	-	17 (0.2)	38 (0.2)	-	-	38 (0.5)
South East – Quinte West	64 (0.4)	-	-	64 (0.7)	50 (0.3)	-	-	50 (0.6)	51 (0.3)	-	-	51 (0.6)
South East – Rideau Lakes	-	-	-	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	77 (0.5)	-	-	77 (0.8)	41 (0.3)	-	-	41 (0.5)	52 (0.3)	-	-	52 (0.6)
South East – South Frontenac	-	-	-	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	24 (0.1)	-	-	24 (0.3)	27 (0.2)	-	-	27 (0.3)	21 (0.1)	-	-	21 (0.3)
Champlain – North Lanark/North Grenville	63 (0.4)	-	-	63 (0.7)	38 (0.2)	-	-	38 (0.5)	50 (0.3)	-	-	50 (0.6)
Champlain – Ottawa	913 (5.7)	364 (8.0)	-	549 (5.9)	891 (5.7)	326 (6.8)	-	565 (6.9)	935 (6.0)	376 (7.6)	-	559 (6.9)
Champlain – Prescott-Russell	26 (0.2)	-	-	26 (0.3)	28 (0.2)	-	-	28 (0.3)	51 (0.3)	-	-	51 (0.6)
Champlain – Renfrew	170 (1.1)	-	111 (4.7)	59 (0.6)	222 (1.4)	-	159 (6.5)	63 (0.8)	194 (1.3)	-	133 (5.9)	61 (0.7)
Champlain – Stormont Dundas Glengarry	153 (0.9)	-	-	153 (1.7)	120 (0.8)	-	-	120 (1.5)	120 (0.8)	-	-	120 (1.5)
North Simcoe Muskoka – Central East	218 (1.4)	218 (4.8)	-	-	206 (1.3)	206 (4.3)	-	-	233 (1.5)	233 (4.7)	-	-
North Simcoe Muskoka – Central West	91 (0.6)	-	-	91 (1.0)	92 (0.6)	-	-	92 (1.1)	85 (0.5)	-	-	85 (1.0)
North Simcoe Muskoka – Muskoka	147 (0.9)	-	60 (2.6)	87 (0.9)	125 (0.8)	-	-	125 (1.5)	122 (0.8)	-	-	122 (1.5)
North Simcoe Muskoka – North East	168 (1.0)	-	-	168 (1.8)	98 (0.6)	-	-	98 (1.2)	98 (0.6)	-	-	98 (1.2)
North Simcoe Muskoka – North West	94 (0.6)	-	-	94 (1.0)	94 (0.6)	-	-	94 (1.1)	107 (0.7)	-	-	107 (1.3)
North East – Algoma	229 (1.4)	-	183 (7.8)	46 (0.5)	256 (1.6)	-	198 (8.1)	58 (0.7)	252 (1.6)	-	200 (8.9)	52 (0.6)
North East – Cochrane	130 (0.8)	-	67 (2.9)	63 (0.7)	146 (0.9)	-	76 (3.1)	70 (0.8)	120 (0.8)	-	64 (2.9)	56 (0.7)
North East – James and Hudson Bay Coasts	8 (<0.1)	-	-	8 (0.1)	7 (<0.1)	-	-	7 (0.1)	6 (<0.1)	-	-	6 (0.1)
North East – Manitoulin-Sudbury	408 (2.5)	346 (7.6)	-	62 (0.7)	361 (2.3)	317 (6.6)	-	44 (0.5)	353 (2.3)	303 (6.2)	-	50 (0.6)
North East – Nipissing	202 (1.3)	-	165 (7.1)	37 (0.4)	168 (1.1)	-	135 (5.5)	33 (0.4)	182 (1.2)	-	145 (6.5)	37 (0.5)
North East – Parry Sound	29 (0.2)	-	-	29 (0.3)	54 (0.3)	-	-	54 (0.7)	31 (0.2)	-	-	31 (0.4)
North East – Timiskaming	80 (0.5)	-	-	80 (0.9)	66 (0.4)	-	-	66 (0.8)	59 (0.4)	-	-	59 (0.7)
North West – Dryden	18 (0.1)	-	-	18 (0.2)	12 (0.1)	-	-	12 (0.1)	15 (0.1)	-	-	15 (0.2)
North West – Kenora	30 (0.2)	-	-	30 (0.3)	38 (0.2)	-	-	38 (0.5)	48 (0.3)	-	-	48 (0.6)
North West – Kenora District (excl. Kenora & Dryden)	20 (0.1)	-	-	20 (0.2)	17 (0.1)	-	-	17 (0.2)	13 (0.1)	-	-	13 (0.2)
North West – Nipigon Red Rock Greenstone	11 (0.1)	-	-	11 (0.1)	8 (0.1)	-	-	8 (0.1)	6 (<0.1)	-	-	6 (0.1)
North West – North Shore	7 (<0.1)	-	-	7 (0.1)	6 (<0.1)	-	-	6 (0.1)	8 (0.1)	-	-	8 (0.1)
North West – Rainy River District	39 (0.2)	-	-	39 (0.4)	38 (0.2)	-	-	38 (0.5)	32 (0.2)	-	-	32 (0.4)
North West – Thunder Bay City	283 (1.8)	283 (6.3)	-	-	371 (2.4)	371 (7.7)	-	-	342 (2.2)	342 (6.9)	-	-

Data source: Canadian Institute for Health Information, Discharge Abstract Database, (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

<sup>1</sup> Analysis is based on unique patients (i.e., does not include multiple patient-visits).

<sup>2</sup> Sub-LHIN planning area version 5.1.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 2.5.1A Inpatient length of stay for stroke/TIA, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>1</sup>	2003/04			2006/07			2007/08		
	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
Erie St. Clair – Essex	669	8.5	6	585	11.2	7	596	10.2	7
Erie St. Clair – Chatham-Kent	225	8.5	6	191	8.8	7	202	6.6	6
Erie St. Clair – Lambton	207	8.6	6	174	9.6	6.5	166	8.7	5
South West – Central	239	8.2	6	231	6.3	4	240	7.0	5
South West – North	301	10.5	5	279	7.7	4	265	7.2	4
South West – South	904	10.9	7	857	12.0	6	826	13.9	6
Waterloo Wellington – Rural - South Grey & North Wellington	41	9.1	7	32	9.7	7.5	30	6.5	4
Waterloo Wellington – Rural Waterloo	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Wellington	54	9.8	7	36	6.3	5	62	9.1	6
Waterloo Wellington – Urban Guelph	131	11.3	6	148	9.8	6.5	130	11.6	7
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	511	11.9	5	493	9.2	6	476	9.8	5
Hamilton Niagara Haldimand Brant – Brant	6	5.2	4.5	195	10.8	7	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	209	8.7	6	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Burlington	217	13.0	6	200	8.8	5	192	9.4	5
Hamilton Niagara Haldimand Brant – Fort Erie	43	6.5	5	37	11.1	6	27	7.1	5
Hamilton Niagara Haldimand Brant – Grimsby	48	7.5	5	29	10.2	4	45	8.1	4
Hamilton Niagara Haldimand Brant – Haldimand	63	8.1	6	53	13.1	6	48	19.6	8
Hamilton Niagara Haldimand Brant – Hamilton	863	17.4	7	875	15.3	8	858	12.5	7
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	145	12.7	10	168	13.0	9	149	12.2	7
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-	-	-	**	-	-
Hamilton Niagara Haldimand Brant – Norfolk	88	18.0	10	70	31.1	7	93	19.0	8
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	28	20.1	10.5	16	11.4	6	11	33.4	16
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	294	8.5	7	236	8.9	6	275	9.4	6
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	136	9.0	7	132	14.3	9	107	11.5	6
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-	-	-	-	-
Central West – Brampton	235	12.9	7	200	14.1	7	256	15.6	8.5
Central West – Caledon	-	-	-	-	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-	-	-	-	-
Central West – Orangeville	114	8.2	6	97	7.4	6	107	9.3	6
Central West – Rexdale (Toronto)	210	18.2	10	194	11.0	7	212	16.7	8
Central West – Woodbridge (Vaughan)	-	-	-	-	-	-	-	-	-
Mississauga Halton – Halton Hills	46	8.1	5	37	10.1	5	45	7.2	5
Mississauga Halton – Milton	34	9.3	5	54	6.7	6	40	7.2	5
Mississauga Halton – Northwest Mississauga	184	11.1	7.5	189	13.9	8	195	11.0	6
Mississauga Halton – Oakville	178	9.4	6	187	9.0	5	167	15.2	7
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	608	11.7	6	599	12.8	7	570	13.1	7
Toronto Central – East	254	14.6	10	176	14.9	9	181	13.6	8
Toronto Central – North East	-	-	-	-	-	-	-	-	-
Toronto Central – North Toronto	332	15.9	9	411	13.7	6	382	14.5	7
Toronto Central – North West	-	-	-	-	-	-	-	-	-
Toronto Central – South East	281	15.9	9	338	14.0	8	350	13.8	7
Toronto Central – South West	651	15.5	8	726	13.2	8	777	13.8	7
Toronto Central – West	236	16.3	10	186	13.1	7	217	13.0	7
Central – Central York Region	213	11.8	7	201	11.0	8	203	11.8	9
Central – North York East	-	-	-	-	-	-	-	-	-
Central – North York Central	265	12.8	8	356	11.1	6	359	11.1	6
Central – North York West	459	20.1	9	365	17.1	9	363	18.3	9
Central – South East York Region	365	15.5	9	476	12.3	8	435	12.1	8
Central – South Simcoe & Northern York Region	55	10.4	8	35	10.8	7	35	13.5	8
Central – South West York Region	-	-	-	-	-	-	-	-	-
Central East – Durham East	306	9.4	6.5	295	10.1	6	262	10.2	6.5
Central East – Durham North/Central	74	8.0	6.5	49	8.3	6	57	8.3	4

Sub-Local Health Integration Network <sup>1</sup>	2003/04			2006/07			2007/08		
	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
Central East – Durham West	114	9.4	5	128	13.1	7	111	12.7	8
Central East – Haliburton Highlands	8	2.6	2	6	16.0	8.5	6	9.5	4.5
Central East – Kawartha Lakes	118	9.3	6.5	105	8.6	6	83	9.5	7
Central East – Northumberland-Havelock	118	9.6	7	105	13.4	6	91	13.1	4
Central East – Peterborough City and County	243	16.0	6	248	14.1	8	230	14.2	7
Central East – Scarborough Agincourt-Rouge	185	12.8	7	181	11.4	5	151	11.1	5
Central East – Scarborough Cliffs-Scarborough Centre	501	13.5	8	445	13.2	7	444	13.6	7
South East – Addington North/Central Frontenac	-	-	-	-	-	-	-	-	-
South East – Belleville	144	10.1	5	105	10.1	5	133	10.1	7
South East – Brockville	113	10.9	7	95	16.2	6	101	15.3	5
South East – Central Hastings	-	-	-	-	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	285	16.0	8	286	19.3	8.5	314	18.9	9
South East – North Hastings	27	7.7	5	12	9.7	4.5	6	6.0	4
South East – Prince Edward County	41	5.1	3	17	16.4	4	38	15.4	5
South East – Quinte West	64	7.6	5	50	7.3	3	51	16.4	10
South East – Rideau Lakes	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	77	15.0	8	41	16.3	6	52	13.6	6.5
South East – South Frontenac	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	24	11.3	6.5	27	13.4	4	21	5.8	4
Champlain – North Lanark/North Grenville	63	11.6	6	38	11.2	5	50	14.1	8.5
Champlain – Ottawa	913	14.7	8	891	15.3	8	935	17.0	8
Champlain – Prescott-Russell	26	12.7	8	28	8.7	8.5	51	8.3	7
Champlain – Renfrew	158	8.3	5	222	15.2	6	194	16.1	5
Champlain – Stormont Dundas Glengarry	153	12.9	9	120	12.0	8	120	11.1	7
North Simcoe Muskoka – Central East	218	8.1	5	206	8.0	6	233	9.2	6
North Simcoe Muskoka – Central West	91	11.5	4	92	10.6	5	85	9.9	4
North Simcoe Muskoka – Muskoka	147	12.2	4	125	8.5	3	122	9.5	3.5
North Simcoe Muskoka – North East	168	15.8	7	98	10.6	6	98	11.4	7.5
North Simcoe Muskoka – North West	94	10.2	6	94	5.9	3.5	107	8.0	6
North East – Algoma	229	10.4	5	256	8.0	5	252	12.2	5
North East – Cochrane	130	12.7	6	146	17.6	5	120	12.2	4
North East – James and Hudson Bay Coasts	8	6.3	3.5	7	15.1	17	6	8.0	6.5
North East – Manitoulin-Sudbury	408	14.0	6	361	15.7	8	353	12.7	7
North East – Nipissing	202	13.7	5	168	11.7	7	182	10.8	5
North East – Parry Sound	29	6.1	4	54	7.9	5.5	31	12.3	5
North East – Timiskaming	80	13.3	7	66	13.5	6	59	15.0	5
North West – Dryden	18	13.9	4	12	35.3	2	15	17.4	3
North West – Kenora	30	5.4	4	38	13.1	7	48	19.8	4.5
North West – Kenora District (excl. Kenora & Dryden)	20	6.0	2.5	17	7.2	3	13	2.7	2
North West – Nipigon Red Rock Greenstone	11	2.7	1	8	18.8	2.5	6	2.3	2
North West – North Shore	7	5.0	2	6	3.3	1.5	8	107.5	2.5
North West – Rainy River District	39	8.0	4	38	6.3	2.5	32	8.0	6.5
North West – Thunder Bay City	283	12.6	8	371	9.8	7	342	9.7	7

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged with most responsible diagnosis of stroke/TIA.

<sup>1</sup> Based on sub-LHIN planning area version 5.1.

