

Ontario Stroke Unit Definition

A best practice standard for stroke units in Ontario

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About Ontario Health - CorHealth Ontario

CorHealth Ontario is the Ontario government's principal advisor on cardiac, stroke and vascular services and drives improvement in access, quality, efficiency, and equity of care in these clinical domains for patients across Ontario. As of December 1, 2021, CorHealth Ontario is now part of Ontario Health, which is an agency of the Ministry of Health responsible for the administration of Ontario's healthcare system and integrating services and supports among various health provider or related agencies. Ontario Health – CorHealth Ontario's approach to supporting healthcare system transformation is grounded in evidence-informed best practice and includes working with key stakeholders to obtain understanding of care needs of both patients and providers, enable provincial planning, advise on resource allocation, use data and performance measurement to inform decision-making, and drive clinical quality and system improvements for optimized patient outcomes.

Stroke Unit Care

The clinical efficacy of stroke unit care on outcomes for patients with stroke has been well established in the literature.¹ When patients experience a stroke, having access to expert stroke care and resources (i.e., stroke unit care) significantly increases their chances of surviving the stroke, regaining function to return home, and decreases their chances of subsequent strokes, compared to general medical care.² "Stroke unit care is associated with reductions in the likelihood of death, death and disability, and death or the need for institutionalization by approximately 25%."^{3(p.99)}

A stroke unit provides patients with access to stroke expertise, which is critical to medically stabilize patients, identify stroke etiology, manage stroke related patient deficits such as aphasia and paralysis, reduce post stroke complications, support early mobilization, provide appropriate emotional support to patients and families, and facilitate access and flow to rehabilitative care. Cumulatively, this expert care contributes to better patient outcomes. Stroke unit care is the one intervention from which all stroke patients can benefit and has significant impact on short and long-term outcomes.^{4,5}

⁵ Fjaeroft H., Indredavik B., Lydersen S. Stroke Unit Care Combined with Early Supported Discharge: Long-Term Follow-Up of a Randomized Controlled Trial. Stroke. 2003; 34:2687–2691.



¹ Langhorne P., Ramachandra S. Organised inpatient (stroke unit) care for stroke: network meta-analysis. Cochrane Database of Systematic Reviews 2020, Issue 4. Art. No.: CD000197. DOI: 10.1002/14651858.CD000197.pub4.

² Stroke Unit Trialists' Collaboration. Organised inpatient (stroke unit) care for stroke. Cochrane Database Syst Rev. 2013 Sep 11;2013(9):CD000197. DOI: 10.1002/14651858.CD000197.pub3.

³ Heran, M., Lindsay, P., Gubitz, G., Yu, A., Ganesh, A., Lund, R., . . . Shamy, M. (2022). Canadian Stroke Best Practice Recommendations: Acute Stroke Management Module, 7th Edition Practice Guidelines Update, 2022. Heart and Stroke Canadian Stroke Best Practices website, 1-162

⁴ Collaborative systematic review of the randomised trials of organised inpatient (stroke unit) care after stroke. Stroke Unit Trialists' Collaboration. BMJ. 1997 Apr 19;314(7088):1151-9. PMID: 9146387; PMCID: PMC2126525.

Background

In 2021, Ontario Health-CorHealth Ontario, in collaboration with key stroke system stakeholders, set out to better understand and improve the state of stroke unit access and quality in Ontario. This initiative aims to address the longstanding poor stroke unit access rates and inequities that exist across Ontario's geography. In addition, this initiative aims to provide a renewed clarity to the definition of a stroke unit and the components to support consistent delivery and operationalization of this service. These components apply to acute stroke units and the acute portion of integrated⁶ stroke units (refer to Provincial Stroke Unit Definition and Components).

About this Document

The goal of this document is to support a consistent understanding of how stroke units should be operationalized in Ontario by describing the core components that stroke unit hospitals should have in place as a standard for stroke unit care.

