Ontario Health

Community Stroke Rehabilitation

Model of Care

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I. Community Stroke Rehabilitation

Following a stroke most people will require rehabilitation in the community that supports continued recovery and can provide opportunities to address goals related to returning to meaningful activities and reintegration to life after stroke. Each have unique experiences and need to be included as partners in their care. A person with stroke's preferences, needs and values should always be respected, with the goal of providing person centered care.

There is significant variability in current Community Stroke Rehabilitation (CSR) programming offered in Ontario. An expert panel of researchers, clinicians, administrators, stroke network representatives, and persons with lived stroke experience, was established to help inform the Model of Care for CSR in Ontario (see Appendix A for membership of the Community Stroke Rehabilitation Definition Work Expert Panel). Grounded in evidence and a jurisdictional scan, a Modified Delphi approach was used to obtain consensus on this definition, including two rounds of surveys and a virtual workshop (for details about the process see Appendix B).

CSR is defined as, care provided by an interprofessional team with stroke specific expertise, who are guided by best practice guidelines. These teams provide person-centered and coordinated care, delivered in the setting(s) that best meets the needs of the person with stroke, on average over 8-12 weeks, and at a frequency dictated by the person with stroke's goals. CSR allows the opportunity for re-entry to services, obtain follow-up care, and linkages to community supports, to ensure successful maintenance of functional recovery and community re-integration.

The CSR Model of Care, is comprised of the following key Care Components:

1. Population
2. Team Members
3. Referral Process
4. Care Settings
5. Duration of Care
6. Clinical Delivery

The definition of the Model of Care, will serve as the foundation for the next steps and phases of the provincial multi-year CSR initiative to assess, evaluate, and address gaps in access and care delivery. It will be used by health service providers and policy and system leaders to plan and implement a standard of care to promote integrated, equitable, person-centered and population health outcomes.

II. Model of Care

A Model of Care broadly defines the way health services are delivered. It outlines best practice care and services for a population, or group. When designing a new or revised Model of Care, the aim is to bring about improvement in service programming and delivery through affecting change. The Model of Care components for CSR are based on stroke best practices and the guidance, advice, and recommendations of the expert panel.

The key underpinnings that emerged during the Model of Care development process included:

- The importance of having specialized teams with stroke expertise and processes for maintaining that stroke expertise,
- The importance of taking a person-centered, individualized approach to planning and implementing each person with stroke's plan of care, as it relates to the timing, duration, and frequency of therapies provided,

- The importance of designing programs so they can help persons with stroke reach their goal(s) returning to meaningful life activities and roles, in their homes, and in their communities,
- The importance of setting up CSR programs within the larger integrated stroke pathway or continuum of care, by ensuring seamless transitions for persons with stroke between settings of care supported by high levels of communication and coordination between team members working in different settings along the pathway.

1. Population

Following a stroke, anyone with ongoing achievable and/or meaningful rehabilitation goals[1,3], should continue to have access to specialized stroke services following a hospital stay. Persons with stroke identified as eligible for CSR are to be identified early (during their hospital stay), to facilitate improved transitions of care. Eligibility includes the diagnosis of stroke, are medically manageable, willing to participate in programming, and feel they can safely return to their home setting.
Additionally, CSR programs should provide services to persons with stroke who:

- Require varying intensity and frequency of rehabilitation,
- May only require one rehabilitation discipline and/or case management/care coordination/navigation,
- Can establish goals either independently or with support from their therapy team and family members/informal caregivers,
- Have goals related to transferring skills learned in the hospital setting to the home setting, including those with limited expectations for further improvement

2. Team Members

The CSR team is comprised of both clinical support and clinician members. The CSR clinical team is a specialized interdisciplinary team of clinicians experienced in stroke and stroke rehabilitation[1]. CSR teams should include:

- At a minimum: Occupational Therapy, Physiotherapy, Speech-Language Pathology, Social Work, and a dedicated stroke care coordinator/navigator (dedicated by role or dedicated by time provided to complete tasks required and act as a point person for persons with stroke)
- A nurse or access to a nurse with expertise in stroke care,
- Rehabilitation Assistants (if they are working under the guidance of regulated health care professionals and guidelines for their supervision can be met),
- Administrative support (such as an administrative assistant, coordinator, or clerk),
- Pathways for accessing additional team members and specialists for consultation, assessment or treatment (e.g., dietitian, pharmacy, spasticity clinic, seating clinic, recreation therapists, psychosocial or psychological supports, physiatry, psychiatry, others),
- Persons with stroke can receive their community rehabilitation from a neurological rehabilitation program or team, in areas where stroke volumes do not allow for a dedicated team if: a) team members providing the care have stroke expertise, and b) a process for maintaining their stroke expertise (e.g., access to mentorship, ongoing education and training) is in place,
- Although not a direct CSR team member, a primary care provider (family doctor or nurse practitioner) or most responsible physician, to allow for ongoing medical and care management is important for persons with stroke to have access to.

3. Referral Process

Referrals for CSR should be accepted from acute care, inpatient rehabilitation, primary care, stroke prevention clinics, and home and community care teams. Referral pathways, including acceptance criteria, should be available and communicated to all referring sources. In addition, CSR should:

- Have a close and ongoing relationship with acute and inpatient rehabilitation stroke units, and stroke prevention clinics, to facilitate early identification of appropriate referrals, obtain person with stroke's consent, explore goals for persons with stroke related to participation in the program, for transfer of care information and transition planning,
- Ensure transition plans are developed and agreed upon in partnership with persons with stroke, family members and informal caregivers, as well as both the referring and receiving teams in advance of the transition. This includes the transfer of essential information, a pre-transition needs assessment to determine the need for, and appropriate timing of a home visit,
- Ensure rehabilitation professionals with knowledge about stroke are responsible for reviewing intake applications[1],
- Meet provincial and best practice standards for time of receipt of referral to decision regarding intake (i.e., within 24-48 hrs),
- Ensure persons with stroke who are not candidates for CSR, are still contacted and actively linked to alternative appropriate support in their community,
- Additionally, each region or sub-region should be responsible for ensuring CSR services are provided as part of a coordinated and integrated stroke care pathway (e.g., centralized referral access).

4. Care Settings

- Persons with stroke should receive rehabilitation in a mix of both the outpatient clinic setting, and the home-setting[*] according to their needs and goals. Movement between settings can be non-linear.
- Options for virtual care should be incorporated into every CSR Program.

5. Duration of Care

Rehabilitation programming should be provided (on average), over an 8–12-week period, and at a frequency dictated primarily by the person with stroke's needs and goals, guided by best practice for frequency (45 minutes per day per required discipline, 2-5 days per week)[1]. In addition, the programming and teams should:

- Allow flexibility in use of therapy visits over time in a way that best meets person with stroke's needs that facilitates goal achievement,
- Use frequent re-assessment of person with stroke's progress toward goals to help determine appropriate duration of therapy,
- Discuss with the person with stroke and agree upon time to first visit. This includes outlining the risks and benefits of delaying time to first visit, while following best practices whenever possible (i.e., Within 48 hours of discharge from acute care hospital and within 72 hours of discharge from an inpatient with stroke rehabilitation hospital)[1],
- Offer care services on the days of the week and the times of day most optimal for a person with stroke's success and their ability to participate,
- Incorporate Early Supportive Discharge (ESD) level service where feasible and as required for that individual (ESD is provided to those with mild-moderate stroke for up to 4 weeks, therapy is provided 5

[*] Long Term Care (LTC) is acknowledged as a person's home, however, for initial planning and implementation of the CSR initiative, it is currently out of scope. LTC as a home setting will be reconsidered in future implementation planning.

days per week at an intensity the person with stroke would have received on an inpatient rehabilitation unit[1]),
- Allow re-entry to the programs for persons with stroke who meet eligibility criteria up to one-year post-discharge from the program,
- Consider providing follow-up at regular intervals (6 month and 1 year) if the person with stroke consents in advance to be contacted. Programs should have clear objectives and/or goals for follow-up (e.g., prevention of decline, health coaching), and/or for quality program evaluation or research purposes,
- After one-year, ongoing monitoring, and support for persons with stroke should continue with the person with stroke's primary care provider and/or other community supports.