<sup>2</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 2.5.2A Acute inpatient length of stay for ischemic stroke, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>1</sup>	2003/04			2006/07			2007/08		
	No. of Stroke Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Stroke Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Stroke Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
Erie St. Clair – Essex	480	8.5	6	444	11.8	7.5	449	10.9	8
Erie St. Clair – Chatham-Kent	164	10.0	7.5	138	10.2	8	150	7.3	7
Erie St. Clair – Lambton	155	9.5	7	139	9.9	7	120	9.3	6
South West – Central	178	9.3	6	167	7.1	5	170	7.7	5
South West – North	213	12.0	7	192	9.2	6	189	8.2	6
South West – South	604	11.0	7	544	12.7	7	548	15.6	7
Waterloo Wellington – Rural – South Grey & North Wellington	35	10.1	7	26	11.4	8.5	24	6.8	4.5
Waterloo Wellington – Rural Waterloo	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Wellington	36	11.9	10	22	8.6	6.5	38	12.3	10.5
Waterloo Wellington – Urban Guelph	88	13.6	8	98	11.9	9	93	13.3	9
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	368	13.9	7	358	11.0	7	347	11.4	7
Hamilton Niagara Haldimand Brant – Brant	**	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	150	10.0	7	149	11.9	8	-	-	-
Hamilton Niagara Haldimand Brant – Burlington	135	16.7	8	148	8.5	6	140	10.3	6
Hamilton Niagara Haldimand Brant – Fort Erie	29	7.8	7	27	14.0	12	18	8.5	6
Hamilton Niagara Haldimand Brant – Grimsby	20	10.9	10	21	13.2	6	33	8.6	4
Hamilton Niagara Haldimand Brant – Haldimand	49	9.7	7	36	16.2	10	39	23.2	12
Hamilton Niagara Haldimand Brant – Hamilton	543	21.5	10	516	17.1	9	519	14.5	9
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	109	14.9	12	129	13.7	10	117	13.2	8
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-	-	-	**	-	-
Hamilton Niagara Haldimand Brant – Norfolk	65	21.3	13	48	34.8	9.5	52	21.2	10
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	19	23.5	12	10	16.2	8.5	9	40.3	16
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	179	10.7	9	166	10.2	7	201	10.8	7
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	80	10.1	8	92	17.6	12	74	13.2	8
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-	-	-	-	-
Central West – Brampton	193	13.5	8	154	15.1	9	190	17.1	9
Central West – Caledon	-	-	-	-	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-	-	-	-	-
Central West – Orangeville	73	8.8	8	66	8.4	7	66	10.6	7
Central West – Rexdale (Toronto)	159	19.3	11	128	11.9	8	150	19.0	9
Central West – Woodbridge (Vaughan)	-	-	-	-	-	-	-	-	-
Mississauga Halton – Halton Hills	33	9.8	7	25	9.0	6	36	7.8	6
Mississauga Halton – Milton	22	11.4	8.5	43	7.5	6	27	9.0	9
Mississauga Halton – Northwest Mississauga	124	11.9	9	139	15.4	9	133	12.3	7
Mississauga Halton – Oakville	123	11.1	7	110	11.8	8	106	17.8	8
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	392	12.1	7	423	13.2	7	406	13.7	7
Toronto Central – East	199	16.4	11	144	15.3	9	134	13.9	9
Toronto Central – North East	-	-	-	-	-	-	-	-	-
Toronto Central – North Toronto	224	17.9	10.5	245	13.8	7	249	14.2	8
Toronto Central – North West	-	-	-	-	-	-	-	-	-
Toronto Central – South East	139	19.7	10	159	13.5	8	149	16.1	8
Toronto Central – South West	391	15.3	9	407	12.8	8	418	14.2	7
Toronto Central – West	192	16.4	10	154	14.2	8	168	13.7	8
Central – Central York Region	163	13.2	8	152	11.5	8	160	13.0	10
Central – North York East	-	-	-	-	-	-	-	-	-
Central – North York Central	203	14.4	10	247	13.3	8	224	13.2	7
Central – North York West	334	22.4	11	260	18.8	12	253	21.2	13
Central – South East York Region	264	15.0	10	346	13.9	8	319	13.6	9
Central – South Simcoe & Northern York Region	43	12.4	11	24	13.2	9	21	13.8	10
Central – South West York Region	-	-	-	-	-	-	-	-	-
Central East – Durham East	227	11.1	7	227	11.2	7	188	9.5	7
Central East – Durham North/Central	51	9.3	8	36	10.0	7	38	8.7	4



Sub-Local Health Integration Network <sup>1</sup>	2003/04			2006/07			2007/08		
	No. of Stroke Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Stroke Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Stroke Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
Central East – Durham West	87	10.3	5	96	13.4	7	78	13.4	9
Central East – Haliburton Highlands	**	-	-	**	-	-	**	-	-
Central East – Kawartha Lakes	81	10.6	7	79	10.0	7	61	10.2	7
Central East – Northumberland-Havelock	90	10.7	8	80	15.8	7	63	16.5	6
Central East – Peterborough City and County	180	17.6	7.5	186	16.4	9	162	14.8	9
Central East – Scarborough Agincourt-Rouge	138	13.8	7	135	12.4	5	98	11.4	5
Central East – Scarborough Cliffs-Scarborough Centre	391	14.3	9	343	14.0	8	337	14.8	8
South East – Addington North/Central Frontenac	-	-	-	-	-	-	-	-	-
South East – Belleville	95	11.9	6	70	13.1	6	95	11.0	8
South East – Brockville	83	12.4	8	70	17.0	8.5	74	18.1	6
South East – Central Hastings	-	-	-	-	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	182	17.4	9	186	18.5	9	202	20.3	10
South East – North Hastings	16	10.6	8.5	8	11.9	8.5	**	-	-
South East – Prince Edward County	25	7.0	7	9	18.0	5	25	20.5	6
South East – Quinte West	48	8.8	6.5	28	9.7	7	42	16.9	11.5
South East – Rideau Lakes	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	50	19.5	11.5	25	23.4	10	36	17.6	10.5
South East – South Frontenac	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	18	14.4	11.5	16	20.6	8	10	7.8	6
Champlain – North Lanark/North Grenville	42	15.7	10	24	15.7	7	33	17.7	9
Champlain – Ottawa	598	15.6	10	626	15.9	8	598	18.7	9
Champlain – Prescott-Russell	23	13.4	10	23	8.6	9	40	9.2	7
Champlain – Renfrew	82	11.2	6	138	18.8	6	121	19.8	7
Champlain – Stormont Dundas Glengarry	111	14.5	10	93	13.2	9	88	11.3	8
North Simcoe Muskoka – Central East	146	10.2	6	146	9.3	7	158	9.6	7
North Simcoe Muskoka – Central West	52	17.1	8	52	13.6	9	52	14.2	11
North Simcoe Muskoka – Muskoka	82	19.0	10	63	13.4	6	66	12.3	5
North Simcoe Muskoka – North East	121	19.3	10	64	13.6	9	67	13.5	9
North Simcoe Muskoka – North West	65	13.1	8	58	7.4	5	79	9.1	7
North East – Algoma	148	13.8	7	157	9.2	6	146	17.2	7
North East – Cochrane	83	16.5	7	87	20.7	8	76	12.4	6
North East – James and Hudson Bay Coasts	**	-	-	**	-	-	**	-	-
North East – Manitoulin-Sudbury	240	15.9	8	239	17.7	10	207	14.7	9
North East – Nipissing	121	18.5	8	111	14.5	9	102	14.6	7
North East – Parry Sound	16	7.3	6.5	35	10.1	7	18	15.9	7.5
North East – Timiskaming	59	16.1	9	40	19.9	9	41	19.7	8
North West – Dryden	14	11.6	4	11	38.4	2	12	21.3	5
North West – Kenora	17	7.7	6	28	16.6	7.5	28	28.0	11.5
North West – Kenora District (excl. Kenora & Dryden)	10	8.2	2.5	16	7.6	3.5	8	3.3	2
North West – Nipigon Red Rock Greenstone	**	-	-	**	-	-	**	-	-
North West – North Shore	**	-	-	**	-	-	**	-	-
North West – Rainy River District	25	9.8	6	22	9.1	5.5	23	9.1	8
North West – Thunder Bay City	174	14.7	9.5	248	11.0	8	218	11.3	8

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged with the most responsible diagnosis of ischemic stroke.

<sup>1</sup> Based on sub-LHIN planning area version 5.1.

<sup>2</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 2.5.3A Acute inpatient length of stay for transient ischemic attack, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>1</sup>	2003/04			2006/07			2007/08		
	No. of Stroke Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Stroke Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Stroke Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
Erie St. Clair – Essex	107	4.2	4	79	6.6	4	73	4.9	4
Erie St. Clair – Chatham-Kent	44	3.5	3	44	4.3	3	43	4.3	4
Erie St. Clair – Lambton	39	4.5	3	21	10.7	6	26	4.7	3.5
South West – Central	49	3.9	2	40	3.6	2.5	50	3.9	2
South West – North	62	6.4	3	73	4.4	2	55	4.9	3
South West – South	116	4.6	3	142	4.3	3	116	3.5	2
Waterloo Wellington – Rural – South Grey & North Wellington	**	1.0	1	6	2.2	2	**	1.8	2
Waterloo Wellington – Rural Waterloo	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Wellington	12	4.8	4.5	9	3.2	2	19	3.3	3
Waterloo Wellington – Urban Guelph	32	5.2	3.5	37	4.1	3	24	5.6	4
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	82	4.4	3	81	3.3	3	78	3.4	2
Hamilton Niagara Haldimand Brant – Brant	**	3.0	3	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	39	3.7	3	36	7.1	4	43	4.3	3
Hamilton Niagara Haldimand Brant – Burlington	46	3.6	2	27	4.5	3	36	6.3	4
Hamilton Niagara Haldimand Brant – Fort Erie	11	3.5	3	8	2.9	2.5	8	4.8	4.5
Hamilton Niagara Haldimand Brant – Grimsby	23	3.6	2	8	2.3	2	9	4.8	2
Hamilton Niagara Haldimand Brant – Haldimand	14	2.5	2	16	4.6	3	7	3.4	2
Hamilton Niagara Haldimand Brant – Hamilton	133	4.4	2	146	3.9	2	161	4.8	3
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	15	5.7	6	11	8.1	6	14	4.8	3
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	**	4.0	5	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Norfolk	18	6.5	3.5	11	3.5	2	31	14.4	4
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	6	7.7	3.5	6	3.5	3	**	2.0	2
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	83	5.0	4	49	4.7	3	49	4.8	3
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	40	5.5	4	26	5.2	3.5	26	6.1	4.5
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-	-	-	-	-
Central West – Brampton	19	2.1	1	24	3.8	3.5	32	5.5	4.5
Central West – Caledon	-	-	-	-	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-	-	-	-	-
Central West – Orangeville	17	3.8	4	17	4.7	4	22	5.9	4.5
Central West – Rexdale (Toronto)	19	4.5	3	35	6.5	4	30	4.4	2
Central West – Woodbridge (Vaughan)	-	-	-	-	-	-	-	-	-
Mississauga Halton – Halton Hills	11	3.5	2	9	2.8	3	7	2.9	2
Mississauga Halton – Milton	10	5.9	3	11	3.9	3	13	3.3	3
Mississauga Halton – Northwest Mississauga	33	6.0	4	20	4.6	4	35	4.7	4
Mississauga Halton – Oakville	39	3.6	3	54	3.7	2	38	5.4	4
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	45	3.3	2	40	4.4	4	33	4.6	3
Toronto Central – East	26	4.5	4	8	10.3	5	21	8.7	5
Toronto Central – North East	-	-	-	-	-	-	-	-	-
Toronto Central – North Toronto	37	4.5	3	58	3.8	3	50	5.3	3
Toronto Central – North West	-	-	-	-	-	-	-	-	-
Toronto Central – South East	15	4.5	3	40	4.1	3	42	4.0	3
Toronto Central – South West	69	4.0	3	74	4.2	2	101	4.5	3
Toronto Central – West	16	7.8	3.5	12	3.3	3	19	3.1	3
Central – Central York Region	27	5.0	4	24	6.2	3.5	19	6.4	5
Central – North York East	-	-	-	-	-	-	-	-	-
Central – North York Central	28	4.0	2.5	71	5.0	3	82	3.3	2
Central – North York West	68	7.3	3	54	6.6	4	56	7.9	3
Central – South East York Region	31	4.5	3	64	6.7	5	74	6.2	4
Central – South Simcoe & Northern York Region	11	3.3	2	8	2.1	1.5	10	13.2	2
Central – South West York Region	-	-	-	-	-	-	-	-	-
Central East – Durham East	43	4.2	3	35	3.8	3	38	5.2	4
Central East – Durham North/Central	21	5.2	4	11	3.7	3	14	3.1	2

Sub-Local Health Integration Network <sup>1</sup>	2003/04			2006/07			2007/08		
	No. of Stroke Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Stroke Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Stroke Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
Central East – Durham West	15	3.8	4	15	7.7	5	18	7.7	4.5
Central East – Haliburton Highlands	**	2.3	2	**	1.0	1	**	3.0	3
Central East – Kawartha Lakes	20	3.1	2	19	4.4	4	20	6.2	4.5
Central East – Northumberland-Havelock	18	6.2	5	18	3.5	3	23	2.9	3
Central East – Peterborough City and County	43	6.1	2	37	4.2	2	44	5.0	3
Central East – Scarborough Agincourt-Rouge	17	9.5	7	23	4.3	3	31	3.9	3
Central East – Scarborough Cliffs-Scarborough Centre	50	5.6	4	42	4.9	4	53	4.4	3
South East – Addington North/Central Frontenac	-	-	-	-	-	-	-	-	-
South East – Belleville	35	7.5	4	20	3.9	2.5	21	5.8	4
South East – Brockville	26	5.5	3	19	7.7	3	20	7.4	3
South East – Central Hastings	-	-	-	-	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	30	5.3	3	37	5.5	4	43	7.1	4
South East – North Hastings	7	3.0	2	**	6.5	6.5	**	4.0	4
South East – Prince Edward County	16	2.1	2	8	14.6	2	9	4.4	3
South East – Quinte West	12	2.5	2	14	3.3	2.5	**	22.4	7
South East – Rideau Lakes	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	26	5.8	4	16	5.1	3.5	15	4.9	4
South East – South Frontenac	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	**	1.8	2	11	3.0	2	10	4.0	2
Champlain – North Lanark/North Grenville	20	3.0	2	12	3.9	2.5	16	7.3	3
Champlain – Ottawa	99	4.9	4	72	4.4	3.5	102	7.7	4
Champlain – Prescott-Russell	**	6.5	6.5	**	11.3	9	8	4.4	3.5
Champlain – Renfrew	70	4.7	4	73	7.1	4	64	10.8	3
Champlain – Stormont Dundas Glengarry	31	5.7	3	15	6.3	4	24	7.6	5
North Simcoe Muskoka – Central East	56	3.2	2	35	4.5	3	45	3.8	3
North Simcoe Muskoka – Central West	32	3.0	2	27	4.8	2	25	2.5	2
North Simcoe Muskoka – Muskoka	60	3.6	2	41	3.2	2	41	4.0	2
North Simcoe Muskoka – North East	33	5.5	3	25	4.7	2	18	2.9	2
North Simcoe Muskoka – North West	26	3.5	2	29	2.1	1	21	4.1	3
North East – Algoma	57	4.2	3	67	4.6	3	84	4.8	3
North East – Cochrane	33	3.2	3	49	14.2	3	37	12.4	3
North East – James and Hudson Bay Coasts	**	3.7	4	**	4.7	4	**	10.5	10.5
North East – Manitoulin-Sudbury	103	6.1	3	78	4.8	3	84	4.3	4
North East – Nipissing	66	3.9	2	46	5.1	3.5	64	4.6	3
North East – Parry Sound	9	5.7	3	14	3.4	3	6	8.8	4
North East – Timiskaming	15	4.8	3	22	3.7	3	17	2.5	2
North West – Dryden	**	19.0	19	**	1.0	1	**	1.7	2
North West – Kenora	11	2.3	2	10	3.1	2	14	3.4	3
North West – Kenora District (excl. Kenora & Dryden)	7	3.4	2	-	-	-	**	2.0	2
North West – Nipigon Red Rock Greenstone	8	2.5	1	**	2.0	2	**	2.3	2
North West – North Shore	**	1.5	1.5	**	4.0	1.5	**	2.3	2
North West – Rainy River District	8	1.4	1	11	2.2	2	6	3.5	2
North West – Thunder Bay City	73	7.4	5	81	5.4	4	79	4.7	4

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged with most responsible diagnosis of transient ischemic attack.

<sup>1</sup> Based on sub-LHIN planning area version 5.1.

