



Ontario Specialized Acute Stroke Services Framework

June 2025

Table of Contents

Ontario Specialized Acute Stroke Services Framework	1
Table of Contents	2
Introduction	3
Background	3
About this Document	3
Section A: Expanding Services	4
Service Provision Level	4
District and Regional Stroke Centres	4
Figure 1: Service Provision/Designation Levels for Specialized Acute Stroke Services	5
Section B: Specialized Acute Stroke Services	6
Non-Stroke Service Hospital	6
Thrombolysis:	6
Stroke Unit	8
Stroke Prevention Clinic	8
Neurosurgery	8
Endovascular Thrombectomy	9
Section C: District, Enhanced District and Regional Stroke Centres	10
District Stroke Centre (DSC)	10
Enhanced District Stroke Centre (EDSC)	10
Regional Stroke Centre (RSC)	11
Appendix A: Review and Approval for Stroke Service Expansion Requests	12

Introduction

Background

The Ontario Stroke Strategy was first announced by the Ministry of Health and Long-Term Care (MOHLTC) in the early 2000s shortly after Health Canada's approval of Alteplase for the treatment of acute ischemic stroke and the successful demonstration that regionally organized systems of care enable access to best practices and improved outcomes for persons with stroke/TIA. This announcement resulted in the establishment of regional systems of stroke care in Ontario.

The Ontario Stroke Strategy outlined a comprehensive plan for establishing integrated cross-continuum systems of care within 11 geographic regions across the province. Depending on geographical need, these regional systems were organized around Regional, Enhanced District, and District Stroke Centres capable of providing 24/7 access to hyperacute and acute stroke care and linkages to other components of the care continuum. These hospitals received additional resources to support service expansion and new system leadership/coordination accountabilities. By 2005/06 Ontario's hospital-based stroke system infrastructure consisted of:

- 9 Regional Stroke Centres
- 3 Enhanced District Stroke Centres
- 15 District Stroke Centres, and
- 24 Secondary Stroke Prevention Clinics

Nearly two decades after the launch of the Ontario Stroke Strategy, the regional stroke systems of care have evolved and expanded to accommodate changing demographics, treatment options, and broader health system reforms. Today, the delivery of hyperacute and acute care exceeds the original designated sites and includes additional select community hospitals across the province.

About this Document

The Ontario Health Specialized Acute Stroke Services Framework provides a transparent classification system for specialized acute stroke services in Ontario. The framework aims to provide a high-level understanding of the different types of specialized stroke services to support hospitals that may be considering service expansion.

Within the framework, hospitals are classified based on the type of specialized acute stroke clinical services provided, as well as the role the hospital assumes with respect to system leadership, development, implementation, coordination, and integration (i.e., Service Provision Level and System Administration Levels, respectively).

Section A: Expanding Services

Decisions to expand current services are multifaceted and require a regional and/or provincial system planning approach that takes into consideration population need, resource availability, sustainability of current specialized stroke services within the system, and timely access to best practice care. Decisions to pursue expansion should not be made by the organization in isolation of system partners and context.

In addition to feasibility and need, decisions to expand services should take into consideration the extent of services currently provided at the hospital. To ensure continuity between service levels the criteria of the previous level must be met before progress to the next level is considered. [Appendix A](#) provides a high-level overview of the process hospitals are required to follow when seeking to expand existing services from one level to the next level. Each progression beyond current services will require a fulsome business case proposal to support the service expansion, which includes assessment of impact to existing specialized acute stroke service providers.

Service Provision Level

Each specialized acute stroke service provider is expected to coordinate and deliver a comprehensive range of stroke services to persons with stroke/TIA either on-site or through coordination with other stroke service providers. In the framework, service provision levels are distinguished based on breadth and complexity of acute stroke services provided on-site ([Figure 1: Service Provision Levels for Specialized Acute Stroke Centres](#)). A description of each type of acute stroke service and the associated service expectations can be found in [Section B: Specialized Acute Stroke Services](#).

District and Regional Stroke Centres

In addition to providing specialized acute stroke clinical services, select hospitals may assume additional system leadership, development, implementation, coordination, and integration accountabilities. In these situations, the specialized acute stroke centres can be further classified into categories: District Stroke Centre, Enhanced District Stroke Centre- Clinical, Enhanced District Stroke Centre- System, and Regional Stroke Centres. These centres receive dedicated infrastructure (e.g., health human resources) funding to enable evidence-based stroke care and work with other Health Service Providers within the region and/or district as part of their additional system administration accountabilities.