This document was developed with and endorsed by an expert task group (Ontario Health – CorHealth Ontario Stroke Unit Task Group, see Appendix B for full list of membership) and is grounded in the Canadian Stroke Best Practice Recommendations. Extensive efforts were made to ensure task group deliberations and this document were based on a comprehensive information-gathering process and review of available data. The information provided within this document is not meant to override clinical decision-making.

Where appropriate, experiences and feedback from patients, families and caregivers with lived experience have been incorporated into the document. This information was obtained through a series of interviews (n= 24) conducted by Ontario Health-CorHealth Ontario.

This document has been reviewed by Accreditation Canada and is aligned with the Stroke Distinction Program requirements.

⁶ In other jurisdictions and the Canadian Stroke Best Practice Recommendations, the term "comprehensive stroke unit" may be used to describe an integrated stroke unit.



Provincial Stroke Unit Definition and Components

ONTARIO STROKE UNIT DEFINITION

A **stroke unit** is a specialized unit dedicated to the care of persons with stroke and staffed by an experienced, interprofessional stroke team. The unit has designated stroke unit beds that are co-located and in physical proximity to each other. These beds are used to provide care for stroke patients most of the time.

There are three types of stroke units – acute stroke units, integrated stroke units⁷ and inpatient stroke rehabilitation units. The Ontario Stroke Unit Components have been developed to address care within acute stroke units, and the acute portion of integrated stroke units. These 2 types of units are defined below:

- 1. **Acute Stroke Unit:** A stroke unit that provides only acute care to patients with stroke.
- 2. **Integrated Stroke Unit**⁷: A stroke unit that provides both acute and rehabilitation care to patients with stroke.

COMPONENTS

The components based on best practice evidence for a stroke unit are the following:

Component 1 – Minimum Volumes

A stroke unit should have a minimum volume of 125 (for acute stroke units) and 100 (for integrated stroke units) **admitted** patients with stroke per year. The minimum volume number is inclusive of the following stroke types: ischemic and hemorrhagic (intracerebral hemorrhage), and those patients with transient ischemic attack (TIA) deemed to require hospital admission (see Additional Guidance section below).

Rationale and Supporting Evidence: These minimum volumes support a critical mass of stroke patients that enables sustaining a unit, including the expertise and the dedicated complement of nursing and allied health staff, and optimized patient outcomes. The value of 125 for acute stroke units is supported in the literature.⁸

The value of 100 for integrated stroke units was determined through consensus with stroke system stakeholders through stroke bundled care planning work undertaken in 2019 by CorHealth Ontario. Patients on an integrated stroke unit (ISU) tend to have a longer length of

⁸ Hall, R.E., Fang, J., Hodwitz, K., Saposnik, G., Bayley, M.T. (2015). Does the volume of ischemic stroke admissions relate to clinical outcomes in the Ontario stroke system? Circ Cardiovasc Qual Outcomes, 8:S141-S147



⁷ In other jurisdictions and the Canadian Stroke Best Practice Recommendations, the term "comprehensive stroke unit" may be used to describe an integrated stroke unit.

stay, as they receive acute and rehabilitation care in the same unit. Therefore, ISUs may tend to have a lower volume of stroke patients compared to acute stroke units.

Additional Guidance: Triage and clinical decision-making should support the decision around admitting patients with TIA. Patients with TIA who are high risk for a stroke may need to be admitted to the stroke unit, however, evidence exists to support appropriate management of TIA through timely provision of secondary prevention clinic services in the outpatient setting.⁹

This minimum volume does not include those with subarachnoid haemorrhage; however, depending on how care is delivered in the stroke centre, those with subarachnoid hemorrhage may still benefit from stroke unit care if they are stable.

To support stroke patient volumes, stroke unit hospitals should strive to regularly re-evaluate their stroke unit resources (i.e., beds, human health resources) considering their volumes, and develop plans to address resource gaps.

Component 2 – Interprofessional Team Composition

A stroke unit should have a dedicated interprofessional team with *expertise* in stroke care (i.e., the majority of each team member's caseload is stroke). The following professionals should be part of the team: nurses, physiotherapists, occupational therapists, speech language pathologists, physicians with stroke expertise, social workers, and dietitians.

Rationale and Supporting Evidence: When staff are **dedicated** to the stroke unit (i.e., the majority of each team member's caseload is stroke) they develop the expertise and experience required to provide evidence-based stroke care. Having dedicated staff also promotes collaboration and communication across the care team. Care teams are better enabled to be attuned to patient goals and status changes, thus providing more coordinated, efficient, and effective patient care.

The Canadian Stroke Best Practices states "the core interdisciplinary team on the stroke unit should consist of healthcare professionals with stroke expertise including physicians, nurses, occupational therapists, physiotherapists, speech-language pathologists, social workers, dietitians, patients and family members" [Strong recommendation; High quality evidence]. ^{9(p.21)}

Additional Guidance: The stroke unit interprofessional team is not limited to the professions included within the component statement. There are many other team members valuable to supporting stroke patients and may be included as part of the dedicated team. These may include hospital pharmacists [Strong recommendation; Moderate quality of evidence], discharge planners or

⁹ Heran, M., Lindsay, P., Gubitz, G., Yu, A., Ganesh, A., Lund, R., . . . Shamy, M. (2022). Canadian Stroke Best Practice Recommendations: Acute Stroke Management, 7th Edition Practice Guidelines Update, 2022. Canadian Journal of Neurological Sciences, 1-31. doi:10.1017/cjn.2022.344



case managers, (neuro) psychologists, palliative care specialists, recreation and vocational therapists, spiritual care providers, peer supporters and stroke recovery group liaisons [Strong recommendation; Moderate quality of evidence].¹⁰ Advanced Practice Nurses, Physiotherapy Assistants, Occupational Therapy Assistants and Communicative Disorders Assistants may also be considered.

The expert advisory task group (i.e., the Ontario Health – CorHealth Ontario Stroke Unit Task Group-see Appendix B for full list of members), strongly recommends that patient to provider ratios for the acute stroke unit rehabilitation team members (i.e. physiotherapist, occupational therapist, speech language pathologist) does not exceed a ratio of eight patients per provider on average, due to the complexity and needs of this patient population.

Regarding nurse-to-patient ratios, it has been demonstrated that a higher nurse to patient ratio is associated with decreased mortality rates on stroke units.¹¹ Nurse to patient ratios should reflect the experience and skillset of the nurse, delivery model and individual patient factors. The SUTG strongly recommends that for day- time general acute stroke unit beds nursing ratios do not exceed 4 patients per nurse (i.e., Registered Nurse or Registered Practical Nurse¹²).

Additional Guidance from Persons with Lived Experience: The acute phase of care is an extremely emotional and vulnerable time for patients, families, and caregivers. Access to emotional and psychological support from the interprofessional team, including mental health professionals, spiritual workers and/or persons with lived experience is important in the acute and post-acute phases of care.

Family members and caregivers also play an active role in the care and recovery process and are strongly viewed by the patient as integral members of the care team. Involvement of family members/caregivers as members of the stroke care team should be considered as appropriate.

Component 3 – Interprofessional Team Availability

A stroke unit should be staffed with a stroke-specialized interprofessional team, which includes nursing, physicians, physiotherapists, occupational therapists, speech language pathologists, social workers, and dietitians, 7 days per week. A 7-day per week full-service team care model is considered best practice.¹³

¹³ Based on expert task group consensus (i.e., Ontario Health – CorHealth Ontario Stroke Unit Task Group, see Appendix B for full list of membership)



¹⁰ Heran, M., Lindsay, P., Gubitz, G., Yu, A., Ganesh, A., Lund, R., . . . Shamy, M. (2022). Canadian Stroke Best Practice Recommendations: Acute Stroke Management, 7th Edition Practice Guidelines Update, 2022. Canadian Journal of Neurological Sciences, 1-31. doi:10.1017/cjn.2022.344

¹¹ Bray, B. D., Ayis, S., Campbell, J., Cloud, G. C., James, M., Hoffman, A., Tyrrell, P. J., Wolfe, C. D., & Rudd, A. G. (2014). Associations between stroke mortality and weekend working by stroke specialist physicians and registered nurses: prospective multicentre cohort study. PLoS medicine, 11(8), e1001705. https://doi.org/10.1371/journal.pmed.1001705
¹² Decisions related to which nursing category (Registered Nurse [RN] or Registered Practical Nurse [RPN]) is best suited to match with client's needs should align with the College of Nurse of Ontario's 3 Factor Framework (i.e., RN and RPN Practice: The Client, the Nurse and the Environment)

Rationale and Supporting Evidence: Patients with stroke benefit from stroke rehabilitation (physiotherapy, occupational therapy, and speech language pathology) as soon as it is medically safe for them to participate and on a daily basis. Timely access to stroke specific care including assessment within 48 hours of admission and completion of AlphaFIM® on Day 3 are critical to the time-sensitive care of stroke patients as well as enabling planning for timely discharge to a specialized inpatient rehabilitation program, or other post-acute rehabilitation.¹⁴

Persons with Lived Experience described insufficient or inadequate access to the rehabilitation care team on weekends and weekdays as resulting in delayed assessment, interruptions in rehabilitation progress, suboptimal experiences, and feelings of frustration.

Additional Guidance: Where a stroke unit hospital's stroke-specialized interprofessional team is not able to meet the 7-day per week coverage best practice component, efforts should be made to facilitate building towards this component through incremental steps (i.e. first building towards 6-day per week coverage (e.g. half-day to full-day), then progressing to 7-day per week coverage). Having 7-day per week coverage of the stroke-specialized interprofessional team is critical to ensuring patients throughout the week are advancing their recovery, and patients with stroke who arrive on a Friday or over the weekend receive critical assessments and therapy in a timely fashion to prevent complications and improve their outcomes. Care of patients with stroke should not differ whether it is a weekday, weekend, or holiday.

Component 4 – Stroke Care Training and Expertise among Staff

Nursing and allied health staff who work on a stroke unit should:

- a) Receive appropriate orientation that supports development of core competencies and foundational stroke care knowledge
- b) Have the majority of their assignment be stroke care to help sustain competencies; and
- c) Regularly receive training/complete education about stroke care.

Rationale and Supporting Evidence: To provide appropriate and evidence-based best practice care to patients with stroke, the interprofessional healthcare team members should have stroke-specific knowledge, skills, and expertise. The Canadian Stroke Best Practices includes, as a core element of

¹⁴ Heran, M., Lindsay, P., Gubitz, G., Yu, A., Ganesh, A., Lund, R., . . . Shamy, M. (2022). Canadian Stroke Best Practice Recommendations: Acute Stroke Management, 7th Edition Practice Guidelines Update, 2022. Canadian Journal of Neurological Sciences, 1-31. doi:10.1017/cjn.2022.344



comprehensive stroke care, the need for ongoing professional development for all staff on stroke knowledge, including evidence-based best practices, skill building and orientation of learners.¹⁵

Additional Guidance: Where a stroke unit hospital's allied health staff is not able to fully support a patient caseload that is primarily stroke (e.g., Speech Language Pathologists cover other units), efforts should ideally be made to facilitate building and maintaining stroke expertise among those staff, and efforts should be made to secure dedicated allied health staff where possible. Stroke unit managers and leaders are encouraged to routinely monitor the professional development/ongoing education of stroke unit staff (nursing and allied health providers).¹⁶

Component 5 – Co-Location of Stroke Unit Beds

Stroke unit beds/patients should be co-located (i.e., situated in close physical proximity to one another). The interpretation of 'co-location' is dependent on the composition of the unit, and can be operationalized one of the following ways:

- 1. A cluster of beds that exist within a designated area of a hospital unit, such as neurology or general medicine. Patients with stroke are <u>not scattered</u> throughout the unit and efforts are made to group them together in one area of the unit.
- 2. A dedicated stroke unit that <u>primarily</u> admits patients with stroke. In this scenario, almost all the patients on the unit are patients with stroke.

Rationale and Supporting Evidence: Co-location of stroke patients within a defined area is aligned with national recommendations, ¹⁵ and associated with positive patient outcomes. ¹⁷ Co-locating patients within a specific area enables many positive impacts to patient care including enabling patient access to the expert stroke unit interprofessional team members, efficiency in clinical care, coordination of care, expertise building among dedicated staff and optimized nursing bed assignments.

Additional Guidance: For hospitals where stroke unit beds are within another unit, such as neurology or general medicine, identification of the specific bed numbers that are designated as stroke unit beds may assist with administrative requirements such as data entry to support measurement of stroke unit access and other potential performance metrics.

¹⁷ Langhorne P, Ramachandra S. Organised inpatient (stroke unit) care for stroke: network meta-analysis. Cochrane Database of Systematic Reviews 2020, Issue 4. Art. No.: CD000197. DOI: 10.1002/14651858.CD000197.pub4.



¹⁵ Heran, M., Lindsay, P., Gubitz, G., Yu, A., Ganesh, A., Lund, R., . . . Shamy, M. (2022). Canadian Stroke Best Practice Recommendations: Acute Stroke Management, 7th Edition Practice Guidelines Update, 2022. Canadian Journal of Neurological Sciences, 1-31. doi:10.1017/cjn.2022.344

¹⁶ The Stroke Core Competency Framework, developed by the Regional Stroke Networks, provides healthcare providers with an accessible, comprehensive self-assessment tool to help identify specific learning objectives to support best practices in stroke care

Appendix A: shows high-level schematics illustrating stroke unit bed placements that do and do not meet the co-location component.

Component 6 – Prioritization of Stroke Unit Beds for Stroke Care

Stroke unit hospitals should have mechanisms in place to prioritize stroke unit beds for the care of patients with stroke (admitted with stroke or in-hospital stroke), to enable access to a stroke unit bed as soon as possible and ideally within 24 hours of stroke unit hospital arrival or when that patient is appropriately ready for the stroke unit level of care (e.g., after a stay in critical care before transfer to the stroke unit, or on another unit for telemetry monitoring when not available on the stroke unit).

Rationale and Supporting Evidence: The Canadian Stroke Best Practices recommends that patients admitted to hospital with an acute stroke or TIA should be treated on a stroke unit as soon as possible (within hours), ¹⁸ and ideally within 24 hours of hospital arrival.

Patients with stroke who remain in the ED or another non-stroke specialized unit, waiting for a stroke unit bed, miss out on the benefit of best practice stroke care during the critical immediate hours and days following an acute stroke event, specifically the first 72 hours. It is also important for the patient with stroke to spend the majority of their non-critical, active, acute length of stay on the stroke unit.

Additional Guidance: Given the current realities of the healthcare system, a hospital's stroke unit beds that are unoccupied will likely be filled by non-stroke patients. However, when a patient (either new or already in hospital) is experiencing an acute stroke, a collective effort across multiple hospital teams is needed to ensure stroke unit beds are prioritized for patients with stroke, in a timely fashion. Examples include but are not limited to optimized bed management, patient flow mechanisms, effective protocols to identify stroke patients requiring stroke unit care (e.g., from Emergency Department or within other units), and keeping a stroke unit bed available going into evenings or weekends.

Component 7 – Pathways to Transition out of Acute Stroke Care

To support an integrated system of stroke care and stroke unit bed flow, stroke units should have established partnerships with other health service providers, ongoing communication, and procedures in place for repatriation as sending and/or receiving facilities. This enables timely access to the stroke unit and to stroke rehabilitation facilities/local services, community-based stroke rehabilitation, and community support services for safe transitions out of acute care to the next level of care.