<sup>2</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 2.5.4A Acute inpatient length of stay for intracerebral hemorrhage, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>1</sup>	2003/04			2006/07			2007/08		
	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
Erie St. Clair – Essex	56	11.4	9	47	11.4	7	52	10.7	8
Erie St. Clair – Chatham-Kent	16	6.8	4.5	8	7.8	8	9	5.0	3
Erie St. Clair – Lambton	10	11.3	6.5	13	6.1	4	16	12.1	3.5
South West – Central	12	9.6	7	21	5.5	2	18	10.0	6
South West – North	24	8.0	3.5	10	3.6	2	16	4.8	3
South West – South	96	11.0	5.5	105	12.8	6	98	14.2	7
Waterloo Wellington – Rural – South Grey & North Wellington	**	-	-	-	-	-	**	-	-
Waterloo Wellington – Rural Waterloo	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Wellington	**	-	-	**	-	-	**	-	-
Waterloo Wellington – Urban Guelph	10	12.0	4	10	10.7	4.5	12	11.3	7
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	55	11.0	4	48	5.9	2	42	8.9	2.5
Hamilton Niagara Haldimand Brant – Brant	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	20	8.8	6	10	8.6	6	-	-	-
Hamilton Niagara Haldimand Brant – Burlington	35	11.3	6	23	16.3	7	14	9.2	5
Hamilton Niagara Haldimand Brant – Fort Erie	**	-	-	**	-	-	**	-	-
Hamilton Niagara Haldimand Brant – Grimsby	**	-	-	-	-	-	**	-	-
Hamilton Niagara Haldimand Brant – Haldimand	-	-	-	**	-	-	**	-	-
Hamilton Niagara Haldimand Brant – Hamilton	112	14.8	6	114	19.9	9	78	12.5	7
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	20	6.7	5.5	27	12.3	6	17	11.9	5
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-	-	-	9	22.3	9
Hamilton Niagara Haldimand Brant – Norfolk	**	-	-	10	46.4	6.5	-	-	-
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	**	-	-	-	-	-	21	7.0	5
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	30	5.5	3	20	8.2	7	7	13.9	9
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	16	12.1	7.5	12	9.3	8	**	-	-
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-	-	-	-	-
Central West – Brampton	17	17.4	7	17	17.5	6	25	15.2	11
Central West – Caledon	-	-	-	-	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-	-	-	-	-
Central West – Orangeville	20	11.1	12	12	6.6	5.5	18	9.2	6.5
Central West – Rexdale (Toronto)	30	22.0	6.5	25	13.7	6	26	16.2	8.5
Central West – Woodbridge (Vaughan)	-	-	-	-	-	-	-	-	-
Mississauga Halton – Halton Hills	**	-	-	**	-	-	-	-	-
Mississauga Halton – Milton	**	-	-	-	-	-	-	-	-
Mississauga Halton – Northwest Mississauga	25	14.9	8	19	14.9	5	24	14.0	6.5
Mississauga Halton – Oakville	14	12.5	6.5	18	9.7	5	20	22.3	7.5
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	101	11.6	6	82	16.2	6	88	12.1	7
Toronto Central – East	25	10.6	4	21	14.8	7	25	16.6	12
Toronto Central – North East	-	-	-	-	-	-	-	-	-
Toronto Central – North Toronto	45	14.4	7	56	18.6	9	52	22.5	7
Toronto Central – North West	-	-	-	-	-	-	-	-	-
Toronto Central – South East	53	9.5	7	55	21.4	12	55	17.2	8
Toronto Central – South West	97	19.8	7	106	17.8	10	101	15.8	10
Toronto Central – West	25	21.2	11	17	9.2	8	26	16.7	10.5
Central – Central York Region	20	10.7	8.5	25	12.8	9	21	8.6	7
Central – North York East	-	-	-	-	-	-	-	-	-
Central – North York Central	30	11.2	6	36	9.1	4	48	14.2	8
Central – North York West	49	24.6	13	41	24.1	5	46	16.6	8
Central – South East York Region	68	22.8	12	57	10.2	7	40	10.9	5.5
Central – South Simcoe & Northern York Region	**	-	-	**	-	-	**	-	-
Central – South West York Region	-	-	-	-	-	-	-	-	-
Central East – Durham East	32	4.8	2	29	9.2	8	27	20.1	8
Central East – Durham North/Central	**	-	-	**	-	-	**	-	-

Sub-Local Health Integration Network <sup>1</sup>	2003/04			2006/07			2007/08		
	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
Central East – Durham West	12	9.3	9	17	15.8	12	14	15.9	6.5
Central East – Haliburton Highlands	**	-	-	-	-	-	-	-	-
Central East – Kawartha Lakes	15	11.3	9	6	4.0	1.5	**	-	-
Central East – Northumberland-Havelock	8	6.3	3.5	7	12.6	12	**	-	-
Central East – Peterborough City and County	20	22.5	5	22	13.0	5.5	23	27.9	5
Central East – Scarborough Agincourt-Rouge	26	10.7	4	17	12.9	5	19	21.7	5
Central East – Scarborough Cliffs-Scarborough Centre	57	16.1	10	47	15.9	9	42	13.2	8.5
South East – Addington North/Central Frontenac	-	-	-	-	-	-	-	-	-
South East – Belleville	10	5.3	4	13	5.4	3	15	10.9	6
South East – Brockville	**	-	-	6	32.8	33.5	7	8.7	7
South East – Central Hastings	-	-	-	-	-	-	-	-	-
South East – Gananogue Leeds	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	36	17.1	9	39	24.9	12	39	31.2	13
South East – North Hastings	-	-	-	**	-	-	**	-	-
South East – Prince Edward County	-	-	-	-	-	-	**	-	-
South East – Quinte West	**	-	-	7	6.7	1	**	-	-
South East – Rideau Lakes	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	**	-	-	-	-	-	-	-	-
South East – South Frontenac	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	-	-	-	-	-	-	-	-	-
Champlain – North Lanark/North Grenville	**	-	-	**	-	-	**	-	-
Champlain – Ottawa	151	15.8	8	111	16.1	7	160	16.5	8
Champlain – Prescott-Russell	**	-	-	**	-	-	**	-	-
Champlain – Renfrew	9	9.2	6	11	23.1	11	8	4.0	1
Champlain – Stormont Dundas Glengarry	9	17.4	13	11	10.1	6	8	18.8	7.5
North Simcoe Muskoka – Central East	15	5.7	3	23	4.4	3	30	15.2	6
North Simcoe Muskoka – Central West	6	9.8	8	13	10.6	7	6	6.3	5.5
North Simcoe Muskoka – Muskoka	**	-	-	17	4.5	3	13	13.2	5
North Simcoe Muskoka – North East	13	10.1	2	7	6.1	5	10	11.1	7
North Simcoe Muskoka – North West	**	-	-	**	-	-	6	7.7	6.5
North East – Algoma	18	4.7	1	24	12.5	4.5	15	6.2	5
North East – Cochrane	13	13.1	2	8	9.3	6	**	-	-
North East – James and Hudson Bay Coasts	**	-	-	**	-	-	-	-	-
North East – Manitoulin-Sudbury	42	23.6	7	34	28.2	11.5	47	21.9	11
North East – Nipissing	12	22.4	5.5	8	13.8	10	15	7.5	5
North East – Parry Sound	**	-	-	**	-	-	6	6.8	2.5
North East – Timiskaming	**	-	-	**	-	-	**	-	-
North West – Dryden	**	-	-	-	-	-	-	-	-
North West – Kenora	**	-	-	-	-	-	**	-	-
North West – Kenora District (excl. Kenora & Dryden)	**	-	-	**	-	-	**	-	-
North West – Nipigon Red Rock Greenstone	-	-	-	-	-	-	**	-	-
North West – North Shore	-	-	-	-	-	-	-	-	-
North West – Rainy River District	**	-	-	**	-	-	**	-	-
North West – Thunder Bay City	22	16.3	7.5	31	11.7	8	34	12.6	7.5

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients discharged with most responsible diagnosis of intracerebral hemorrhage.

<sup>1</sup> Based on sub-LHIN planning area version 5.1.

<sup>2</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 2.5.6A Acute inpatient length of stay for ill-defined stroke, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>1</sup>	2003/04			2006/07			2007/08		
	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
Erie St. Clair – Essex	240	7.6	6	222	10.8	7	217	11.0	8
Erie St. Clair – Chatham-Kent	70	9.2	6	63	8.8	7	55	7.3	7
Erie St. Clair – Lambton	89	8.7	7	96	10.5	7	72	8.6	5
South West – Central	106	8.3	6	106	7.0	5	99	7.7	5
South West – North	111	11.3	5	95	8.5	5	84	5.5	3.5
South West – South	251	8.9	6	193	11.0	7	167	10.3	6
Waterloo Wellington – Rural – South Grey & North Wellington	21	10.4	7	9	11.3	11	12	7.0	3
Waterloo Wellington – Rural Waterloo	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Wellington	28	10.8	7.5	16	9.1	6	16	11.0	9
Waterloo Wellington – Urban Guelph	37	13.1	7	51	10.5	7	38	10.9	5
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	182	13.7	7	43	8.7	6	38	7.8	6
Hamilton Niagara Haldimand Brant – Brant	**	7.7	7	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	104	10.5	7	82	11.1	6.5	106	12.5	6
Hamilton Niagara Haldimand Brant – Burlington	98	13.2	7	101	7.2	5	94	9.6	6
Hamilton Niagara Haldimand Brant – Fort Erie	14	5.8	5.5	**	8.0	8	**	3.6	3
Hamilton Niagara Haldimand Brant – Grimsby	11	11.3	10	16	9.7	5.5	18	5.6	3
Hamilton Niagara Haldimand Brant – Haldimand	47	9.8	6	28	12.8	7	21	25.1	12
Hamilton Niagara Haldimand Brant – Hamilton	219	16.3	8	167	15.9	9	126	12.6	6
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	42	12.9	10	40	11.4	8	27	9.0	5
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	51	20.2	12	28	29.2	7	26	22.3	11
Hamilton Niagara Haldimand Brant – Norfolk	**	16.5	16.5	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	10	16.5	9	**	19.0	15	**	38.3	23
Hamilton Niagara Haldimand Brant – Six Nations (Part)	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	87	9.2	8	58	10.0	6.5	91	9.8	6
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	46	8.6	8	39	17.2	12	18	6.8	5.5
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-	-	-	-	-
Central West – Brampton	104	10.7	5.5	71	12.5	8	86	13.1	8
Central West – Caledon	-	-	-	-	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-	-	-	-	-
Central West – Orangeville	41	8.3	5	25	8.2	7	38	10.0	6.5
Central West – Rexdale (Toronto)	72	16.1	10	41	8.1	6	63	12.3	7
Central West – Woodbridge (Vaughan)	-	-	-	-	-	-	-	-	-
Mississauga Halton – Halton Hills	14	7.2	6.5	8	9.1	8	10	7.0	4.5
Mississauga Halton – Milton	8	15.4	15	18	5.7	5	8	6.5	5
Mississauga Halton – Northwest Mississauga	41	9.8	7	34	9.3	7	40	10.1	7.5
Mississauga Halton – Oakville	34	8.9	7.5	29	9.9	6	36	11.6	7
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	148	12.6	6	125	9.3	6	110	9.5	5
Toronto Central – East	110	15.3	11	48	11.4	7	39	16.0	10
Toronto Central – North East	-	-	-	-	-	-	-	-	-
Toronto Central – North Toronto	63	12.1	7	34	9.4	4	31	5.5	3
Toronto Central – North West	-	-	-	-	-	-	-	-	-
Toronto Central – South East	34	10.8	6.5	29	11.6	3	23	7.6	6
Toronto Central – South West	108	11.7	6	87	8.8	4	105	8.2	5
Toronto Central – West	67	11.0	7	55	9.1	5	47	6.6	5
Central – Central York Region	119	11.6	7	89	11.6	8	109	12.1	9
Central – North York East	-	-	-	-	-	-	-	-	-
Central – North York Central	55	9.8	6	80	9.9	6	47	6.9	5
Central – North York West	78	15.0	6.5	86	17.3	9	80	16.8	8
Central – South East York Region	95	11.9	8	87	11.7	7	49	12.5	8
Central – South Simcoe & Northern York Region	23	10.8	9	14	9.8	7.5	12	15.8	12.5
Central – South West York Region	-	-	-	-	-	-	-	-	-
Central East – Durham East	131	10.6	7	112	10.9	7	87	8.4	7
Central East – Durham North/Central	47	9.6	8	24	9.0	7	30	8.2	5

Sub-Local Health Integration Network <sup>1</sup>	2003/04			2006/07			2007/08		
	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)	No. of Patients <sup>2</sup>	Mean Length of Stay (Days)	Median Length of Stay (Days)
Central East – Durham West	31	5.9	4	45	12.1	6	21	10.9	7
Central East – Haliburton Highlands	**	3.7	4	**	12.0	12	**	4.0	2
Central East – Kawartha Lakes	38	12.7	9	61	10.0	7	54	10.3	7
Central East – Northumberland-Havelock	36	9.4	6	33	13.6	7	25	17.5	5
Central East – Peterborough City and County	89	14.8	7	121	16.8	9	94	12.6	8
Central East – Scarborough Agincourt-Rouge	48	10.6	8	20	3.6	3	27	6.9	5
Central East – Scarborough Cliffs-Scarborough Centre	210	12.3	8	142	11.5	6	111	14.5	8
South East – Addington North/Central Frontenac	-	-	-	-	-	-	-	-	-
South East – Belleville	57	11.2	5	41	7.9	5	50	8.3	6
South East – Brockville	64	10.8	7.5	39	9.9	7	43	20.6	7
South East – Central Hastings	-	-	-	-	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	40	20.6	9.5	24	12.3	6	30	10.3	9.5
South East – North Hastings	7	6.9	5	7	8.6	4	**	1.0	1
South East – Prince Edward County	24	7.1	7	8	19.8	5.5	17	18.1	4
South East – Quinte West	45	8.7	7	19	11.5	9	38	16.7	10.5
South East – Rideau Lakes	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	45	19.4	11	20	22.9	8.5	33	18.3	11
South East – South Frontenac	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	9	10.6	7	11	11.2	4	**	6.0	5
Champlain – North Lanark/North Grenville	26	16.7	10.5	19	16.6	6	25	19.6	9
Champlain – Ottawa	146	14.1	7	203	13.7	7	150	15.9	7
Champlain – Prescott-Russell	22	14.0	10	23	8.6	9	35	9.3	7
Champlain – Renfrew	58	8.4	6	84	17.8	5.5	77	17.7	6
Champlain – Stormont Dundas Glengarry	52	12.8	9	43	14.4	9	43	9.9	5
North Simcoe Muskoka – Central East	49	7.7	4	37	6.5	4	35	8.9	6
North Simcoe Muskoka – Central West	36	17.5	8	37	13.5	9	30	12.1	7
North Simcoe Muskoka – Muskoka	44	15.5	8	27	15.0	6	40	12.7	6.5
North Simcoe Muskoka – North East	114	18.1	10	52	11.2	9	55	13.2	9
North Simcoe Muskoka – North West	60	13.9	9	43	7.2	5	56	9.1	7
North East – Algoma	112	13.8	6	96	8.0	5	94	22.1	7.5
North East – Cochrane	65	17.2	8	60	25.3	7.5	48	10.8	4
North East – James and Hudson Bay Coasts	**	1.5	1.5	**	26.0	26	**	6.8	6.5
North East – Manitoulin-Sudbury	148	13.1	8	88	15.3	8	81	15.2	8
North East – Nipissing	70	16.9	6	65	11.0	7	58	13.5	7
North East – Parry Sound	12	8.2	9	15	8.3	7	11	20.6	9
North East – Timiskaming	53	15.3	9	26	20.9	9	23	20.5	7
North West – Dryden	11	12.9	4	10	39.3	2	9	26.7	3
North West – Kenora	16	7.3	5.5	10	7.7	5.5	15	18.2	12
North West – Kenora District (excl. Kenora & Dryden)	8	8.3	1.5	15	5.9	3	6	3.0	2
North West – Nipigon Red Rock Greenstone	**	3.3	1	**	47.0	33	**	4.0	4
North West – North Shore	**	9.3	13	**	2.0	2	**	170.6	7
North West – Rainy River District	17	8.0	4	12	9.6	3.5	16	9.0	8.5
North West – Thunder Bay City	89	14.4	8	91	12.5	10	59	12.2	6

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: Patients with ICD-10 code I64 (stroke type not specified/undetermined).