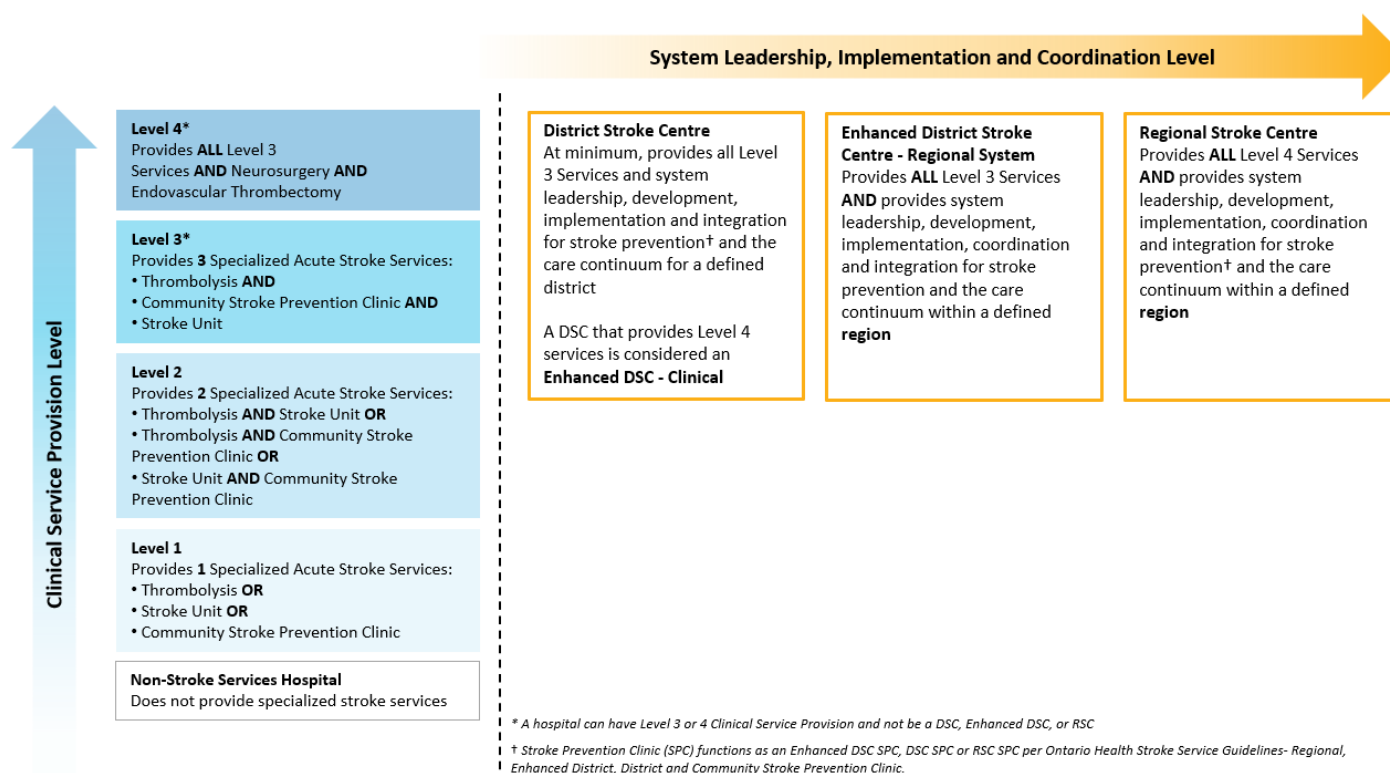
To ensure appropriate expertise and experience, hospitals exploring expansion of services to include District or Regional accountabilities, must first achieve the associated service provision level, i.e.,

- A Level 3 service provision level must be met prior to pursuing District Stroke Centre status or Enhanced District Stroke Centre – System;
- A Level 4 service provision level must be met prior to pursuing Enhanced District Stroke Centre-

Clinical or Regional Stroke Centre status.

Furthermore, progression from District Stroke Centre to Regional Stroke Centre should occur in a stepwise fashion as outlined in [Figure 1: Service Provision & System Leadership](#). Additional information regarding the criteria for District, Enhanced District and Regional Stroke Centres can be found in [Section C: District, Enhanced District and Regional Stroke Centres](#).

Figure 1: Service Provision/Designation Levels for Specialized Acute Stroke Services



Section B: Specialized Acute Stroke Services

Non-Stroke Service Hospital

Description: Non-stroke service hospitals do not offer specialized clinical stroke services on-site; however, these hospitals do play a critical role in facilitating access to specialized acute stroke services.

Minimum Expectations:

- Established protocols, in consultation with the District or Regional Stroke Centre/Enhanced District Stroke Centre- System, to respond to individuals presenting within 0-6 hours of stroke symptom onset/time last known well to ensure timely transport to thrombolysis capable/EVT referral hospitals;
- Utilization of screening tools to identify individuals likely to benefit from EVT in the 6–24-hour time window (e.g., Large Vessel Occlusion (LVO) Screening Tool) and implementation of protocols/processes, in consultation with the District or Regional Stroke Centre/Enhanced District Stroke Centre- System, to support timely referral and transport of eligible persons with stroke. For additional detail refer to the [Process for Non-tPA Hospitals to Access Stroke Consultation and/or EVT Services for Patients Presenting within 6-24 Hours of Stroke Symptom Onset](#);
- Establishment of referral pathways and protocols, in collaboration with District or Regional Stroke Centre/Enhanced District Stroke Centre- System, for managing persons with Transient Ischemic Attack (TIA), including referral to stroke prevention services;
- Strong linkages with Regional, Enhanced District and/or District Stroke Centre, regional stroke network team and/or district stroke team.

Thrombolysis:

Description: Provides 24/7 access to medical thrombolysis for persons with stroke within a defined catchment area with the support of local teams, regional telestroke models and/or provincial telestroke models.

Minimum Expectations:

- Pre-hospital bypass agreements and referral pathways with non-thrombolysis centres and EMS

providers;¹

- Rapid emergency care through established triage procedures;
- Acute stroke protocols to support timely administration of thrombolysis, including acute stroke imaging protocols that align with provincial standards (i.e. [Acute Stroke Imaging Protocol](#)).
- On-site imaging with 24/7 access, including a CT scanner (i.e. a third-generation or higher helical scanner) with multiphase or dynamic CTA programming (CT perfusion imaging with Health Canada Approved automated post processing software can also be used if available on-site);
- 24/7 Laboratory services, supporting both routine and urgent testing;
- Telemedicine equipment (where applicable);
- On-call schedule for Stroke Specialists with Fellowship Training or Equivalent Experience and Radiologists/Neuroradiologists and support staff (e.g., CT technologists) to support hyperacute consultation 24/7, 365 days of the year; hospitals without access to stroke specialists, must leverage a regional Telestroke or the provincial Telestroke program to ensure access to the required specialists for hyperacute stroke treatment decisions.
- Frontline staff (e.g., nurses, physicians, CT technicians) with required competency to support identification, assessment, and administration of thrombolysis;²
- Protocols and processes to enable access to higher level specialized acute stroke service providers (i.e. Endovascular Thrombectomy capable centres), stroke unit hospitals and secondary prevention clinics;
- Designated critical care/step-down/Level 2 (basic)³ and/or stroke unit with monitoring capabilities and protocols in place that follow current evidence based-stroke best practice recommendations;
- Formal partnerships, referral pathways and repatriation agreements with acute stroke unit hospitals and stroke prevention clinics;
- Comprehensive quality improvement program including clinical evaluation, and monitoring systems to ensure ongoing quality improvement;
- Participation in an established process for collection and analysis of process and outcome data (locally, regionally, and provincially);
- Physician and nurse champion with capacity to provide clinical and administrative leadership (e.g. ensuring protocols are up to date and reflective of best practice, in collaboration with Regional,

¹ Thrombolysis models for select 'walk in' only or inpatients are not encouraged as typically the number of eligible patients is low, negating the ability for a team to develop expertise and meet best practice targets for timely administration

² Refer to the [Telestroke Referring Site Handbook](#) for additional information regarding required competencies

³ Critical Care Services Ontario. (2020). Adult Critical Care Levels of Care Guidance Document. Retrieved from <https://criticalcareontario.ca/wp-content/uploads/2020/11/Adult-LoC-Guidance-Document-Final.pdf>

Enhanced District and/or District Stroke Centre);

- Strong linkages with Regional, Enhanced District and/or District Stroke Centre, regional stroke network team and/or district stroke team.

Hospitals considering expanding services to include thrombolysis with the support of the Ontario Telestroke Program should refer to the [Telestroke Referring Site Handbook](#) for additional requirements (e.g., clinical training and education requirements).

Stroke Unit

Description: Specialized unit dedicated to the care of persons with stroke/TIA and staffed by an experienced, interprofessional stroke team. Beds on the stroke unit are co-located and in physical proximity to each other.

Minimum Expectations:

- Refer to Ontario Health's [Ontario Stroke Unit Definition- A Best Practice Standard for Stroke Units in Ontario](#).
- In circumstances where stroke unit care is determined to be the most appropriate level of care for the individual with stroke/TIA, the stroke unit's responsibilities may extend beyond the hospital's typical catchment area when it is the closest stroke unit to the person's home.

Stroke Prevention Clinic

Description: Provides an integrated, interprofessional approach to stroke prevention for individuals who are at high risk of stroke, have had a TIA and/or who have had a stroke within a defined catchment area.

Minimum Expectations:

- Refer to the [Ontario Health Stroke Service Guidelines- Regional, Enhanced District, District and Community Stroke Prevention Clinic](#).

Neurosurgery

Description: Provides neurosurgical services for the management of hemorrhagic stroke and ischemic stroke, as indicated, including neurocritical care services (Neuro-ICU/Step-down/Level 2 beds).

Minimum Expectations:

- Established protocols to respond to individuals requiring neurosurgical intervention post stroke.

Endovascular Thrombectomy

Description: Provides EVT up to 24 hours of stroke symptom onset including those with stroke symptoms on awakening.

Minimum Expectations:

- Refer to Ontario Health's [EVT Service Delivery Requirements](#).

Section C: District, Enhanced District and Regional Stroke Centres

District Stroke Centre (DSC)

Description: Provides all specialized clinical acute stroke services (i.e., thrombolysis, stroke unit care, and stroke prevention clinic), except for neurosurgical and neurointerventional procedures. In addition, they provide leadership, development, implementation coordination and integration of stroke care throughout their district and across all points in the care continuum, in alignment with the broader regional stroke system and in collaboration with the regional stroke network team.

Minimum Expectations:

- Refer to the [Ontario Health Stroke Service Guidelines- District Stroke Centre](#), and the [Ontario Health Stroke Service Guidelines- Regional, Enhanced District, District and Community Stroke Prevention Clinic](#) for additional details regarding accountabilities and responsibilities.

Enhanced District Stroke Centre (EDSC)

Description: In certain circumstances, a District Stroke Centre may fulfill an enhanced role within the regional stroke system. This enhanced designation may reflect:

- Additional availability of specialized neurosurgical and neurointerventional services on site in addition to the minimum clinical requirements of a District Stroke Centre without the full stroke system and network responsibilities of a Regional Stroke Centre (i.e., **Enhanced District Stroke Centre - Clinical**);
- Additional leadership, and administrative support with respect to the planning, development, implementation, coordination, and integration of best practice stroke prevention and care across a defined region, like a Regional Stroke Centre, without meeting all clinical requirements for the designation of a Regional Stroke Centre (i.e., **Enhanced District Stroke Centre - System**). The EDSC- System supports a regional stroke network team in providing leadership for the development, coordination, and integration of the regional stroke system.

In both circumstances, the EDSC functions similarly to a Regional Stroke Centre for the respective enhancement (i.e., clinical or system and network).

Minimum Expectations:

- **Enhanced District Stroke Centre- Clinical:** Refer to the [Ontario Health Stroke Service Guidelines- Enhanced District Stroke Centre- Clinical](#), and the [Ontario Health Stroke Service Guidelines-](#)

[Regional, Enhanced District, District and Community Stroke Prevention Clinic](#) for additional details regarding accountabilities and responsibilities.

- **Enhanced District Stroke Centre- System:** Refer to the [Ontario Health Stroke Service Guidelines- Enhanced District Stroke Centre- System](#), and the [Ontario Health Stroke Service Guidelines- Regional, Enhanced District, District and Community Stroke Prevention Clinic](#) for additional details regarding accountabilities and responsibilities.

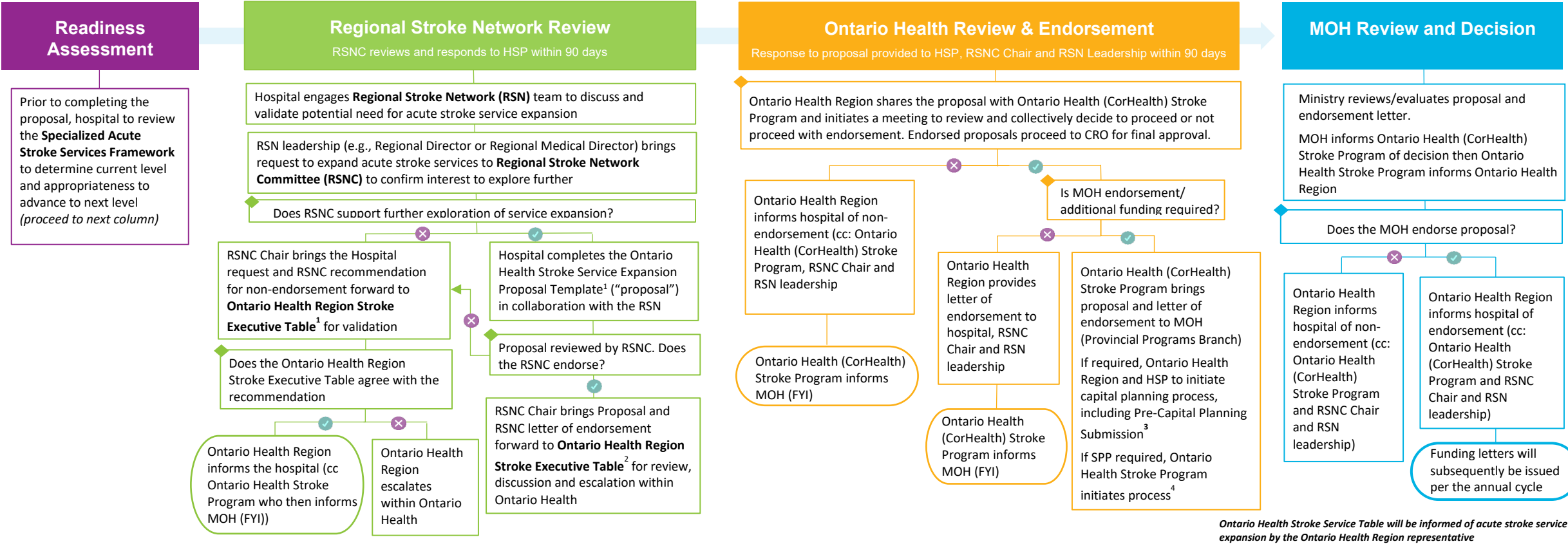
Regional Stroke Centre (RSC)

Description: Provides the most comprehensive array of clinical stroke services within the stroke region, as well as leadership, and administrative support with respect to the planning, development, implementation, coordination, and integration of best practice stroke prevention and care across the defined region.

Minimum Expectations:

- Refer to the [Ontario Health Stroke Service Guidelines - Regional Stroke Centre](#), and the [Ontario Health Stroke Service Guidelines- Regional, Enhanced District, District and Community Stroke Prevention Clinic](#).

Appendix A: Review and Approval for Stroke Service Expansion Requests



Ontario Health Stroke Service Table will be informed of acute stroke service expansion by the Ontario Health Region representative

Results of the Readiness Assessment should be used to:

- ❑ Determine appropriateness to advance to the next service level. The criteria of the previous level *must* be met before progression to the next level is considered.

Regional Stroke Networks will review the proposal for:

- ❑ Evidence of service gap that cannot be met by existing services
- ❑ Sufficient population and demand to generate service volumes (critical mass) and ensure expertise
- ❑ Evidence of hospital's ability to support new program (e.g., clinical staffing, leadership commitment)
- ❑ Potential impacts on other local resources (e.g., Critical Care Beds, diagnostic services)
- ❑ Assessment of impact to other specialized stroke hospitals and plans to mitigate impact have been developed/endorsed by impacted hospitals

Consider a peer review from another Regional Stroke Network, particularly those with cross regional stroke access and flow impacts

Ontario Health will review the proposal for validity, completeness, rationale, impact and need and consider the following:

- ❑ The capacity of existing stroke programs
- ❑ Performance status of Health Service Provider(s)
- ❑ Approved programs not yet operational
- ❑ Overall planning strategy for stroke services in Ontario
- ❑ Clinical practice guidelines and recommendations
- ❑ Capital and operating budget requirements including any additional local resources needed

Note: Funding decisions would be based on a proposal review by Ontario Health Regions, Ontario Health (CorHealth) Stroke Program, and/or Ministry of Health.

Ministry decision takes into consideration:

- ❑ Ministry's fiscal position with respect to funding, EVT, capital, and Strategic Planning Process (SPP) requests

Footnotes:

1. The Ontario Health Stroke Service Expansion Template can be requested from the Regional Stroke Network Administrative Lead (e.g., Stroke Regional Director)
2. Ontario Health Region Stroke Executive Table is in development, in the interim, the Regional Director would submit the proposal to their Ontario Health region stroke lead.
3. If proposal endorsed and a capital component is required, hospital/OH region to begin planning work with the Health Capital and Investments Branch (HCIB) of the MOH (i.e., the hospital would complete and submit a pre-capital submission form).
4. Other funding requests should go through the Strategic Planning Process (SPP) submitted by Ontario Health (CorHealth) Stroke Program in collaboration with the Ontario Health region in June for next fiscal year funding.

Need this information in an accessible format? 1-877-280-8538, TTY 1-800-855-0511, info@ontariohealth.ca. Document disponible en français en contactant info@ontariohealth.ca