Integrated Stroke Care

Why integrated stroke care is considered a specialized service? How does this relate to Ontario Health Teams (OHTs)?

Stroke care is a specialized service that is provided by designated interprofessional teams with expertise in stroke across the continuum of care. “Specialized services” refer to highly-focused care provided to patients within a defined geographical area[1]. Stroke care requires a specialized approach because the functional and medical needs of each patient vary from one person to the next, and change throughout the stroke recovery journey. To provide stroke care in a timely and effective manner, stroke care providers must have the knowledge base and expertise to select and provide appropriate interventions, then adapt and progress these interventions in response to the rapidly evolving needs of each stroke patient. Caregivers and family members of persons who have experienced stroke play a key role as part of the care team and should be provided with ongoing education and support, especially during transitions in care.

Integrated stroke care requires a coordinated approach across the continuum to ensure persons experiencing stroke receive access to expert best practice care. In Toronto, specialized hyperacute and acute stroke services are provided at designated centres accessed through system-wide protocols and processes. Stroke rehabilitation begins soon after a stroke has occurred, with early assessment by rehabilitation professionals in acute care. Stroke rehabilitation can continue in post-acute care in inpatient stroke units, outpatient clinics, and in-home settings. Stroke rehabilitation is a progressive, dynamic, goal-oriented process aimed at enabling persons whose daily life functioning and participation have been affected by stroke to achieve their optimal physical, cognitive, visual, perceptual, emotional, communicative, and social levels of function. Stroke secondary prevention services are also provided at designated centres by specialized teams.

The following guiding principles outline the nature of integrated stroke care services as specialized services aligned with stroke care best practices[1,2]

Team Expertise & Competencies

- Specialized stroke teams are interprofesional and include at minimum a dietitian, nurse, occupational therapist, physician, physiotherapist, social worker, and speech-language pathologist.

- To provide specialized stroke care, all team members must have appropriate and up-to-date credentials/licenses in their fields. Team members are provided with additional training regarding the unique needs of individuals with stroke.
- Specialized stroke teams provide care reflective of the *Canadian Stroke Best Practice Recommendations* and *Toronto Stroke Networks' Stroke Standards of Care*.
- Specialized stroke teams receive ongoing professional development to deliver current evidence-based stroke services.

Provide Services to a Critical Mass

- Providing care to a critical mass (minimum volume) of stroke patients supports development of a specialized skillset for stroke teams and sustainability of specialized stroke services.
- The volume of patients seen in specialized stroke programs includes all levels of complexity associated with stroke presentation, resulting in effective and efficient care.

Requires Clinical Coherence with Other Programs

- Stroke care is provided across a continuum, starting in hyperacute settings at the onset of stroke and continuing into the community months to years after a stroke. Since stroke care is provided across a continuum in multiple care settings, coordination with several other specialized and non-specialized services is essential to support a patient's journey of recovery after stroke. Effective coordination of services is required for positive patient outcomes and equitable, timely access to services for stroke patients.

Requires Specialized Resources with Extensive Capital and/or Operating Resource Requirements

- Substantial capital and operating resources are required to create and sustain stroke services, including dedicated human resources, space, and equipment to conduct assessments and deliver interventions. These resources are not typically available in non-specialized settings and require specific knowledge and expertise to operate (e.g., endovascular thrombectomy, thrombolysis, videofluoroscopic swallowing studies, fibreoptic endoscopic evaluation of swallowing, augmentative communication, assistive technology, driving assessment and intervention, return to work).
- Stroke care interventions are time sensitive and resource dense. Stroke care is progressive and dynamic, requiring specialized, individually tailored resources that extend well beyond the acute episode of care.
- Providing care aligned with best practices for stroke rehabilitation intensity requires extensive human resource requirements in the form of specialized stroke teams:

- Acute rehabilitation services should provide a minimum of 45 mins of direct therapy per patient per day, at least six days a week, with a recommended therapist to patient ratio of 1:6 for occupational therapy and physiotherapy and 1:12 for speech-language pathology
- Inpatient rehabilitation services should provide a minimum of 3 hours of direct task-specific therapy per patient per day by the core therapies for at least six days per week, with a recommended therapist to patient ratio of 1:6 for occupational therapy and physiotherapy and 1:12 for speech-language pathology
- Outpatient rehabilitation and in-home services recommended intensity of rehabilitation is 2-3 times/week for 8 – 12 weeks
- Early Supported Discharge services should be provided 5 days per week at the same level of intensity as they would have received in the inpatient setting to meet patient needs

How Specialized Care Integrates with OHTs/Primary Care

Throughout their stroke journey, persons with stroke will receive specialized care for stroke and at the same time as receiving non-specialized care (e.g., primary care) for other health needs. Coordination between specialized and non-specialized services happens while persons with stroke are receiving specialized care and continues across the continuum. During these transitions in care, it is essential that caregivers and family members of persons with stroke are supported and receive appropriate, timely information.