<sup>1</sup> Based on sub-LHIN planning area version 5.1.

<sup>2</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 2.6A Age- and sex-adjusted in-hospital complication rates for pneumonia among stroke/TIA patients, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>1</sup>	2003/04			2006/07			2007/08		
	n	N <sup>2</sup>	Adjusted Rate (%)	n	N <sup>2</sup>	Adjusted Rate (%)	n	N <sup>2</sup>	Adjusted Rate (%)
Erie St. Clair – Essex	12	669	1.81	**	585	0.51	6	596	1.01
Erie St. Clair – Chatham-Kent	**	225	-	**	191	1.03	-	202	-
Erie St. Clair – Lambton	-	207	-	-	174	-	-	166	-
South West – Central	**	239	-	-	231	-	-	240	-
South West – North	8	301	2.66	**	279	1.43	**	265	1.46
South West – South	17	904	1.86	13	857	1.53	15	826	1.82
Waterloo Wellington – Rural - South Grey & North Wellington	**	41	-	-	32	-	-	30	-
Waterloo Wellington – Rural Waterloo	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Wellington	-	54	-	-	36	-	**	62	2.98
Waterloo Wellington – Urban Guelph	**	131	-	**	148	0.66	**	130	0.77
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	6	511	1.19	**	493	0.82	**	476	0.21
Hamilton Niagara Haldimand Brant – Brant	-	6	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	**	209	-	**	195	1.55	**	208	0.96
Hamilton Niagara Haldimand Brant – Burlington	-	217	-	**	200	0.49	**	192	1.02
Hamilton Niagara Haldimand Brant – Fort Erie	-	43	-	-	37	-	-	27	-
Hamilton Niagara Haldimand Brant – Grimsby	-	48	-	-	29	-	-	45	-
Hamilton Niagara Haldimand Brant – Haldimand	-	63	-	-	53	-	**	48	2.07
Hamilton Niagara Haldimand Brant – Hamilton	17	863	1.95	15	875	1.73	16	858	1.90
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	-	145	-	**	168	1.19	-	149	-
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-	-	-	-	**	-
Hamilton Niagara Haldimand Brant – Norfolk	**	88	-	-	70	-	**	93	5.16
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	**	28	-	-	16	-	-	11	-
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	**	294	-	**	236	1.25	**	275	1.07
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	**	136	-	**	132	2.26	**	107	2.75
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-	-	-	-	-
Central West – Brampton	**	235	-	**	200	1.53	**	256	1.17
Central West – Caledon	-	-	-	-	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-	-	-	-	-
Central West – Orangeville	-	114	-	-	97	-	-	107	-
Central West – Rexdale (Toronto)	6	210	2.84	**	194	2.06	**	212	2.35
Central West – Woodbridge (Vaughan)	-	-	-	-	-	-	-	-	-
Mississauga Halton – Halton Hills	-	46	-	-	37	-	-	45	-
Mississauga Halton – Milton	-	34	-	-	54	-	**	40	2.55
Mississauga Halton – Northwest Mississauga	**	184	-	**	189	1.59	**	195	1.05
Mississauga Halton – Oakville	**	178	-	**	187	2.11	**	167	1.74
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	19	608	3.06	9	599	1.52	15	570	2.66
Toronto Central – East	**	254	-	**	176	0.57	-	181	-
Toronto Central – North East	-	-	-	-	-	-	-	-	-
Toronto Central – North Toronto	13	332	3.91	13	411	3.18	**	382	0.80
Toronto Central – North West	-	-	-	-	-	-	-	-	-
Toronto Central – South East	11	281	3.74	16	338	4.85	6	350	1.87
Toronto Central – South West	29	651	4.25	25	726	3.53	21	777	2.88
Toronto Central – West	**	236	-	**	186	1.60	**	217	0.45
Central – Central York Region	12	213	5.62	**	201	1.00	**	203	1.45
Central – North York East	-	-	-	-	-	-	-	-	-
Central – North York Central	6	265	2.34	8	356	2.21	**	359	0.81
Central – North York West	6	459	1.33	10	365	2.74	**	363	0.82
Central – South East York Region	6	365	1.66	12	476	2.52	**	435	0.91
Central – South Simcoe & Northern York Region	**	55	-	-	35	-	-	35	-
Central – South West York Region	-	-	-	-	-	-	-	-	-
Central East – Durham East	**	306	-	8	295	2.71	**	262	1.53
Central East – Durham North/Central	**	74	-	-	49	-	-	57	-
Central East – Durham West	-	114	-	-	128	-	**	111	1.83
Central East – Haliburton Highlands	-	8	-	**	6	16.98	-	6	-



Sub-Local Health Integration Network <sup>1</sup>	2003/04			2006/07			2007/08		
	n	N <sup>2</sup>	Adjusted Rate (%)	n	N <sup>2</sup>	Adjusted Rate (%)	n	N <sup>2</sup>	Adjusted Rate (%)
Central East – Kawartha Lakes	**	118	-	**	105	0.94	**	83	1.14
Central East – Northumberland-Havelock	**	118	-	**	105	0.93	**	91	1.05
Central East – Peterborough City and County	9	243	3.73	**	248	0.80	**	230	0.42
Central East – Scarborough Agincourt-Rouge	**	185	-	-	181	-	**	151	0.68
Central East – Scarborough Cliffs-Scarborough Centre	**	501	-	**	445	0.22	**	444	0.44
South East – Addington North/Central Frontenac	-	-	-	-	-	-	-	-	-
South East – Belleville	-	144	-	**	105	0.94	**	133	1.42
South East – Brockville	-	113	-	**	95	3.07	**	101	1.88
South East – Central Hastings	-	-	-	-	-	-	-	-	-
South East – Gananoque Leeds	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	10	285	3.46	**	286	0.35	**	314	0.97
South East – North Hastings	**	27	-	-	12	-	-	6	-
South East – Prince Edward County	-	41	-	**	17	11.19	-	38	-
South East – Quinte West	**	64	-	-	50	-	-	51	-
South East – Rideau Lakes	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	**	77	-	-	41	-	-	52	-
South East – South Frontenac	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	-	24	-	-	27	-	-	21	-
Champlain – North Lanark/North Grenville	**	63	-	**	38	5.08	**	50	3.74
Champlain – Ottawa	17	913	1.85	18	891	2.02	18	935	1.95
Champlain – Prescott-Russell	-	26	-	-	28	-	-	51	-
Champlain – Renfrew	-	158	-	6	222	2.67	**	194	1.04
Champlain – Stormont Dundas Glengarry	**	153	-	-	120	-	**	120	0.81
North Simcoe Muskoka – Central East	-	218	-	**	206	1.45	**	233	1.27
North Simcoe Muskoka – Central West	-	91	-	-	92	-	-	85	-
North Simcoe Muskoka – Muskoka	**	147	-	**	125	0.79	**	122	0.80
North Simcoe Muskoka – North East	**	168	-	**	98	1.00	-	98	-
North Simcoe Muskoka – North West	-	94	-	-	94	-	-	107	-
North East – Algoma	-	229	-	**	256	1.16	**	252	0.79
North East – Cochrane	**	130	-	**	146	1.37	-	120	-
North East – James and Hudson Bay Coasts	-	8	-	-	7	-	-	6	-
North East – Manitoulin-Sudbury	**	408	-	**	361	0.83	**	353	0.85
North East – Nipissing	**	202	-	**	168	1.19	-	182	-
North East – Parry Sound	**	29	-	**	54	1.88	-	31	-
North East – Timiskaming	**	80	-	**	66	3.03	**	59	1.71
North West – Dryden	-	18	-	-	12	-	-	15	-
North West – Kenora	-	30	-	-	38	-	-	48	-
North West – Kenora District (excl. Kenora & Dryden)	-	20	-	-	17	-	-	13	-
North West – Nipigon Red Rock Greenstone	-	11	-	-	8	-	-	6	-
North West – North Shore	-	7	-	-	6	-	-	8	-
North West – Rainy River District	-	39	-	-	38	-	**	32	3.17
North West – Thunder Bay City	**	283	-	**	371	0.28	7	342	2.07

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All stroke and TIA patients admitted to any acute care hospital in Ontario for stroke management.

<sup>1</sup> Based on sub-LHIN planning area version 5.1.

<sup>2</sup> Based on unique patients (i.e., does not include multiple patient-visits).

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 2.7A Discharge destination of stroke/transient ischemic attack patients<sup>2</sup> following an acute hospitalization, by Sub-Local Health Integration Network, in Ontario, 2003/04, 2006/07 and 2007/08**

Sub-Local Health Integration Network <sup>3</sup>	Year	Sample size n (%)	Acute care n (%)	Complex continuing care n (%)	Home with service n (%)	Home without service n (%)	Long-term care <sup>4</sup> n (%)	Palliative care n (%)	Rehabilitation n (%)	Other n (%)
Erie St. Clair – Essex	2003/04	592 (21.5)	13 (2.2)	22 (3.7)	93 (15.7)	203 (34.3)	51 (8.6)	**	193 (32.6)	12 (2.0)
	2006/07	521 (18.9)	13 (2.5)	23 (4.4)	96 (18.4)	199 (38.2)	38 (7.3)	**	142 (27.3)	9 (1.7)
	2007/08	508 (18.5)	13 (2.6)	21 (4.1)	106 (20.9)	175 (34.4)	38 (7.5)	**	137 (27.0)	17 (3.3)
Erie St. Clair – Chatham-Kent	2003/04	200 (22.1)	8 (4.0)	15 (7.5)	21 (10.5)	81 (40.5)	12 (6.0)	**	59 (29.5)	**
	2006/07	175 (19.3)	7 (4.0)	14 (8.0)	26 (14.9)	54 (30.9)	6 (3.4)	-	67 (38.3)	**
	2007/08	179 (19.8)	8 (4.5)	9 (5.0)	22 (12.3)	61 (34.1)	**	**	72 (40.2)	**
Erie St. Clair – Lambton	2003/04	176 (21.0)	7 (4.0)	7 (4.0)	11 (6.3)	92 (52.3)	21 (11.9)	-	38 (21.6)	-
	2006/07	141 (16.8)	**	9 (6.4)	8 (5.7)	64 (45.4)	6 (4.3)	-	51 (36.2)	**
	2007/08	136 (16.2)	**	10 (7.4)	6 (4.4)	51 (37.5)	6 (4.4)	-	56 (41.2)	**
South West – Central	2003/04	218 (20.8)	8 (3.7)	42 (19.3)	19 (8.7)	107 (49.1)	8 (3.7)	-	31 (14.2)	**
	2006/07	205 (19.5)	23 (11.2)	21 (10.2)	30 (14.6)	84 (41.0)	**	**	39 (19.0)	**
	2007/08	213 (20.3)	9 (4.2)	23 (10.8)	29 (13.6)	79 (37.1)	17 (8.0)	**	46 (21.6)	**
South West – North	2003/04	256 (20.6)	31 (12.1)	32 (12.5)	20 (7.8)	116 (45.3)	19 (7.4)	-	35 (13.7)	**
	2006/07	234 (18.8)	22 (9.4)	**	37 (15.8)	120 (51.3)	14 (6.0)	**	32 (13.7)	6 (2.6)
	2007/08	223 (18.0)	24 (10.8)	-	29 (13.0)	96 (43.0)	17 (7.6)	**	51 (22.9)	**
South West – South	2003/04	746 (20.8)	74 (9.9)	98 (13.1)	87 (11.7)	284 (38.1)	59 (7.9)	-	140 (18.8)	**
	2006/07	709 (19.8)	58 (8.2)	64 (9.0)	112 (15.8)	259 (36.5)	53 (7.5)	-	156 (22.0)	7 (1.0)
	2007/08	693 (19.3)	54 (7.8)	45 (6.5)	113 (16.3%)	263 (38.0)	44 (6.3)	-	169 (24.4)	**
Waterloo Wellington – Rural - South Grey & North Wellington	2003/04	36 (20.5)	**	-	6 (16.7)	12 (33.3)	12 (33.3)	-	**	-
	2006/07	31 (17.6)	**	-	7 (22.6)	14 (45.2)	**	-	**	-
	2007/08	26 (14.8)	-	-	**	19 (73.1)	**	-	**	-
Waterloo Wellington – Rural Waterloo	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Waterloo Wellington – Rural Wellington	2003/04	44 (19.2)	-	8 (18.2)	**	23 (52.3)	**	-	**	**
	2006/07	30 (13.1)	**	**	**	20 (66.7)	**	-	**	-
	2007/08	49 (21.4)	-	**	**	31 (63.3)	**	-	9 (18.4)	-
Waterloo Wellington – Urban Guelph	2003/04	117 (19.5)	**	**	24 (20.5)	37 (31.6)	10 (8.5)	-	38 (32.5)	-
	2006/07	126 (21.0)	**	**	32 (25.4)	44 (34.9)	12 (9.5)	-	35 (27.8)	**
	2007/08	114 (19.0)	**	**	22 (19.3)	40 (35.1)	17 (14.9)	**	29 (25.4)	-
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	2003/04	406 (19.7)	17 (4.2)	64 (15.8)	36 (8.9)	186 (45.8)	29 (7.1)	**	70 (17.2)	**
	2006/07	397 (19.3)	36 (9.1)	46 (11.6)	75 (18.9)	141 (35.5)	31 (7.8)	-	66 (16.6)	**
	2007/08	391 (19.0)	22 (5.6)	47 (12.0)	74 (18.9)	139 (35.5)	29 (7.4)	**	76 (19.4)	**
Hamilton Niagara Haldimand Brant – Brant	2003/04	6 (66.7)	-	**	-	**	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	2003/04	175 (19.9)	**	19 (10.9)	14 (8.0)	68 (38.9)	8 (4.6)	-	62 (35.4)	**
	2006/07	182 (20.7)	**	21 (11.5)	24 (13.2)	62 (34.1)	9 (4.9)	-	60 (33.0)	**
	2007/08	193 (21.9)	**	32 (16.6)	21 (10.9)	71 (36.8)	8 (4.1)	-	59 (30.6)	**
Hamilton Niagara Haldimand Brant – Burlington	2003/04	176 (19.9)	6 (3.4)	**	22 (12.5)	77 (43.8)	16 (9.1)	-	49 (27.8)	**
	2006/07	176 (19.9)	**	24 (13.6)	6 (3.4)	78 (44.3)	9 (5.1)	-	53 (30.1)	**
	2007/08	168 (19.0)	**	24 (14.3)	11 (6.5)	78 (46.4)	6 (3.6)	-	46 (27.4)	**
Hamilton Niagara Haldimand Brant – Fort Erie	2003/04	36 (22.2)	**	7 (19.4)	**	20 (55.6)	**	-	**	**
	2006/07	28 (17.3)	-	6 (21.4)	10 (35.7)	6 (21.4)	**	-	**	**
	2007/08	26 (16.0)	**	**	**	10 (38.5)	**	-	**	-
Hamilton Niagara Haldimand Brant – Grimsby	2003/04	43 (23.6)	-	6 (14.0)	7 (16.3)	23 (53.5)	**	-	6 (14.0)	-
	2006/07	28 (15.4)	-	**	**	17 (60.7)	**	-	**	-
	2007/08	42 (23.1)	**	7 (16.7)	7 (16.7)	23 (54.8)	**	-	**	**
Hamilton Niagara Haldimand Brant – Haldimand	2003/04	57 (23.6)	**	9 (15.8)	-	41 (71.9)	**	-	-	**
	2006/07	45 (18.6)	**	8 (17.8)	9 (20.0)	25 (55.6)	-	-	**	**
	2007/08	41 (16.9)	**	7 (17.1)	6 (14.6)	18 (43.9)	-	-	6 (14.6)	**
Hamilton Niagara Haldimand Brant – Hamilton	2003/04	728 (19.8)	41 (5.6)	22 (3.0)	58 (8.0)	309 (42.4)	98 (13.5)	**	194 (26.6)	**
	2006/07	751 (20.4)	91 (12.1)	15 (2.0)	90 (12.0)	272 (36.2)	78 (10.4)	-	194 (25.8)	11 (1.5)
	2007/08	739 (20.1)	56 (7.6)	14 (1.9)	109 (14.7)	320 (43.3)	65 (8.8)	**	162 (21.9)	12 (1.6)
Hamilton Niagara Haldimand Brant – Lincoln	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	2003/04	110 (18.0)	**	23 (20.9)	12 (10.9)	31 (28.2)	10 (9.1)	-	28 (25.5)	**
	2006/07	136 (22.2)	10 (7.4)	28 (20.6)	26 (19.1)	37 (27.2)	12 (8.8)	-	23 (16.9)	-
	2007/08	121 (19.8)	14 (11.6)	20 (16.5)	22 (18.2)	34 (28.1)	6 (5.0)	-	24 (19.8)	**

Sub-Local Health Integration Network <sup>3</sup>	Year	Sample size n (%)	Acute care n (%)	Complex continuing care n (%)	Home with service n (%)	Home without service n (%)	Long-term care <sup>4</sup> n (%)	Palliative care n (%)	Rehabilitation n (%)	Other n (%)
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	2003/04	6 (75.0)	-	**	**	**	1 (16.7)	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	**	-	-	**	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Norfolk	2003/04	72 (22.0)	**	**	10 (13.9)	39 (54.2)	10 (13.9)	**	**	**
	2006/07	54 (16.5)	**	**	14 (25.9)	20 (37.0)	12 (22.2)	-	6 (11.1)	-
	2007/08	69 (21.1)	**	**	27 (39.1)	29 (42.0)	6 (8.7)	-	**	-
Hamilton Niagara Haldimand Brant – Pelham	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	2003/04	24 (28.2)	-	7 (29.2)	**	10 (41.7)	**	-	**	**
	2006/07	14 (16.5)	-	**	**	8 (57.1)	-	-	**	-
	2007/08	10 (11.8)	**	**	**	**	**	-	**	-
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	2003/04	252 (22.0)	17 (6.7)	60 (23.8)	44 (17.5)	97 (38.5)	15 (6.0)	**	14 (5.6)	**
	2006/07	192 (16.8)	14 (7.3)	40 (20.8)	47 (24.5)	63 (32.8)	6 (3.1)	-	21 (10.9)	**
	2007/08	226 (19.7)	18 (8.0)	40 (17.7)	63 (27.9)	68 (30.1)	8 (3.5)	**	26 (11.5)	**
Hamilton Niagara Haldimand Brant – Thorold	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	2003/04	112 (20.3)	**	16 (14.3)	8 (7.1)	67 (59.8)	8 (7.1)	-	10 (8.9)	**
	2006/07	101 (18.3)	9 (8.9)	23 (22.8)	15 (14.9)	39 (38.6)	**	-	9 (8.9)	**
	2007/08	84 (15.2)	7 (8.3)	21 (25.0)	13 (15.5)	37 (44.0)	**	-	**	-
Hamilton Niagara Haldimand Brant – West Lincoln	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Central West – Brampton	2003/04	214 (21.0)	6 (2.8)	54 (25.2)	10 (4.7)	127 (59.3)	9 (4.2)	**	7 (3.3)	-
	2006/07	185 (18.2)	**	15 (8.1)	19 (10.3)	92 (49.7)	21 (11.4)	**	28 (15.1)	**
	2007/08	225 (22.1)	15 (6.7)	18 (8.0)	16 (7.1)	99 (44.0)	31 (13.8)	-	40 (17.8)	6 (2.7)
Central West – Caledon	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Central West – Dufferin County	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Central West – Malton (Mississauga)	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Central West – Orangeville	2003/04	98 (23.1)	**	28 (28.6)	19 (19.4)	38 (38.8)	7 (7.1)	-	-	**
	2006/07	82 (19.3)	6 (7.3)	20 (24.4)	17 (20.7)	26 (31.7)	10 (12.2)	**	-	**
	2007/08	97 (22.8)	6 (6.2)	24 (24.7)	13 (13.4)	41 (42.3)	7 (7.2)	-	**	-
Central West – Rexdale (Toronto)	2003/04	179 (19.2)	**	10 (5.6)	29 (16.2)	48 (26.8)	28 (15.6)	-	53 (29.6)	7 (3.9)
	2006/07	176 (18.9)	**	18 (10.2)	23 (13.1)	67 (38.1)	30 (17.0)	**	31 (17.6)	**
	2007/08	194 (20.8)	**	18 (9.3)	39 (20.1)	67 (34.5)	33 (17.0)	**	30 (15.5)	**
Central West – Woodbridge	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Mississauga Halton – Halton Hills	2003/04	39 (18.4)	**	6 (15.4)	**	20 (51.3)	**	-	**	-
	2006/07	35 (16.5)	-	13 (37.1)	**	13 (37.1)	-	-	**	-
	2007/08	43 (20.3)	**	12 (27.9)	7 (16.3)	18 (41.9)	-	-	**	-
Mississauga Halton – Milton	2003/04	27 (13.9)	**	**	-	17 (63.0)	**	-	**	-
	2006/07	52 (26.8)	**	**	5 (9.6)	37 (71.2)	-	-	**	-
	2007/08	37 (19.1)	**	**	**	23 (62.2)	-	-	8 (21.6)	-
Mississauga Halton – Northwest	2003/04	161 (20.3)	**	**	19 (11.8)	66 (41.0)	15 (9.3)	-	54 (33.5)	**
	2006/07	164 (20.7)	6 (3.7)	**	23 (14.0)	66 (40.2)	17 (10.4)	-	49 (29.9)	-
	2007/08	171 (21.6)	**	**	23 (13.5)	85 (49.7)	14 (8.2)	-	41 (24.0)	**
Mississauga Halton – Oakville	2003/04	161 (20.4)	**	13 (8.1)	18 (11.2)	72 (44.7)	**	-	48 (29.8)	**
	2006/07	153 (19.4)	**	9 (5.9)	19 (12.4)	71 (46.4)	7 (4.6)	-	39 (25.5)	**
	2007/08	139 (17.6)	**	10 (7.2)	20 (14.4)	63 (45.3)	-	**	41 (29.5)	**
Mississauga Halton – South Etobicoke (Toronto)	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-

Sub-Local Health Integration Network <sup>3</sup>	Year	Sample size n (%)	Acute care n (%)	Complex continuing care n (%)	Home with service n (%)	Home without service n (%)	Long-term care <sup>4</sup> n (%)	Palliative care n (%)	Rehabilitation n (%)	Other n (%)
Mississauga Halton – Southeast Mississauga	2003/04	518 (20.4)	36 (6.9)	30 (5.8)	17 (3.3)	232 (44.8)	27 (5.2)	-	172 (33.2)	**
	2006/07	502 (19.8)	20 (4.0)	26 (5.2)	26 (5.2)	212 (42.2)	25 (5.0)	**	188 (37.5)	**
	2007/08	483 (19.0)	24 (5.0)	26 (5.4)	29 (6.0)	186 (38.5)	31 (6.4)	-	183 (37.9)	**
Toronto Central – East	2003/04	210 (24.9)	6 (2.9)	10 (4.8)	33 (15.7)	85 (40.5)	33 (15.7)	-	39 (18.6)	**
	2006/07	144 (17.1)	**	10 (6.9)	24 (16.7)	41 (28.5)	25 (17.4)	-	37 (25.7)	**
	2007/08	148 (17.5)	8 (5.4)	12 (8.1)	15 (10.1)	42 (28.4)	20 (13.5)	-	50 (33.8)	**
Toronto Central – North East	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Toronto Central – North Toronto	2003/04	285 (16.2)	7 (2.5)	15 (5.3)	39 (13.7)	116 (40.7)	19 (6.7)	**	83 (29.1)	**
	2006/07	350 (20.0)	40 (11.4)	10 (2.9)	27 (7.7)	154 (44.0)	36 (10.3)	-	82 (23.4)	**
	2007/08	335 (19.1)	39 (11.6)	8 (2.4)	19 (5.7)	138 (41.2)	26 (7.8)	-	100 (29.9)	**
Toronto Central – North West	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Toronto Central – South East	2003/04	235 (17.7)	19 (8.1)	14 (6.0)	25 (10.6)	97 (41.3)	18 (7.7)	13 (5.5)	44 (18.7)	**
	2006/07	289 (21.8)	26 (9.0)	38 (13.1)	7 (2.4)	156 (54.0)	14 (4.8)	6 (2.1)	41 (14.2)	**
	2007/08	289 (21.8)	23 (8.0)	32 (11.1)	29 (10.0)	168 (58.1)	9 (3.1)	**	24 (8.3)	**
Toronto Central – South West	2003/04	572 (18.0)	16 (2.8)	30 (5.2)	86 (15.0)	269 (47.0)	46 (8.0)	**	118 (20.6)	**
	2006/07	624 (19.6)	29 (4.6)	25 (4.0)	104 (16.7)	245 (39.3)	49 (7.9)	**	160 (25.6)	10 (1.6)
	2007/08	687 (21.6)	40 (5.8)	38 (5.5)	112 (16.3)	306 (44.5)	38 (5.5)	-	146 (21.3)	7 (1.0)
Toronto Central – West	2003/04	186 (22.2)	**	18 (9.7)	15 (8.1)	80 (43.0)	35 (18.8)	-	34 (18.3)	**
	2006/07	151 (18.0)	**	14 (9.3)	24 (15.9)	46 (30.5)	23 (15.2)	**	38 (25.2)	**
	2007/08	161 (19.2)	**	19 (11.8)	24 (14.9)	55 (34.2)	32 (19.9)	-	26 (16.1)	**
Central – Central York Region	2003/04	168 (20.4)	**	22 (13.1)	19 (11.3)	57 (33.9)	12 (7.1)	-	50 (29.8)	**
	2006/07	160 (19.4)	**	19 (11.9)	20 (12.5)	75 (46.9)	9 (5.6)	-	34 (21.3)	-
	2007/08	170 (20.6)	**	15 (8.8)	20 (11.8)	77 (45.3)	7 (4.1)	-	46 (27.1)	**
Central – North York East	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Central – North York Central	2003/04	216 (15.5)	**	15 (6.9)	29 (13.4)	108 (50.0)	22 (10.2)	**	38 (17.6)	-
	2006/07	312 (22.4)	**	**	47 (15.1)	158 (50.6)	23 (7.4)	**	69 (22.1)	**
	2007/08	301 (21.6)	**	7 (2.3)	40 (13.3)	152 (50.5)	23 (7.6)	**	67 (22.3)	6 (2.0)
Central – North York West	2003/04	350 (21.6)	**	9 (2.6)	26 (7.4)	159 (45.4)	50 (14.3)	-	97 (27.7)	**
	2006/07	277 (17.1)	7 (2.5)	**	28 (10.1)	123 (44.4)	50 (18.1)	-	66 (23.8)	**
	2007/08	294 (18.2)	**	**	34 (11.6)	137 (46.6)	51 (17.3)	-	58 (19.7)	**
Central – South East York Region	2003/04	300 (17.0)	**	35 (11.7)	26 (8.7)	105 (35.0)	45 (15.0)	-	85 (28.3)	**
	2006/07	413 (23.5)	21 (5.1)	54 (13.1)	26 (6.3)	135 (32.7)	41 (9.9)	**	130 (31.5)	**
	2007/08	391 (22.2)	20 (5.1)	46 (11.8)	28 (7.2)	137 (35.0)	19 (4.9)	**	134 (34.3)	**
Central – South Simcoe and Northern York Region	2003/04	46 (25.4)	7 (15.2)	**	-	29 (63.0)	**	**	**	**
	2006/07	30 (16.6)	**	-	-	18 (60.0)	**	**	**	-
	2007/08	30 (16.6)	**	-	10 (33.3)	12 (40.0)	6 (20.0)	-	**	-
Central – South West York Region	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
Central East – Durham East	2003/04	261 (20.9)	8 (3.1)	22 (8.4)	50 (19.2)	91 (34.9)	14 (5.4)	-	73 (28.0)	**
	2006/07	252 (20.2)	**	22 (8.7)	38 (15.1)	88 (34.9)	24 (9.5)	-	74 (29.4)	**
	2007/08	212 (17.0)	9 (4.2)	15 (7.1)	34 (16.0)	76 (35.8)	13 (6.1)	**	64 (30.2)	-
Central East – Durham North/Central	2003/04	64 (24.8)	**	6 (9.4)	15 (23.4)	28 (43.8)	6 (9.4)	-	5 (7.8)	-
	2006/07	44 (17.1)	**	**	9 (20.5)	18 (40.9)	**	-	8 (18.2)	-
	2007/08	48 (18.6)	**	**	9 (18.8)	25 (52.1)	**	-	3 (6.3)	-
Central East – Durham West	2003/04	103 (19.7)	8 (7.8)	**	8 (7.8)	28 (27.2)	12 (11.7)	-	44 (42.7)	**
	2006/07	109 (20.8)	**	9 (8.3)	10 (9.2)	41 (37.6)	16 (14.7)	-	29 (26.6)	**
	2007/08	97 (18.5)	6 (6.2)	9 (9.3)	17 (17.5)	34 (35.1)	**	**	28 (28.9)	-
Central East – Haliburton Highlands	2003/04	6 (20.0)	**	-	-	**	-	-	-	-
	2006/07	4 (13.3)	-	-	-	**	-	-	-	-
	2007/08	**	-	-	**	**	-	-	**	-
Central East – Kawartha Lakes	2003/04	97 (22.4)	**	36 (37.1)	17 (17.5)	40 (41.2)	**	-	-	**
	2006/07	90 (20.8)	**	14 (15.6)	22 (24.4)	23 (25.6)	6 (6.7)	-	24 (26.7)	-
	2007/08	67 (15.5)	**	8 (11.9%)	11 (16.4)	9 (13.4)	12 (17.9)	-	25 (37.3)	**
Central East – Northumberland–Havelock	2003/04	95 (21.1)	**	21 (22.1)	10 (10.5)	44 (46.3)	**	-	8 (8.4)	7 (7.4)
	2006/07	88 (19.6)	**	**	29 (33.0)	22 (25.0)	7 (8.0)	-	23 (26.1)	-
	2007/08	73 (16.2)	6 (8.2)	**	17 (23.3)	21 (28.8)	**	-	21 (28.8)	-
Central East – Peterborough City and County	2003/04	202 (20.7)	6 (3.0)	9 (4.5)	43 (21.3)	87 (43.1)	16 (7.9)	-	40 (19.8)	**
	2006/07	212 (21.7)	27 (12.7)	11 (5.2)	44 (20.8)	57 (26.9)	11 (5.2)	**	60 (28.3)	**
	2007/08	181 (18.6)	13 (7.2)	**	39 (21.5)	57 (31.5)	10 (5.5)	-	58 (32.0)	**

Sub-Local Health Integration Network <sup>3</sup>	Year	Sample size n (%)	Acute care n (%)	Complex continuing care n (%)	Home with service n (%)	Home without service n (%)	Long-term care <sup>4</sup> n (%)	Palliative care n (%)	Rehabilitation n (%)	Other n (%)
Central East – Scarborough Agincourt-Rouge	2003/04	141 (19.1)	**	**	21 (14.9)	66 (46.8)	15 (10.6)	-	28 (19.9)	**
	2006/07	150 (20.3)	**	**	16 (10.7)	80 (53.3)	25 (16.7)	-	21 (14.0)	**
	2007/08	130 (17.6)	**	-	7 (5.4)	82 (63.1)	15 (11.5)	-	16 (12.3)	**
Central East – Scarborough Cliffs-Scarborough Centre	2003/04	413 (21.7)	6 (1.5)	82 (19.9)	26 (6.3)	163 (39.5)	45 (10.9)	**	80 (19.4)	9 (2.2)
	2006/07	375 (19.7)	**	39 (10.4)	35 (9.3)	141 (37.6)	51 (13.6)	-	103 (27.5)	**
	2007/08	382 (20.1)	7 (1.8)	46 (12.0)	23 (6.0)	158 (41.4)	51 (13.4)	-	96 (25.1)	**
South East – Addington North/Central Frontenac	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
South East – Belleville	2003/04	122 (22.4)	6 (4.9)	11 (9.0)	20 (16.4)	45 (36.9)	6 (4.9)	-	30 (24.6)	**
	2006/07	81 (14.9)	-	11 (13.6)	15 (18.5)	29 (35.8)	**	**	22 (27.2)	-
	2007/08	102 (18.7)	**	14 (13.7)	18 (17.6)	35 (34.3)	7 (6.9)	-	24 (23.5)	-
South East – Brockville	2003/04	91 (22.4)	**	-	16 (17.6)	46 (50.5)	**	-	22 (24.2)	**
	2006/07	76 (18.7)	**	**	9 (11.8)	34 (44.7)	8 (10.5)	-	18 (23.7)	-
	2007/08	85 (20.9)	**	**	6 (7.1)	44 (51.8)	11 (12.9)	-	18 (21.2)	**
South East – Central Hastings	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
South East – Gananoque Leeds	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
South East – Kingston and Islands	2003/04	216 (18.1)	20 (9.3)	**	12 (5.6)	134 (62.0)	10 (4.6)	-	35 (16.2)	**
	2006/07	235 (19.6)	18 (7.7)	14 (6.0)	30 (12.8)	146 (62.1)	9 (3.8)	-	16 (6.8)	**
	2007/08	263 (22)	33 (12.5)	21 (8.0)	42 (16.0)	129 (49.0)	8 (3.0)	-	26 (9.9)	**
South East – North Hastings	2003/04	13 (23.2)	**	**	**	**	-	-	**	**
	2006/07	11 (19.6)	**	**	6 (54.5)	**	-	**	**	-
	2007/08	**	-	**	**	-	-	-	**	**
South East – Prince Edward County	2003/04	40 (27.8)	-	7 (17.5)	**	16 (40.0)	**	**	8 (20.0)	**
	2006/07	15 (10.4)	**	-	**	**	**	-	**	-
	2007/08	29 (20.1)	**	-	6 (20.7)	11 (37.9)	6 (20.7)	-	**	-
South East – Quinte West	2003/04	50 (20.9)	**	9 (18.0)	13 (26.0)	18 (36.0)	**	-	8 (16.0)	-
	2006/07	39 (16.3)	**	7 (17.9)	6 (15.4)	11 (28.2)	**	-	7 (17.9)	-
	2007/08	40 (16.7)	**	**	6 (15.0)	7 (17.5)	**	**	12 (30.0)	**
South East – Rideau Lakes	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
South East – S/E Leeds Grenville	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	2003/04	66 (26.6)	**	7 (10.6)	7 (10.6)	40 (60.6)	8 (12.1)	-	-	-
	2006/07	30 (12.1)	**	**	**	16 (53.3)	**	-	-	**
	2007/08	43 (17.3)	**	**	15 (34.9)	19 (44.2)	**	-	-	-
South East – South Frontenac	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
South East – Stone Mills Loyalist	2003/04	-	-	-	-	-	-	-	-	-
	2006/07	-	-	-	-	-	-	-	-	-
	2007/08	-	-	-	-	-	-	-	-	-
South East – Tyendinaga Napanee	2003/04	21 (21.9)	**	**	**	10 (47.6)	**	-	**	-
	2006/07	21 (21.9)	**	-	**	11 (52.4)	**	-	**	-
	2007/08	20 (20.8)	**	-	**	11 (55.0)	**	**	**	-
Champlain – North Lanark/North Grenville	2003/04	56 (26.0)	**	6 (10.7)	**	38 (67.9)	**	-	**	**
	2006/07	33 (15.3)	**	**	**	20 (60.6)	**	-	-	-
	2007/08	39 (18.1)	**	**	**	22 (56.4)	**	-	**	**
Champlain – Ottawa	2003/04	742 (19.4)	54 (7.3)	14 (1.9)	88 (11.9)	332 (44.7)	85 (11.5)	6 (0.8)	156 (21.0)	7 (0.9)
	2006/07	752 (19.6)	86 (11.4)	20 (2.7)	71 (9.4)	282 (37.5)	59 (7.8)	**	216 (28.7)	14 (1.9)
	2007/08	780 (20.4)	97 (12.4)	28 (3.6)	94 (12.1)	263 (33.7)	66 (8.5)	6 (0.8)	222 (28.5)	**
Champlain – Prescott–Russell	2003/04	20 (12.5)	-	9 (45.0)	-	10 (50.0)	**	-	-	-
	2006/07	23 (14.4)	**	10 (43.5)	**	9 (39.1)	**	-	-	-
	2007/08	45 (28.1)	**	21 (46.7)	11 (24.4)	9 (20.0)	**	-	-	-
Champlain – Renfrew	2003/04	152 (16.5)	**	**	13 (8.6)	91 (59.9)	**	**	32 (21.1)	**
	2006/07	197 (21.4)	17 (8.6)	**	23 (11.7)	83 (42.1)	10 (5.1)	6 (3.0)	47 (23.9)	7 (3.6)
	2007/08	174 (18.9)	14 (8.0)	8 (4.6)	26 (14.9)	75 (43.1)	7 (4.0)	-	39 (22.4)	**
Champlain – Stormont Dundas Glengary	2003/04	130 (23.0)	**	8 (6.2)	12 (9.2)	55	9 (6.9)	-	37 (28.5)	**
	2006/07	98 (17.4)	12 (12.2)	9 (9.2)	18 (18.4)	19 (19.4)	**	**	35 (35.7)	-
	2007/08	98 (17.4)	**	6 (6.1)	17 (17.3)	25 (25.5)	13 (13.3)	**	34 (34.7)	-

Sub-Local Health Integration Network <sup>3</sup>	Year	Sample size n (%)	Acute care n (%)	Complex continuing care n (%)	Home with service n (%)	Home without service n (%)	Long-term care <sup>4</sup> n (%)	Palliative care n (%)	Rehabilitation n (%)	Other n (%)
North Simcoe Muskoka – Central East	2003/04	200 (20.2)	**	**	22 (11.0)	75 (37.5)	16 (8.0)	-	78 (39.0)	**
	2006/07	174 (17.6)	16 (9.2)	**	18 (10.3)	51 (29.3)	11 (6.3)	-	71 (40.8)	**
	2007/08	208 (21.1)	26 (12.5)	**	28 (13.5)	69 (33.2)	9 (4.3)	-	74 (35.6)	-
North Simcoe Muskoka – Central West	2003/04	81 (19.3)	**	**	11 (13.6)	50 (61.7)	10 (12.3)	-	6 (7.4)	-
	2006/07	81 (19.3)	**	**	14 (17.3)	36 (44.4)	8 (9.9)	**	17 (21.0)	-
	2007/08	77 (18.3)	**	**	12 (15.6)	38 (49.4)	6 (7.8)	-	16 (20.8)	**
North Simcoe Muskoka – Muskoka	2003/04	125 (21.6)	**	**	15 (12.0)	85 (68.0)	6 (4.8)	-	8 (6.4)	**
	2006/07	102 (17.6)	12 (11.8)	**	19 (18.6)	59 (57.8)	**	-	**	**
	2007/08	108 (18.7)	12 (11.1)	8 (7.4)	24 (22.2)	56 (51.9)	**	-	**	**
North Simcoe Muskoka – North East	2003/04	144 (26.1)	**	20 (13.9)	**	94 (65.3)	8 (5.6)	-	-	14 (9.7)
	2006/07	85 (15.4)	**	12 (14.1)	24 (28.2)	44 (51.8)	-	-	-	-
	2007/08	83 (15.1)	**	17 (20.5)	27 (32.5)	34 (41.0)	-	-	**	-
North Simcoe Muskoka – North West	2003/04	80 (18.1)	**	10 (12.5)	-	39 (48.8)	**	**	22 (27.5)	**
	2006/07	81 (18.3)	**	7 (8.6)	13 (16.0)	33 (40.7)	8 (9.9)	-	14 (17.3)	**
	2007/08	92 (20.8)	**	18 (19.6)	7 (7.6)	37 (40.2)	9 (9.8)	-	17 (18.5)	**
North East – Algoma	2003/04	202 (18.7)	13 (6.4)	30 (14.9%)	19 (9.4)	96 (47.5)	9 (4.5)	**	23 (11.4)	10 (5.0)
	2006/07	224 (20.8)	19 (8.5)	**	29 (12.9)	119 (53.1)	11 (4.9)	**	42 (18.8)	**
	2007/08	236 (21.9)	16 (6.8)	**	18 (7.6)	139 (58.9)	10 (4.2)	-	48 (20.3)	**
North East – Cochrane	2003/04	109 (19.1)	7 (6.4)	10 (9.2)	9 (8.3)	71 (65.1)	10 (9.2)	-	-	**
	2006/07	125 (21.9)	**	18 (14.4)	12 (9.6)	82 (65.6)	8 (6.4)	-	-	**
	2007/08	110 (19.3)	12 (10.9)	**	10 (9.1)	73 (66.4)	**	-	9 (8.2)	-
North East – James and Hudson Bay Coasts	2003/04	8 (32.0)	**	-	-	6 (75.0)	-	-	**	-
	2006/07	7 (28.0)	-	**	-	**	-	-	-	**
	2007/08	6 (24.0)	**	-	**	**	-	-	-	-
North East – Manitoulin-Sudbury	2003/04	356 (21.1)	29 (8.1)	**	50 (14.0)	192 (53.9)	27 (7.6)	-	53 (14.9)	**
	2006/07	317 (18.8)	24 (7.6)	10 (3.2)	58 (18.3)	112 (35.3)	32 (10.1)	-	79 (24.9)	**
	2007/08	295 (17.5)	16 (5.4)	6 (2.0)	71 (24.1)	126 (42.7)	18 (6.1)	-	55 (18.6)	**
North East – Nipissing	2003/04	166 (20.4)	8 (4.8)	**	14 (8.4)	105 (63.3)	18 (10.8)	-	15 (9.0)	**
	2006/07	139 (17.1)	9 (6.5)	9 (6.5)	12 (8.6)	75 (54.0)	14 (10.1)	**	18 (12.9)	**
	2007/08	151 (18.6)	7 (4.6)	**	16 (10.6)	90 (59.6)	13 (8.6)	**	18 (11.9)	**
North East – Parry Sound	2003/04	27 (16.8)	**	**	-	22 (81.5)	-	-	-	-
	2006/07	48 (29.8)	6 (12.5)	**	6 (12.5)	25 (52.1)	-	-	8 (16.7)	**
	2007/08	23 (14.3)	-	**	**	13 (56.5)	-	-	**	-
North East – Timiskaming	2003/04	67 (24.6)	12 (17.9)	**	**	37 (55.2)	9 (13.4)	-	-	**
	2006/07	57 (21.0)	9 (15.8)	-	9 (15.8)	35 (61.4)	**	-	**	-
	2007/08	52 (19.1)	**	-	8 (15.4)	36 (69.2)	**	-	**	-
North West – Dryden	2003/04	11 (19.3)	**	-	**	**	-	-	-	**
	2006/07	11 (19.3)	**	**	**	**	**	-	-	-
	2007/08	12 (21.1)	**	-	**	**	**	-	-	-
North West – Kenora	2003/04	27 (16.3)	**	11 (40.7)	**	10 (37.0)	-	-	-	-
	2006/07	33 (19.9)	**	**	15 (45.5)	7 (21.2)	**	**	-	**
	2007/08	41 (24.7)	**	**	11 (26.8)	16 (39.0)	**	-	**	**
North West – Kenora District (excl. Kenora & Dryden)	2003/04	16 (18.6)	**	-	**	10 (62.5)	-	-	-	-
	2006/07	16 (18.6)	9 (56.3)	**	**	**	**	-	-	-
	2007/08	13 (15.1)	7 (53.8)	-	**	**	-	**	-	-
North West – Nipigon Red Rock Greenstone	2003/04	11 (19.6)	**	**	**	6 (54.5)	-	-	-	-
	2006/07	8 (14.3)	**	-	-	**	**	-	**	-
	2007/08	6 (10.7)	**	-	-	**	-	-	-	-
North West – North Shore	2003/04	6 (15.8)	**	-	-	**	-	-	-	-
	2006/07	6 (15.8)	**	**	-	**	-	-	-	-
	2007/08	7 (18.4)	**	-	**	**	**	-	-	-
North West – Rainy River District	2003/04	28 (17.1)	**	8 (28.6)	**	14 (50.0)	**	**	-	-
	2006/07	30 (18.3)	**	**	**	16 (53.3)	**	-	-	-
	2007/08	22 (13.4)	**	7 (31.8)	**	9 (40.9)	-	-	-	-
North West – Thunder Bay City	2003/04	239 (16.2)	11 (4.6)	48 (20.1)	27 (11.3)	125 (52.3)	9 (3.8)	-	18 (7.5)	**
	2006/07	343 (23.3)	22 (6.4)	49 (14.3)	25 (7.3)	162 (47.2)	22 (6.4)	-	58 (16.9)	**
	2007/08	312 (21.2)	16 (5.1)	22 (7.1)	34 (10.9)	154 (49.4)	12 (3.8)	**	72 (23.1)	**

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients admitted to an acute care hospital in Ontario with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack.

<sup>1</sup> The sample of all discharge dispositions, except in-hospital deaths, is among patients discharged alive.

<sup>2</sup> Based on unique patients (i.e., does not include multiple patient-visits).

<sup>3</sup> Based on sub-LHIN planning area version 5.1.

<sup>4</sup> Data for long-term care nursing homes and long-term care homes for the aged are combined.

\*\* Cell value suppressed for reasons of privacy and confidentiality.

Notes: (1) Facility-based analysis (i.e., the location of the facility is used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 5.1A Age- and sex-adjusted readmission rates within 30 days following stroke or transient ischemic attack, by Sub-Local Health Integration Network, in Ontario, 2003/04 to 2006/07**

Sub-Local Health Integration Network <sup>1</sup>	Adjusted Readmission Rate (%)			
	2003/04	2004/05	2005/06	2006/07
Erie St. Clair – Essex	6.2	5.0	8.1	5.6
Erie St. Clair – Chatham-Kent	4.0	6.5	5.8	6.0
Erie St. Clair – Lambton	5.2	4.3	5.8	4.2
South West – Central	5.9	5.9	7.6	6.7
South West – North	7.3	7.4	8.2	8.3
South West – South	6.0	5.8	6.0	5.0
Waterloo Wellington – Rural - South Grey & North Wellington	11.4	4.8	7.7	5.9
Waterloo Wellington – Rural Waterloo	-	-	-	-
Waterloo Wellington – Rural Wellington	3.4	5.5	6.2	12.2
Waterloo Wellington – Urban Guelph	6.1	4.7	8.1	4.2
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	5.1	5.8	7.7	7.4
Hamilton Niagara Haldimand Brant – Brant	18.5	14.7	16.9	24.8
Hamilton Niagara Haldimand Brant – Brantford	4.1	3.1	5.9	7.2
Hamilton Niagara Haldimand Brant – Burlington	4.0	5.2	5.3	3.5
Hamilton Niagara Haldimand Brant – Fort Erie	8.4	-	6.8	10.8
Hamilton Niagara Haldimand Brant – Grimsby	11.6	9.4	1.7	3.3
Hamilton Niagara Haldimand Brant – Haldimand	6.2	14.6	8.8	9.4
Hamilton Niagara Haldimand Brant – Hamilton	6.5	5.2	6.4	5.4
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	3.7	9.9	9.7	5.1
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-
Hamilton Niagara Haldimand Brant – Norfolk	7.2	9.1	5.9	7.6
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	12.1	-	12.2	8.0
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	5.4	7.7	7.9	6.2
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	3.5	10.7	6.4	1.4
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-
Central West – Brampton	4.4	4.1	4.8	6.3
Central West – Caledon	-	-	-	-
Central West – Dufferin County	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-
Central West – Orangeville	10.1	5.4	7.0	10.0
Central West – Rexdale (Toronto)	7.5	7.8	4.7	4.4
Central West – Woodbridge (Vaughan)	-	-	-	-
Mississauga Halton – Halton Hills	4.6	2.7	6.2	3.2
Mississauga Halton – Milton	9.1	1.7	3.8	6.8
Mississauga Halton – Northwest Mississauga	3.9	4.8	4.3	4.6
Mississauga Halton – Oakville	8.2	4.8	7.8	6.4
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-
Mississauga Halton – Southeast Mississauga	7.0	7.9	7.1	6.9
Toronto Central – East	5.9	5.0	6.8	8.8
Toronto Central – North East	-	-	-	-
Toronto Central – North Toronto	3.9	7.2	6.8	7.4
Toronto Central – North West	-	-	-	-
Toronto Central – South East	6.1	5.9	7.4	6.9
Toronto Central – South West	3.4	6.3	5.8	5.3
Toronto Central – West	6.0	11.5	11.0	11.9
Central – Central York Region	6.9	4.5	7.3	4.4
Central – North York East	-	-	-	-
Central – North York Central	6.1	3.4	7.4	3.1
Central – North York West	4.4	4.9	3.8	4.4
Central – South East York Region	5.8	4.1	5.9	7.0
Central – South Simcoe & Northern York Region	18.9	5.9	7.2	4.7
Central – South West York Region	-	-	-	-
Central East – Durham East	6.3	5.2	5.3	7.9
Central East – Durham North/Central	9.7	5.5	7.6	7.9
Central East – Durham West	6.0	8.8	8.3	8.4
Central East – Haliburton Highlands	13.0	5.4	32.1	6.5
Central East – Kawartha Lakes	7.2	4.1	3.9	4.8
Central East – Northumberland-Havelock	6.1	9.8	6.8	9.0

Sub-Local Health Integration Network <sup>1</sup>	Adjusted Readmission Rate (%)			
	2003/04	2004/05	2005/06	2006/07
Central East – Peterborough City and County	8.5	7.6	8.3	13.7
Central East – Scarborough Agincourt-Rouge	3.9	3.7	4.7	5.6
Central East – Scarborough Cliffs-Scarborough Centre	7.1	6.0	5.5	8.0
South East – Addington North/Central Frontenac	-	-	-	-
South East – Belleville	7.4	9.4	5.0	4.3
South East – Brockville	9.1	8.5	8.1	3.9
South East – Central Hastings	-	-	-	-
South East – Gananogue Leeds	-	-	-	-
South East – Kingston and Islands	7.6	8.5	5.3	7.3
South East – North Hastings	10.0	26.2	21.6	6.8
South East – Prince Edward County	7.1	9.9	11.2	4.9
South East – Quinte West	8.1	11.4	2.3	5.6
South East – Rideau Lakes	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-
South East – Smiths Falls, Perth, Lanark	11.6	12.9	6.5	9.2
South East – South Frontenac	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-
South East – Tyendinaga Napanee	11.8	4.8	4.5	6.5
Champlain – North Lanark/North Grenville	8.7	13.4	13.1	15.6
Champlain – Ottawa	7.4	10.0	8.0	9.6
Champlain – Prescott-Russell	22.6	21.5	8.0	7.4
Champlain – Renfrew	7.1	9.8	5.6	5.8
Champlain – Stormont Dundas Glengarry	8.1	11.1	10.7	13.9
North Simcoe Muskoka – Central East	8.1	5.1	4.5	10.4
North Simcoe Muskoka – Central West	5.3	3.8	7.8	7.1
North Simcoe Muskoka – Muskoka	7.9	5.9	8.0	8.9
North Simcoe Muskoka – North East	6.8	6.4	6.5	7.9
North Simcoe Muskoka – North West	3.3	4.9	9.2	5.7
North East – Algoma	7.2	7.2	5.6	7.9
North East – Cochrane	5.4	6.9	5.6	9.8
North East – James and Hudson Bay Coasts	-	-	-	-
North East – Manitoulin-Sudbury	7.7	4.7	5.3	6.6
North East – Nipissing	5.4	4.8	6.9	5.5
North East – Parry Sound	8.7	5.6	13.2	5.9
North East – Timiskaming	8.3	6.1	2.7	9.1
North West – Dryden	8.8	19.4	15.1	23.4
North West – Kenora	10.2	3.6	3.2	5.9
North West – Kenora District (excl. Kenora & Dryden)	-	16.3	39.4	28.0
North West – Nipigon Red Rock Greenstone	30.4	11.8	33.1	10.7
North West – North Shore	-	17.6	18.2	12.5
North West – Rainy River District	3.7	7.1	5.9	3.2
North West – Thunder Bay City	3.0	2.7	4.0	4.9

Data sources: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), and National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04–2006/07.

Inclusion criteria: All patients readmitted to an emergency department or inpatient setting of an acute care hospital in Ontario with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack on both admissions within three months of the initial stroke event in each year.

Exclusion criteria: Patients with an elective admission or scheduled emergency department visits.

<sup>1</sup> Based on sub-LHIN planning area version 5.1.

Notes: (1) No washout periods were applied; e.g., if a patient's first hospitalization for stroke had a discharge date of March 31, 2005 (FY 2004/05), followed by another hospitalization for stroke/TIA on April 1, 2005 (FY 2005/06), the April 1<sup>st</sup> hospitalization would be considered the first hospitalization in 2005/06 and not a readmission related to the hospitalization in 2004/05.

(2) Facility-based analysis (i.e., the location of the facility was used to report regional performance).

(3) Cells in which there was no reported/available data are marked with a hyphen (-).



**Exhibit 5.2A Age- and sex-adjusted readmission rates within 90 days following stroke or transient ischemic attack, by Sub-Local Health Integration Network, in Ontario, 2003/04 to 2006/07**

Sub-Local Health Integration Network <sup>1</sup>	Adjusted Readmission Rate (%)			
	2003/04	2004/05	2005/06	2006/07
Erie St. Clair – Essex	9.0	7.5	10.2	8.2
Erie St. Clair – Chatham-Kent	6.9	9.1	8.5	8.9
Erie St. Clair – Lambton	8.2	7.0	8.1	5.3
South West – Central	6.7	7.4	9.2	9.6
South West – North	9.0	9.9	10.3	9.2
South West – South	7.5	7.5	8.5	6.5
Waterloo Wellington – Rural – South Grey & North Wellington	13.0	11.0	9.0	11.8
Waterloo Wellington – Rural Waterloo	-	-	-	-
Waterloo Wellington – Rural Wellington	5.1	8.2	7.6	14.6
Waterloo Wellington – Urban Guelph	8.4	7.0	9.9	6.2
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	7.1	7.4	10.0	8.9
Hamilton Niagara Haldimand Brant – Brant	18.3	14.6	15.6	25.2
Hamilton Niagara Haldimand Brant – Brantford	6.3	4.3	8.4	9.8
Hamilton Niagara Haldimand Brant – Burlington	7.1	7.7	6.8	4.3
Hamilton Niagara Haldimand Brant – Fort Erie	8.4	-	6.8	12.8
Hamilton Niagara Haldimand Brant – Grimsby	14.4	12.4	5.1	4.9
Hamilton Niagara Haldimand Brant – Haldimand	13.3	14.6	10.8	11.5
Hamilton Niagara Haldimand Brant – Hamilton	8.5	7.0	8.3	6.9
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	6.8	13.8	10.4	6.3
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-
Hamilton Niagara Haldimand Brant – Norfolk	8.8	11.6	7.7	9.4
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	13.9	2.5	16.0	7.8
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	7.5	9.4	11.2	6.7
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	4.1	12.6	10.6	2.1
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-
Central West – Brampton	7.3	6.2	6.9	9.5
Central West – Caledon	-	-	-	-
Central West – Dufferin County	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-
Central West – Orangeville	12.0	7.1	7.6	10.7
Central West – Rexdale (Toronto)	9.5	8.7	6.0	6.3
Central West – Woodbridge (Vaughan)	-	-	-	-
Mississauga Halton – Halton Hills	7.8	8.0	8.7	3.2
Mississauga Halton – Milton	18.1	3.4	5.8	6.9
Mississauga Halton – Northwest Mississauga	6.1	5.6	5.7	6.1
Mississauga Halton – Oakville	8.9	7.6	8.5	7.1
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-
Mississauga Halton – Southeast Mississauga	9.1	9.4	8.8	8.5
Toronto Central – East	7.2	5.6	8.9	9.5
Toronto Central – North East	-	-	-	-
Toronto Central – North Toronto	4.9	9.3	8.0	8.6
Toronto Central – North West	-	-	-	-
Toronto Central – South East	7.9	7.7	8.8	8.3
Toronto Central – South West	5.8	8.2	7.5	6.9
Toronto Central – West	7.5	12.5	13.1	14.1
Central – Central York Region	9.2	7.0	8.6	5.3
Central – North York East	-	-	-	-
Central – North York Central	7.7	5.7	8.3	3.5
Central – North York West	6.5	6.9	5.4	5.9
Central – South East York Region	8.2	6.2	7.3	8.8
Central – South Simcoe & Northern York Region	20.3	5.9	12.5	4.6
Central – South West York Region	-	-	-	-
Central East – Durham East	8.3	6.6	7.3	9.9
Central East – Durham North/Central	13.1	7.4	9.5	9.0
Central East – Durham West	6.6	12.5	9.7	12.4
Central East – Haliburton Highlands	15.2	8.0	32.7	9.7
Central East – Kawartha Lakes	7.1	4.9	5.8	8.8
Central East – Northumberland-Havelock	6.6	11.1	6.8	11.6

Sub-Local Health Integration Network <sup>1</sup>	Adjusted Readmission Rate (%)			
	2003/04	2004/05	2005/06	2006/07
Central East – Peterborough City and County	10.5	10.3	11.0	15.2
Central East – Scarborough Agincourt-Rouge	5.9	6.7	6.5	6.4
Central East – Scarborough Cliffs-Scarborough Centre	9.6	8.2	7.5	9.6
South East – Addington North/Central Frontenac	-	-	-	-
South East – Belleville	8.4	13.0	7.5	5.7
South East – Brockville	10.6	9.9	8.7	5.4
South East – Central Hastings	-	-	-	-
South East – Gananogue Leeds	-	-	-	-
South East – Kingston and Islands	8.6	11.2	6.6	9.5
South East – North Hastings	9.9	30.9	28.8	6.7
South East – Prince Edward County	9.7	11.2	11.0	8.1
South East – Quinte West	9.2	12.2	2.2	8.3
South East – Rideau Lakes	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-
South East – Smiths Falls, Perth, Lanark	14.6	15.7	7.3	11.0
South East – South Frontenac	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-
South East – Tyendinaga Napanee	11.6	7.0	4.5	8.6
Champlain – North Lanark/North Grenville	8.6	14.4	15.1	15.3
Champlain – Ottawa	8.7	12.1	9.8	11.5
Champlain – Prescott-Russell	26.1	21.2	9.4	11.0
Champlain – Renfrew	10.9	10.8	9.0	6.1
Champlain – Stormont, Dundas and Glengarry	9.2	14.5	13.8	17.1
North Simcoe Muskoka – Central East	10.3	6.9	5.8	12.4
North Simcoe Muskoka – Central West	7.6	8.3	10.8	8.9
North Simcoe Muskoka – Muskoka	10.9	9.0	10.7	11.8
North Simcoe Muskoka – North East	8.8	7.4	8.2	7.8
North Simcoe Muskoka – North West	7.1	8.0	11.5	5.7
North East – Algoma	10.3	9.2	8.3	10.1
North East – Cochrane	6.4	8.7	7.4	13.1
North East – James and Hudson Bay Coasts	-	-	-	14.2
North East – Manitoulin-Sudbury	9.5	6.5	5.8	8.8
North East – Nipissing	7.8	6.4	9.5	7.6
North East – Parry Sound	10.5	7.4	18.5	10.5
North East – Timiskaming	8.4	7.4	5.5	10.1
North West – Dryden	8.7	22.6	22.2	23.2
North West – Kenora	16.0	5.5	6.5	11.8
North West – Kenora District (excl. Kenora & Dryden)	-	16.7	44.3	27.9
North West – Nipigon Red Rock Greenstone	29.9	15.9	33.7	10.6
North West – North Shore	-	17.7	18.5	19.5
North West – Rainy River District	3.7	14.1	5.8	9.6
North West – Thunder Bay City	5.5	6.9	6.5	5.7

Data sources: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), and National Ambulatory Care Reporting System (CIHI-NACRS), 2003/04–2006/07.

Inclusion criteria: All patients readmitted to an emergency department or inpatient setting of an acute care hospital in Ontario with a diagnosis of stroke (ischemic or hemorrhagic) or TIA on both admissions within three months of initial stroke event starting in April 2003.

Exclusion criteria: Patients with an elective admission or scheduled emergency department visits.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

<sup>2</sup> Based on sub-LHIN planning area version 5.1.

Notes: (1) No washout periods were applied; e.g., if a patient's first hospitalization for stroke had a discharge date of March 31, 2005 (FY 2004/05), followed by another hospitalization for stroke/TIA on April 1, 2005 (FY 2005/06), the April 1<sup>st</sup> hospitalization would be considered the first hospitalization in 2005/06 and not a readmission related to the hospitalization in 2004/05.

(2) Facility-based analysis (i.e., the location of the facility was used to report regional performance).

(3) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 5.3A Age- and sex-adjusted in-hospital mortality rates following stroke or transient ischemic attack, by Sub-Local Health Integration Network, in Ontario, 2003/04 to 2007/08**

Sub-Local Health Integration Network <sup>1</sup>	Adjusted Mortality Rate <sup>2,3</sup> (%)				
	2003/04	2004/05	2005/06	2006/07	2007/08
Erie St. Clair – Essex	11.5	11.9	13.5	10.8	14.5
Erie St. Clair – Chatham-Kent	10.9	14.9	12.7	7.9	10.7
Erie St. Clair – Lambton	14.9	11.3	14.8	17.8	16.9
South West – Central	8.2	9.0	9.9	9.9	10.1
South West – North	14.4	10.3	11.7	15.5	15.1
South West – South	17.9	16.3	16.1	17.9	16.6
Waterloo Wellington – Rural – South Grey & North Wellington	11.8	12.3	4.3	3.3	12.7
Waterloo Wellington – Rural Waterloo	-	-	-	-	-
Waterloo Wellington – Rural Wellington	17.0	11.8	13.0	16.9	19.2
Waterloo Wellington – Urban Guelph	9.8	15.6	11.0	13.2	11.4
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	19.9	17.1	14.5	19.4	17.7
Hamilton Niagara Haldimand Brant – Brant	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	15.9	9.6	8.3	6.8	7.2
Hamilton Niagara Haldimand Brant – Burlington	18.5	11.4	13.1	11.8	11.2
Hamilton Niagara Haldimand Brant – Fort Erie	16.1	11.7	9.8	22.5	3.4
Hamilton Niagara Haldimand Brant – Grimsby	9.8	6.9	17.3	3.2	6.4
Hamilton Niagara Haldimand Brant – Haldimand	8.5	19.8	13.6	12.9	14.7
Hamilton Niagara Haldimand Brant – Hamilton	16.4	14.3	15.0	15.1	14.8
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	22.3	10.4	20.9	18.4	17.9
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Norfolk	17.1	16.1	22.4	20.8	22.6
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	14.8	7.5	17.7	11.7	7.4
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	13.3	15.6	18.6	16.8	16.7
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	16.4	10.7	11.1	21.8	19.5
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-	-
Central West – Brampton	10.0	9.3	8.6	8.2	12.5
Central West – Caledon	-	-	-	-	-
Central West – Dufferin County	-	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-	-
Central West – Orangeville	13.8	15.8	11.9	14.0	9.0
Central West – Rexdale (Toronto)	14.9	13.3	6.5	9.1	8.5
Central West – Woodbridge (Vaughan)	-	-	-	-	-
Mississauga Halton – Halton Hills	15.3	14.1	6.9	5.7	4.4
Mississauga Halton – Milton	20.3	14.6	10.1	4.0	7.8
Mississauga Halton – Northwest Mississauga	12.6	18.2	12.8	13.6	13.0
Mississauga Halton – Oakville	8.9	9.9	17.4	16.4	15.5
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-	-
Mississauga Halton – Southeast Mississauga	16.0	20.0	15.3	17.5	16.0
Toronto Central – East	16.9	15.6	10.1	17.3	17.9
Toronto Central – North East	-	-	-	-	-
Toronto Central – North Toronto	13.8	15.9	16.2	15.0	12.7
Toronto Central – North West	-	-	-	-	-
Toronto Central – South East	20.3	15.0	16.9	18.7	22.1
Toronto Central – South West	14.4	14.1	13.2	16.5	13.8
Toronto Central – West	20.3	20.3	17.9	17.3	23.4
Central – Central York Region	20.6	17.2	18.1	20.0	16.0
Central – North York East	-	-	-	-	-
Central – North York Central	16.6	15.5	14.4	11.5	14.7
Central – North York West	22.3	17.9	15.5	23.1	18.5
Central – South East York Region	16.8	16.9	14.8	13.3	10.1
Central – South Simcoe & Northern York Region	16.0	11.2	20.5	11.9	13.7
Central – South West York Region	-	-	-	-	-
Central East – Durham East	14.4	10.6	10.8	14.2	19.0
Central East – Durham North/Central	11.9	20.9	10.3	10.3	14.5
Central East – Durham West	10.1	14.9	16.4	14.7	13.0
Central East – Haliburton Highlands	22.3	9.6	41.2	30.6	15.3
Central East – Kawartha Lakes	16.5	21.1	15.6	13.2	17.0
Central East – Northumberland-Havelock	17.5	18.4	19.3	14.0	17.7

Sub-Local Health Integration Network <sup>1</sup>	Adjusted Mortality Rate <sup>2,3</sup> (%)				
	2003/04	2004/05	2005/06	2006/07	2007/08
Central East – Peterborough City and County	16.3	14.2	15.9	13.6	19.8
Central East – Scarborough Agincourt – Rouge	23.1	19.0	18.6	16.6	14.5
Central East – Scarborough Cliffs-Scarborough Centre	17.5	12.7	15.8	15.3	13.3
South East – Addington North/Central Frontenac	-	-	-	-	-
South East – Belleville	15.2	8.8	11.4	22.1	21.4
South East – Brockville	18.1	18.5	15.4	18.3	14.5
South East – Central Hastings	-	-	-	-	-
South East – Gananogue Leeds	-	-	-	-	-
South East – Kingston and Islands	26.2	19.8	24.1	19.4	17.2
South East – North Hastings	12.4	14.9	-	7.2	17.1
South East – Prince Edward County	2.3	5.3	17.5	10.7	20.8
South East – Quinte West	20.7	9.7	12.1	20.0	21.9
South East – Rideau Lakes	-	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-	-
South East – Smiths Falls, Perth, Lanark	12.5	19.7	23.4	22.4	14.7
South East – South Frontenac	-	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-	-
South East – Tyendinaga Napanee	10.8	8.4	19.0	19.6	4.1
Champlain – North Lanark/North Grenville	9.9	17.9	14.1	11.1	20.0
Champlain – Ottawa	19.4	18.4	14.9	15.9	16.9
Champlain – Prescott-Russell	20.7	10.0	14.3	16.5	11.0
Champlain – Renfrew	9.8	16.0	9.9	10.8	10.4
Champlain – Stormont, Dundas and Glengarry	14.8	16.9	10.7	17.7	16.0
North Simcoe Muskoka – Central East	8.3	10.5	9.1	15.2	10.6
North Simcoe Muskoka – Central West	11.0	18.0	8.6	11.7	9.3
North Simcoe Muskoka – Muskoka	14.0	12.1	13.4	17.1	11.4
North Simcoe Muskoka – North East	13.9	12.0	14.7	11.9	15.4
North Simcoe Muskoka – North West	14.6	7.9	4.9	13.3	12.9
North East – Algoma	12.1	14.5	16.1	12.5	6.4
North East – Cochrane	17.1	17.1	17.6	14.9	8.6
North East – James and Hudson Bay Coasts	-	-	-	-	-
North East – Manitoulin-Sudbury	13.6	11.4	13.2	12.5	17.5
North East – Nipissing	17.9	8.7	13.4	16.7	26.4
North East – Parry Sound	7.0	12.2	9.6	11.4	17.0
North East – Timiskaming	16.6	18.3	22.7	14.0	12.4
North West – Dryden	32.2	18.7	8.7	7.6	17.4
North West – Kenora	10.5	9.4	10.6	13.5	13.3
North West – Kenora District (excl. Kenora & Dryden)	23.1	-	5.1	5.1	-
North West – Nipigon Red Rock Greenstone	-	-	-	-	-
North West – North Shore	15.4	-	-	-	14.8
North West – Rainy River District	26.7	7.4	11.5	19.2	26.5
North West – Thunder Bay City	16.2	12.2	10.7	8.5	9.3

Data source: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), 2003/04, 2006/07 and 2007/08.

Inclusion criteria: All patients who died during admission to an emergency department or as inpatients in an acute care hospital with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack from April 2003.

<sup>1</sup> Based on unique patients (i.e., does not include multiple patient-visits).

<sup>2</sup> Based on sub-LHIN planning area version 5.1.

Notes: (1) Facility-based analysis (i.e., the location of the facility was used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

**Exhibit 5.4A Age- and sex-adjusted mortality rates at 30 days following stroke or transient ischemic attack, by Sub-Local Health Integration Network, in Ontario, 2003/04 to 2006/07**

Sub-Local Health Integration Network <sup>1</sup>	Adjusted Mortality Rate <sup>2,3</sup> (%)			
	2003/04	2004/05	2005/06	2006/07
Erie St. Clair – Essex	11.7	12.1	12.2	11.0
Erie St. Clair – Chatham-Kent	13.2	12.8	13.2	10.5
Erie St. Clair – Lambton	13.2	10.9	11.3	13.3
South West – Central	10.6	12.7	11.9	11.1
South West – North	13.9	11.9	10.6	12.6
South West – South	16.7	12.9	14.0	13.8
Waterloo Wellington – Rural - South Grey & North Wellington	10.3	11.3	7.5	-
Waterloo Wellington – Rural Waterloo	-	-	-	-
Waterloo Wellington – Rural Wellington	19.5	9.0	9.9	14.9
Waterloo Wellington – Urban Guelph	8.2	14.0	8.9	12.4
Waterloo Wellington – Urban Waterloo & Rural Waterloo South	14.6	13.4	13.9	14.9
Hamilton Niagara Haldimand Brant – Brant	-	-	-	-
Hamilton Niagara Haldimand Brant – Brantford	13.8	11.8	13.1	8.2
Hamilton Niagara Haldimand Brant – Burlington	14.9	11.0	13.4	12.4
Hamilton Niagara Haldimand Brant – Fort Erie	12.6	15.3	12.4	17.3
Hamilton Niagara Haldimand Brant – Grimsby	10.2	-	15.9	9.8
Hamilton Niagara Haldimand Brant – Haldimand	13.1	15.2	11.1	10.1
Hamilton Niagara Haldimand Brant – Hamilton	14.0	12.5	13.4	13.3
Hamilton Niagara Haldimand Brant – Lincoln	-	-	-	-
Hamilton Niagara Haldimand Brant – New Credit (Part) 40A	-	-	-	-
Hamilton Niagara Haldimand Brant – Niagara Falls	16.5	10.0	15.9	16.3
Hamilton Niagara Haldimand Brant – Niagara-on-the-Lake	-	-	-	-
Hamilton Niagara Haldimand Brant – Norfolk	11.4	11.2	14.9	10.6
Hamilton Niagara Haldimand Brant – Pelham	-	-	-	-
Hamilton Niagara Haldimand Brant – Port Colborne	-	-	-	6.3
Hamilton Niagara Haldimand Brant – Six Nations (Part) 40	-	-	-	-
Hamilton Niagara Haldimand Brant – St. Catharines	12.0	13.5	12.8	12.7
Hamilton Niagara Haldimand Brant – Thorold	-	-	-	-
Hamilton Niagara Haldimand Brant – Wainfleet	-	-	-	-
Hamilton Niagara Haldimand Brant – Welland	16.1	11.9	13.9	20.0
Hamilton Niagara Haldimand Brant – West Lincoln	-	-	-	-
Central West – Brampton	13.9	10.9	12.2	13.9
Central West – Caledon	-	-	-	-
Central West – Dufferin County	-	-	-	-
Central West – Malton (Mississauga)	-	-	-	-
Central West – Orangeville	16.3	16.7	11.5	12.6
Central West – Rexdale (Toronto)	13.4	14.8	11.9	12.8
Central West – Woodbridge (Vaughan)	-	-	-	-
Mississauga Halton – Halton Hills	13.3	11.8	12.1	-
Mississauga Halton – Milton	16.2	14.1	11.0	8.9
Mississauga Halton – Northwest Mississauga	11.8	11.3	8.9	13.2
Mississauga Halton – Oakville	9.6	6.8	13.1	12.5
Mississauga Halton – South Etobicoke (Toronto)	-	-	-	-
Mississauga Halton – Southeast Mississauga	12.0	16.4	11.9	14.8
Toronto Central – East	13.8	11.3	8.4	12.7
Toronto Central – North East	-	-	-	-
Toronto Central – North Toronto	9.2	11.6	13.6	12.9
Toronto Central – North West	-	-	-	-
Toronto Central – South East	18.4	18.2	17.6	16.2
Toronto Central – South West	12.5	13.3	13.2	14.1
Toronto Central – West	15.7	12.8	11.4	13.4
Central – Central York Region	13.3	10.5	14.9	13.3
Central – North York East	-	-	-	-
Central – North York Central	12.1	12.2	13.2	10.0
Central – North York West	16.3	11.9	12.9	16.5
Central – South East York Region	16.1	13.9	14.3	13.1
Central – South Simcoe & Northern York Region	17.7	16.6	15.6	13.1
Central – South West York Region	-	-	-	-
Central East – Durham East	11.5	11.0	9.5	11.6
Central East – Durham North/Central	10.9	12.5	13.9	8.6
Central East – Durham West	9.8	9.8	12.0	13.5
Central East – Haliburton Highlands	13.1	-	21.8	-
Central East – Kawartha Lakes	17.6	19.8	14.9	13.3
Central East – Northumberland-Havelock	15.8	14.0	11.9	10.8

Sub-Local Health Integration Network <sup>1</sup>	Adjusted Mortality Rate <sup>2,3</sup> (%)			
	2003/04	2004/05	2005/06	2006/07
Central East – Peterborough City and County	10.5	9.8	12.0	12.4
Central East – Scarborough Agincourt-Rouge	17.5	15.5	15.1	15.2
Central East – Scarborough Cliffs-Scarborough Centre	15.3	11.1	14.0	12.3
South East – Addington North/Central Frontenac	-	-	-	-
South East – Belleville	13.3	10.4	13.4	15.8
South East – Brockville	16.3	12.3	11.5	13.0
South East – Central Hastings	-	-	-	-
South East – Gananogue Leeds	-	-	-	-
South East – Kingston and Islands	18.7	13.2	17.4	16.1
South East – North Hastings	14.5	16.0	8.1	-
South East – Prince Edward County	-	-	12.1	-
South East – Quinte West	18.2	12.4	8.1	19.4
South East – Rideau Lakes	-	-	-	-
South East – S/E Leeds Grenville	-	-	-	-
South East – Smiths Falls, Perth, Lanark	9.2	8.2	16.5	12.4
South East – South Frontenac	-	-	-	-
South East – Stone Mills Loyalist	-	-	-	-
South East – Tyendinaga Napanee	-	-	-	12.8
Champlain – North Lanark/North Grenville	8.1	12.2	9.1	7.4
Champlain – Ottawa	14.0	13.2	11.2	11.7
Champlain – Prescott-Russell	17.1	16.2	11.1	12.6
Champlain – Renfrew	7.3	11.9	8.1	6.7
Champlain – Stormont Dundas Glengarry	11.5	12.2	10.2	10.6
North Simcoe Muskoka – Central East	10.1	9.3	13.3	12.6
North Simcoe Muskoka – Central West	8.7	16.7	9.1	10.8
North Simcoe Muskoka – Muskoka	10.0	12.5	12.3	14.9
North Simcoe Muskoka – North East	12.2	12.3	14.4	11.6
North Simcoe Muskoka – North West	8.6	5.3	9.1	12.3
North East – Algoma	12.1	14.9	14.4	13.5
North East – Cochrane	12.1	14.5	14.4	15.3
North East – James and Hudson Bay Coasts	-	-	-	-
North East – Manitoulin-Sudbury	12.6	10.8	12.1	11.2
North East – Nipissing	14.0	8.5	11.6	12.3
North East – Parry Sound	-	15.7	-	12.7
North East – Timiskaming	16.3	14.2	21.4	-
North West – Dryden	14.9	-	-	-
North West – Kenora	8.6	-	12.0	11.3
North West – Kenora District (excl. Kenora & Dryden)	-	-	-	-
North West – Nipigon Red Rock Greenstone	-	-	-	-
North West – North Shore	-	-	-	-
North West – Rainy River District	18.0	-	10.1	14.4
North West – Thunder Bay City	13.1	13.9	10.8	12.2

Data sources: Canadian Institute for Health Information, Discharge Abstract Database (CIHI-DAD), and National Ambulatory Care Reporting System (CIHI-NACRS); Ontario Ministry of Health and Long-Term Care, Registered Persons Database (RPDB); 2003/04–2006/07.

Inclusion criteria: All patients who died either in hospital or following discharge within 30 days of admission to an emergency department or inpatient setting of an acute care hospital with a diagnosis of stroke (ischemic or hemorrhagic) or transient ischemic attack, starting in April 2003.

<sup>1</sup> Based on sub-LHIN planning area version 5.1.

<sup>2</sup> All rates were statistically adjusted for age and sex; rates were not adjusted for stroke severity or comorbidities.

<sup>3</sup> Based on unique patients (i.e., does not include multiple patient-visits).

Notes: (1) Facility-based analysis (i.e., the location of the facility was used to report regional performance).

(2) Cells in which there was no reported/available data are marked with a hyphen (-).