6. Clinical Delivery

a) Clinical Assessment

Assessment of a person with stroke's impairment, functional activity limitations, role participation restrictions, and environmental factors should be conducted using standardized valid assessment tools. Those tools should be adapted for persons with stroke with communication limitations[1] . Persons with stroke and their families/informal caregivers should also participate in an in-depth assessment to determine readiness of education and ability to integrate knowledge, training, and psychosocial support[2]. Finally, individualized learning needs and goals should be assessed and documented by the healthcare team regularly[2].

b) Treatment

Clinicians should use evidence-based treatments that will assist persons with stroke in achieving their identified goals. Persons with stroke and families/informal caregivers should be involved in their care planning, goal setting, and transition planning[2]. Persons with stroke should be provided with information on their treatment plan, and in a format suitable to their needs (e.g., written, verbal, or video). Additional considerations and/or expectations for treatment plans are:

- Provide persons with stroke and their family members/informal caregivers with general emotional and psychosocial supports, (within the scope of practice of the clinician), along with leveraging links to community programs, and agencies who provide such services,
- Provide stroke vocational rehabilitation, delivered as a service that is part of CSR, including referral to, or collaborating with, other community programs and organizations to support a person with stroke's return to work,
- Initiate community reintegration planning as early as possible after a person with stroke's return to home (based on person with stroke's readiness),
- Exploring return to driving for person with stroke and linkages to additional supports for return to driving,
- Emphasize self-learning and practice between therapy sessions,
- Incorporating a supported self-management approach to care,
- Provide education and counselling on the potential impact of stroke on relationships, including the opportunity to discuss intimacy, sexuality, and sexual functioning with their healthcare providers[2],
- Provide opportunities for persons with stroke and their family members/informal caregivers, to consult and interact with the team members as required. Such as planned family meetings and discussions during treatment, and phone check-ins to review progress and adjust care plans.

c) Education

"Education for people with stroke, their families, and caregivers are an integral part of stroke care and should be included as part of all healthcare encounters and during transitions. Individualized educational needs change over time and may need reassessment and updating on an ongoing basis. Delivery of education should be individualized and implemented based on an assessment of learning needs and goals of people with stroke and their families."[2]. Persons with stroke, their family and/or informal caregivers should be offered consultations and the opportunity to interact with team members as required, such as to review progress and adjust care plans. In addition, the CSR team should provide persons with stroke, their caregivers or family members with:

- Information, education, and continued training on stroke and how to support persons with stroke in the home (this requires sensitivity and respect of their relationships related to role changes),
- Education on risk factors and risk factor management for stroke and stroke prevention (liaise with Stroke Prevention clinics where appropriate),
- Hands-on training on how to care for a person with stroke in the home (e.g., safe transfers, assisting with walking, dressing, communicating),
- Education and information for persons with stroke and their substitute decision makers regarding having advance care planning and goals of care discussions with their primary care provider or other medical provider.

d) Care Delivery Formats

In addition to individualized one to one therapy, CSR teams can offer programming in other formats. These can include:

- The CSR teams supporting persons with stroke (or connect them to existing supports) to access and attend telemedicine or virtual consults,
- Virtual care to be leveraged for self-management programming, and/or may be used for review of in-home exercises, provision of education to family and caregivers, and other aspects of care when appropriate; consideration needs to be given to access to technology, ability, and comfort of the person with stroke to use this format,
- Group therapy should be provided with involvement or oversight of a regulated health care professional with expertise in stroke care where appropriate,
- Group programming should be offered either in-person or virtually, to provide aspects of care amenable to this format (e.g., peer support, education for persons with stroke, education for informal caregivers, teaching self-management skills, in some cases group exercise or cognitive training groups), especially in communities where these services are not offered by other organizations.

e) Transition out of the Program

Persons with stroke and their family members should have a good understanding of when transition from formalized CSR to community re-integration will occur, and the criteria used to make that decision. This can be supported by clear communication from the CSR team members, which begins early upon the person with stroke's entry into CSR and is ongoing.

Additionally, CSR programs should:

- Provide persons with stroke with the contact information for person(s) or services they can reach out to for provision of continued advice, support, and community reintegration,
- Connect persons with stroke and/or their family members/informal caregivers to peer support as appropriate, to reduce the impact of loneliness and isolation,
- Set up Person Initiated Follow-Up pathways, providing persons with stroke and families the education regarding signs or changes to look for that may indicate the need for a follow-up with the CSR team.

f) Team Processes

Communication with persons with stroke, their family members, caregivers, and amongst the CSR team members, is key for high functioning teams. The Canadian Stroke Best Practice Recommendations (2019)[1] recommends, a "case coordination approach including regular team communication to discuss assessment of new clients, review client management, goals and plans for discharge or transition".

Important components for maintaining high functioning teams with stroke expertise also include:

- Team meetings held every 1-2 weeks, (as determined by clinician caseload), to review new referrals, care plans, and for the scheduling of future therapy visits,
- Embedding a culture of continuous quality improvement into the development and implementation of the CSR programs, where clinicians are provided with support and time to engage in quality improvement activities,
- Foster close links to agencies in the community that provide social services (for example housing, financial assistance), health promotion, and wellness programming,
- Access to a simple and secure tool for communication amongst team members,
- Access to one place to document (a joint Electronic Medical Record (EMR)),
- Access to the technology and equipment required to deliver clinical treatments based on best practices, and suited to the setting where the care is being delivered (home and/or outpatient/clinic setting),
- Availability and time for CSR team members to act as an educational and mentoring resource to others serving and caring for persons with stroke in their community,
- Provide training in supportive conversation with adults with aphasia to all team members,
- Processes for formal, informal, and continuing education on stroke best practices to CSR team members should be developed,
- Process in place to keep team members up to date on available community resources appropriate for persons with stroke, their families, and informal caregivers.

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Appendix A: Community Stroke Rehabilitation Expert Panel Members

Name	Title	Organization
Courtney Bean	Vice President, Strategic Solutions and Partnerships	VHA Home Healthcare
Erin Bickell	RSW, MSW	South West Community Stroke Rehabilitation Team
Jeanne Bonnell	Director Home and Community Care	Home and Community Care Support Services Champlain
Eileen Britt	Regional Stroke Rehabilitation and Community Coordinator	Central South Stroke Network
Dr. Daniel Brouillard	Stroke Patient Advisor	Stroke Network of Southeastern Ontario Regional Stroke Steering Committee, Community Stroke Re-integration Leadership Committee
Mandy Byerley-Vita	Clinical Manager, Outpatient Rehabilitative and Ambulatory Care Services	St. Joseph's Care Group, Thunder Bay
Anne Campbell	Caregiver of person with stroke/Caregiver with lived experience	
Donna Cheung	E Stroke Rehabilitation Referral Coordinator	Toronto Stroke Networks
Brittany Clarke	Program Director; Clinical Director and Co-Founder	Halton-Peel Community Aphasia Programs and Evergreen Communication Therapy
Candace Coe	District Stroke Best Practice Lead	Brant Community Healthcare System
Margo Collver	Regional Community and Long-Term Care Coordinator	Southwest Stroke Network
Adrienne Curran	Speech Language Pathologist	Halton Healthcare Services, Step-Up Outpatient Rehabilitation and Assess and Restore Program
Daniela D'Aversa	Occupational Therapist	Trillium Health Partners, Mississauga Hospital Site, Outpatient Neuro Rehab
Jo-Anne Desroches	Director of Client Services	Closing the Gap Healthcare
Kelly Didone	Post Stroke Support	North East Post Stroke Transitional Care Program
Mary Egan	Full Professor and Director of School of Rehabilitation Science	University of Ottawa
Janna Elder	Rehabilitation Assistant	Community Stroke Rehabilitation Team, London
Maria Fage	Manager of Patient Services	Home and Community Care Support Services Waterloo Wellington
Jenn Fearn	Rehabilitation and Community and Long-Term Care Coordinator	Northeastern Ontario Stroke Network
Jamie Fleet	Physiatrist	Parkwood Hospital, London