¹⁸ Heran, M., Lindsay, P., Gubitz, G., Yu, A., Ganesh, A., Lund, R., . . . Shamy, M. (2022). Canadian Stroke Best Practice Recommendations: Acute Stroke Management, 7th Edition Practice Guidelines Update, 2022. Canadian Journal of Neurological Sciences, 1-31. doi:10.1017/cjn.2022.344



Rationale and Supporting Evidence: The Canadian Stroke Best Practices recommends that processes are in place to support timely, safe, and seamless transitions of care, and communication between the interprofessional stroke team and the healthcare providers at the next stage of care [Strong recommendation; Moderate quality of evidence]. ¹⁹ Timely and safe patient transitions out of acute stroke unit beds enables availability of stroke unit beds for incoming patients with stroke. This includes timely and appropriate repatriation processes. There are also benefits to the patient being transferred out of the acute setting in a safe and timely manner.

Additional Guidance: The quality of communication between healthcare teams that is required to ensure a safe and comprehensive patient transition out of acute care to the next level of care cannot be overlooked.

Additional Guidance from Persons with Lived Experience: Patients and families should be involved in transition planning and discussions. Providing appropriate information about the transition including anticipated timelines to enable preparation (e.g., discharge in 1 week), and ensuring services are set up **prior** to discharge is particularly important.

Component 8 – Performance Measurement, Monitoring and Reporting

Hospitals with stroke units and their relevant personnel should participate in an established process for collection and analysis of process and outcome data (locally, regionally, and provincially) and have mechanisms to support ongoing quality improvement to address current gaps in service delivery.

Rationale: Collection and analysis of process and outcome data provides insight into stroke unit performance and areas requiring improvement. Processes to support review of data by various stakeholders can support and provide the impetus for driving initiatives to improve patient care. Collection of data also enables reporting at the provincial level and subsequent planning and decision making at regional and local levels.

Component 9 – On-Site Availability of Diagnostic Resources

Stroke unit hospitals should have the minimum diagnostic resources available on site, including 24-hour, 7-days a week availability of computed tomography (CT) scanner (i.e., 3rd generation or higher helical scanner) with programming for CT angiography (CTA) (multiphase or dynamic CTA), as well as prompt access to carotid Doppler (carotid and vertebral), and cardiac investigations such as Holter monitoring, and echocardiogram. Availability of these diagnostics, including timely reporting of results, is needed to support

¹⁹ Heran, M., Lindsay, P., Gubitz, G., Yu, A., Ganesh, A., Lund, R., . . . Shamy, M. (2022). Canadian Stroke Best Practice Recommendations: Acute Stroke Management, 7th Edition Practice Guidelines Update, 2022. Canadian Journal of Neurological Sciences, 1-31. doi:10.1017/cjn.2022.344.



patient monitoring, guide evidence-based clinical decision-making, and perform appropriate etiological investigations.

Rationale and Supporting Evidence: Canadian Stroke Best Practices recommends that access to 24/7 imaging is a core element of comprehensive stroke and neurovascular care.²⁰

Component 10 – Patient, Family and Caregiver Education

Stroke units should provide patients, families, and caregivers with education and resources, both formal and informal, that addresses their needs, including but not limited to education about their stroke, prognosis, expected recovery, and recovery care needs and goals.

Rationale and Supporting Evidence: Canadian Stroke Best Practices recommends that patients and families receive education that is formal, coordinated, addresses learning needs, and responds to patient and family readiness.²⁰

Additional Guidance: Education regarding stroke signs and symptoms should be provided prior to transition from acute care. Consider education regarding palliative and end of life care, or advance care planning as appropriate.

Persons with Lived Experience described the acute phase of care to be an extremely overwhelming and emotional time. The need for information in the acute phase was described as critical to coping with the unknown and regaining a sense of control; in particular, information about the diagnosis and what to expect next (e.g., next phase of care). This information should be customized to the individual (e.g., age appropriate), and should be provided in such a way that accommodates for physical, communicative, and cognitive challenges related to the stroke.

²⁰ Heran, M., Lindsay, P., Gubitz, G., Yu, A., Ganesh, A., Lund, R., . . . Shamy, M. (2022). Canadian Stroke Best Practice Recommendations: Acute Stroke Management, 7th Edition Practice Guidelines Update, 2022. Canadian Journal of Neurological Sciences, 1-31. doi:10.1017/cjn.2022.344.



Appendix A: Placement of Beds on the Stroke Unit

To illustrate the concept of co-locating patients, the three schematics of stroke unit layouts (below) depict arrangements of designated beds for stroke patients. These simplified schematics serve as examples ONLY and do not represent any real stroke unit in Ontario. Figures 1 and 2 represent configurations that meet the component, and Figure 3 is an example of a configuration that does not.

Note: These schematics should be interpreted in relation to the acute portion of a patient's stay on the stroke unit. Integrated Stroke Units may have the ability to flip the bed designation and/or move patients to an adjacent rehabilitation area.

Figure 1: Clustered arrangement of stroke unit beds (light blue) located in one area of a hospital ward

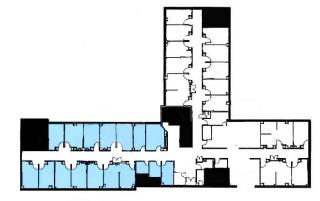


Figure 2: Stroke unit with majority of beds (light blue) designated for stroke care. Note the clustering of light blue beds.

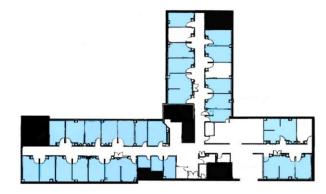
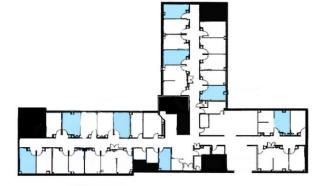


Figure 3: Beds designated for stroke care (light blue) are scattered throughout the ward. This is <u>not</u> ideal and does <u>not</u> align to the co-location component.





Appendix B: Ontario Health-CorHealth Ontario Stroke Unit Task Group

Members	
Name:	Position & Organization:
Dr. Albert Jin (Chair)	Stroke Neurologist, Kingston Health Sciences Centre; Regional Medical Director, South Eastern Ontario Stroke Network
Susan Bursey	Regional Director Northeastern Ontario Stroke Network
Dr. Leanne Casaubon	Stroke Neurologist, University Health Network; Regional Medical Director, Toronto West Stroke Network; Provincial Physician Lead, Stroke, Ontario Health-CorHealth Ontario
Esme French	Rehabilitation Coordinator, Northwestern Ontario Regional Stroke Network
Paula Gilmore	Director, Rehabilitative and Palliative Care, Bluewater Health
Esha Homenauth	Decision Scientist, Ontario Health- CorHealth Ontario
Dr. Moira Kapral	IC/ES Scientist; Internist, University Health Network
Alexandra Keludjian	Strategist, Health System Policy, Planning and Performance, Ontario Health-CorHealth Ontario
Michelle Klein	Senior Strategist, Clinical Programs, Ontario Health-CorHealth Ontario
Vanessa Ma	Specialist, Analytics and Reporting, Ontario Health- CorHealth Ontario
Jo-anne Marr	CEO, Markham Stouffville Hospital
Cally Martin	Regional Director, Stroke Network of Southeastern Ontario
Lisa McDonnell	Regional Director, Champlain Regional Stroke Network
Don McGuinness	Lead, Decision Support, Ontario Health East
Rhonda McNicoll-Whiteman	Stroke Best Practice Clinical Nurse Specialist, Hamilton Health Science; Acute Stroke Best Practice Coordinator, Central South Regional Stroke Network
Nicole Pageau	Regional Director, West GTA Stroke Network
Anar Pardhan	Senior Strategist, Data Collection, Analytics and Reporting, Ontario Health- CorHealth Ontario
Fatima Quraishi	Regional Director, South East Toronto Stroke Network
Shelley Sharp	Senior Strategist, Clinical Programs, Ontario Health- CorHealth Ontario
Donelda Sooley	Regional Director, Central East Stroke Network
Tammy Tebbutt	District Stroke Coordinator, Central South Stroke Network
Deanna Wu	Director, Analytics and Reporting, Ontario Health- CorHealth Ontario
Kathryn Yearwood	Clinical Specialist, Ontario Health- CorHealth Ontario