Who Requires Integrated Stroke Care?

All patients who have experienced a stroke require integrated, specialized stroke care. From the first encounters with the healthcare system following a stroke to ongoing rehabilitation and support, specialized stroke care is essential to optimize patient experiences and outcomes. In hyperacute care, specialized expertise and equipment is required to recognize and treat strokes (e.g., neurologists and neuroradiologists with specific training to assess and administer treatments to resolve strokes). Specialized teams on stroke units provide care aligned with best practice and evidence. Research on specialized stroke unit care shows that receiving care on a stroke unit is associated with reduced risk of death and disability compared to receiving stroke care in less coordinated settings[3].

Specialized stroke teams are interprofessional groups of healthcare providers that have specific training in approaches for stroke care and recovery to address the diverse impacts that stroke can have on individuals, and include at a minimum: dietitian, nurse, occupational therapist, physician, physiotherapist, social worker, and speech-language pathologist. Specialized stroke teams should be located in a geographically-defined area to support a critical mass of patients. Persons with stroke may also benefit from additional services including (but not limited to): palliative care planning, peer support,

pharmacy, psychology, recreational therapy, spiritual care, stroke recovery groups, and transition planning[1].

Any patients experiencing difficulties with daily function and participation in life roles following an ischemic or hemorrhagic stroke are eligible for specialized stroke services. Prior to beginning rehabilitation, stroke patients must be medically stable and have identifiable goals for rehabilitation, recovery, and participation. Whether patients will go to high-intensity inpatient or community-based rehabilitation (e.g., ambulatory/outpatient, home-based, or virtual) depends on the severity of stroke, level of function, and care needs.

Typically, rehabilitation is recommended for any person experiencing stroke with resulting functional difficulties. When deciding whether a patient should be referred to community-based or inpatient rehabilitation setting, several factors should be considered. Individuals with higher levels of functioning post-stroke would typically be considered for community-based rehabilitation. If someone cannot be safely discharged home, they should be considered for inpatient rehabilitation.

Together, members of a specialized stroke team support care in the following areas: cognition, perception, communication, mobility, psychosocial, participation, risk factor management and occupation. Specialized stroke rehabilitation should also support transitions of care, e.g. home assessments, modifications or equipment to support transitions, and caregiver training and education to support transitions.

How Does Integrated Stroke Care Help?

Stroke rehabilitation aims to optimize function post-stroke, prevent secondary disabilities or medical conditions, support independence, and help stroke survivors attain a high quality of life. These are common goals for both inpatient and community-based rehabilitation. Research on specialized stroke unit care shows that receiving care on a stroke unit is associated with reduced death and disability compared to receiving stroke rehabilitation in less coordinated settings[4]. This research applies to both acute and rehabilitation settings.

Stroke rehabilitation happens across the continuum of care. Rehabilitation occurring in inpatient and community-based rehabilitation settings offers similar types of services for persons with stroke. Some important distinctions between inpatient and community-based rehabilitation include:

1. The severity of stroke experienced
2. The intensity of rehabilitation provided
3. The types of rehabilitation services required

Regardless of the rehabilitation setting, care delivered by an interprofessional stroke team should be based on individualized rehabilitation plans using a patient-centered

approach, shared decision-making, culturally appropriate and agreed-upon goals, and preferences of the patient, family, caregivers and the healthcare team[1].

Integrated stroke care is a specialized service. These services require specific expertise and resources, and a critical mass of patients to sustain these services. Coordination of stroke care relies on coherence with other care programs and services. Integrated stroke care needs to be sustained as a specialized service as Ontario transitions to Ontario Health Teams to ensure provision of best practice care that optimizes patient experiences and outcomes.

References:

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2. GTA Rehab Network. September 2020. *Submission to Ontario Hospital Association Specialized Services Working Group*.
3. Stroke Unit Trialists' Collaboration. Organised inpatient (stroke unit) care for stroke. Cochrane Database Syst Rev 2013, pp. Cd000197