Name	Title	Organization
Stephanie Fowler	Manager, Clinical Services	Home and Community Care Support Services North East
Becky French	Manager Outpatient Stroke Program, Allied Health	Southlake Regional Health Centre
Esme French	Regional Stroke Rehabilitation Specialist	Northwestern Ontario Stroke Network
Theresa Grant	Manager, Community Stroke Rehabilitation Program	Home and Community Care Support Services, Champlain
Tina Hamilton	Rehabilitation Manager	Dryden Hospital
Shelley Huffman	Rehabilitation Coordinator	Stroke Network of Southeastern Ontario
Leanne Johnson	Northwestern Ontario After Stroke Coordinator	March of Dimes Canada
Abigail Kavanaugh	Physiotherapist Outpatient Program	Providence Healthcare
Linda Keirl	Person with lived experience	
Tim Lapp	Physiatrist	Muskoka Algonquin Health Care
Beth Linkewich	Regional Director	North East GTA Stroke Network
Colleen MacLean	Manager Home and Community Care	Home and Community Care Support Services North West
Amy Maebrae-Waller	District Stroke Coordinator Durham, District Stroke Centre and Patient Care Manager (Hands, Neuro, Resp Rehab) and Stroke Prevention Clinic	Lakeridge Health Central East Stroke Network
Greg Mann	MA MSW Client Services	Mid East Sub Region Home and Community Care Support Services Toronto Central
Kelly McCrae	Manager, Professional Practice and Allied Health Services	Royal Victoria Hospital
Jocelyne McKellar	Rehab & Community Re-engagement Coordinator	Toronto West Regional Stroke Network, Toronto Western Hospital
Katherine Mileski	Physiotherapist	Toronto Rehab Fast Track Outpatient Program
Kelly Miller	Rehabilitation Facilitator Community Stroke Rehabilitation Team	Grey Bruce Health Services
Aruna Mitra	Director Home and Community Care	Home and Community Care Support Services Hospital, Initial Care & Rehabilitation Teams, Central West
Malaika Mvungi	Stroke Coordinator	South East Toronto Stroke Network
Emily Nalder	Research /Assistant Professor	University of Toronto
Catherine Nicol	Manger, Home and Community Care	Home and Community Care Support Services Southeast

Name	Title	Organization
Dave Nielsen	Family member of stroke survivor/person with lived experience	
Manny Paiva	Coordinator, Rehabilitation (including stroke OP and Community Rehab)	St. Joseph's Healthcare, London, Parkwood Site
Christine Patten	Person with aphasia/person with lived experience	Stakeholder of Aphasia Institute
Melanie Paul	Clinical Manager	North East Specialized Geriatric Centre
Rosie Pipitone-Middleton	Coordinator Outpatient and Rehab Outreach Services	Hotel Dieu Grace Healthcare Windsor
Chris Pollard	Director of Rehabilitation Services	Hotel Dieu Shaver Health and Rehabilitation Centre
Karen Pontello	OT (Ph.D.) and Managing Partner	Partners in Rehab , Thunder Bay
Nicholas Pontello	Physiotherapist , OP Program	Partners in Rehab, Thunder Bay
Fatima Quraishi	Regional Director	South East Toronto Stroke Network
Tomi Raine	Person with lived experience	
Dr. Benjamin Ritsma	Physiatrist, Clinical Director Assistant Professor	Providence Care Hospital, Kingston Queens University School of Medicine, Department of Physical Medicine and Rehabilitation
Kristen Rose	Communicative Disorders Assistant	Southlake – Outpatient Neuro Rehab Clinic
Joan Ruston-Berge	Manager Rehabilitation and District Stroke Services	Grey Bruce Health Services, Owen Sound
Julie Savage	Rehab 4 and Ambulatory Stroke Clinic Manager	Elisabeth-Bruyere Continuing Care
Lisa Sheehy	Affiliate Investigator, Bruyère Research Institute; Clinical Research Coordinator, University Heart Institute Research Corporation	Bruyere Research Institute and Ottawa Heart Institute
Gary Siu	Project Manager, Outpatient Services	St. John's Rehab
Kari Smith	Person with lived experience	
Bill Stevens	Central South Patient and Family Advisory Council Member and Person with lived experience	
Cheryl Strautman	Occupational Therapist	CommuniCare Therapy
Nicola Tahair	Regional Director Toronto West Stroke Network	Toronto West Stroke Network

Name	Title	Organization
Denise Taylor	North West Regional Rehabilitation Care Program Manager	North Western Region
Dr. Robert Teasell	Professor and Chair, Department of Physical Medicine, and Rehabilitation Western University Clinical Scientist, Lawson Research Institute Medical Scientific Advisor, Gray Mobility and Activity Centre Parkwood Institute, St. Joseph's Health Care London Past Co-Chair for 2015 and 2019 Canadian Best Practice Guidelines in Stroke Rehabilitation	Professor and Chair, Department of Physical Medicine and Rehabilitation Western University
Alda Tee	Regional Stroke Rehabilitation Coordinator	Central East Stroke Network
Camilla Todesco	Person with Aphasia/Person with lived experience	Stakeholder of Aphasia Institute
Maggie Traetto	Regional Community and Long-Term Care Coordinator	West GTA Stroke Network
Mary Lynn Turk	Bingham Memorial Hospital Physiotherapy Program Leader	Bingham Memorial Hospital
Natasha Uens	Physiotherapist	Quinte Health Care Day Rehab
Dana Vanderaa	Manager, Rehabilitation Therapy Services	Bluewater Health, Sarnia
Richardo Viana	Ricardo Viana MD, FRCPC, CSCN Diplomate (EMG) Associate Professor, Western University Department of Physical Medicine & Rehabilitation Stroke Rehabilitation Medical Director - Parkwood Institute PM&R Competence Committee Chair PM&R CBME Lead	
Yasmin Visram	Rehab and Community Re-engagement coordinator	North East GTA Stroke Network
Rob Woskosky	Manager Central East Home and Community Care, Lead for Community Stroke Pathway	Central East Home and Community Care Support Services

Appendix B: Modified Delphi Process

A Modified Delphi Process is a structured communication process where knowledge that is uncertain or incomplete is evaluated by experts in an iterative process. It is often used in the formulation of standards, guidelines, clinical pathways, or definitions. It can bring together experts from diverse backgrounds with respect to experience and expertise and allows individuals to anonymously provide input in an asynchronous manner. In this case, 74 experts were invited to participate in two rounds of surveying followed by a full-day video enabled face-to-face workshop to discuss remaining items on themes with limited consensus. Statements were considered agreed upon if they had 80% or more rating so agree or strongly agree with less than 15% rating disagreed or strongly disagreed. See diagram below for an outline of steps taken and results: