Core Elements of Delivery of Stroke Prevention Services

A critical component of secondary stroke prevention is access to specialized stroke prevention services (SPS), ideally provided by dedicated stroke prevention clinics. Stroke prevention clinics (or similar vascular prevention clinics) provide a comprehensive interdisciplinary approach to prevention of first or recurrent stroke, conduct detailed assessments by a range of healthcare disciplines, facilitate timely access to appropriate diagnostic testing and interventions, and provide education to patients and families. They also promote continuity of care between acute care facilities, rehabilitation services, the patient, their family and caregivers, primary care providers, and other community care service providers.

In 2016, the Heart and Stroke Foundation conducted a Stroke Prevention Services Resource Inventory (SPSRI) through which 123 stroke prevention services were identified across Canada. Services were available in every province; however, there were considerable differences between prevention services with respect to structural elements such as models of care, hours of operation, SPS team members, and availability of diagnostic services; process elements such as wait times for appointments, and wait times to access services such as imaging and Holter monitoring; and, outcome elements such as monitoring quality of care and stroke recurrence rates.

The SPSRI inventory was created using a modified Delphi methodology. The foundation of the SPSRI is the Canadian Stroke Best Practice Recommendations, and in particular this module on the Secondary Prevention of Stroke. A review of the literature was performed to identify different models of prevention services, and core elements of such services. Consultations were then held with stroke prevention service providers, funders and policy makers. An extensive list of elements of prevention services was then developed that aligned with the evidence-based best practice recommendations. The draft SPSRI underwent three rounds of voting by a wide range of stroke care clinicians, managers, patients and funders to identify the final set of elements for the inventory.SPSRI was sent to a specific contact person at each of the 123 identified SPS. A total of 119 services completed the inventory (97% response rate). Analysis of the responses informed further refinement of the inventory and final inclusion list of core elements of stroke prevention services.

A framework of key components of delivering prevention services (Figure Two), and a comprehensive list of the core elements of stroke prevention services (Table Two). The purpose of this framework and list of elements is multifaceted, and are to:

- enable stroke prevention service providers, regardless of size or location, to assess the types and level of services provided;
- identify gaps in the core elements of prevention services to inform planning, development and quality improvement initiatives;
- identify issues of access to stroke preventiuon services, based on location of services as well as hours of operation (e.g., once a week versus daily), and availability of healthcare professionals and diagnostic services (e.g., CAT scanner) onsite;
- to identify the list of elements present and not yet available that serve as enablers to implementation of the stroke best practice recommendations included in this update of the Secondary Prevention of Stroke Best Practices update 2017;
- to strengthen service provision and increase accountability.

FIGURE TWO: HSF-CSBPR CORE ELEMENTS OF STROKE PREVENTION SERVICES UNDERLYING FRAMEWORK

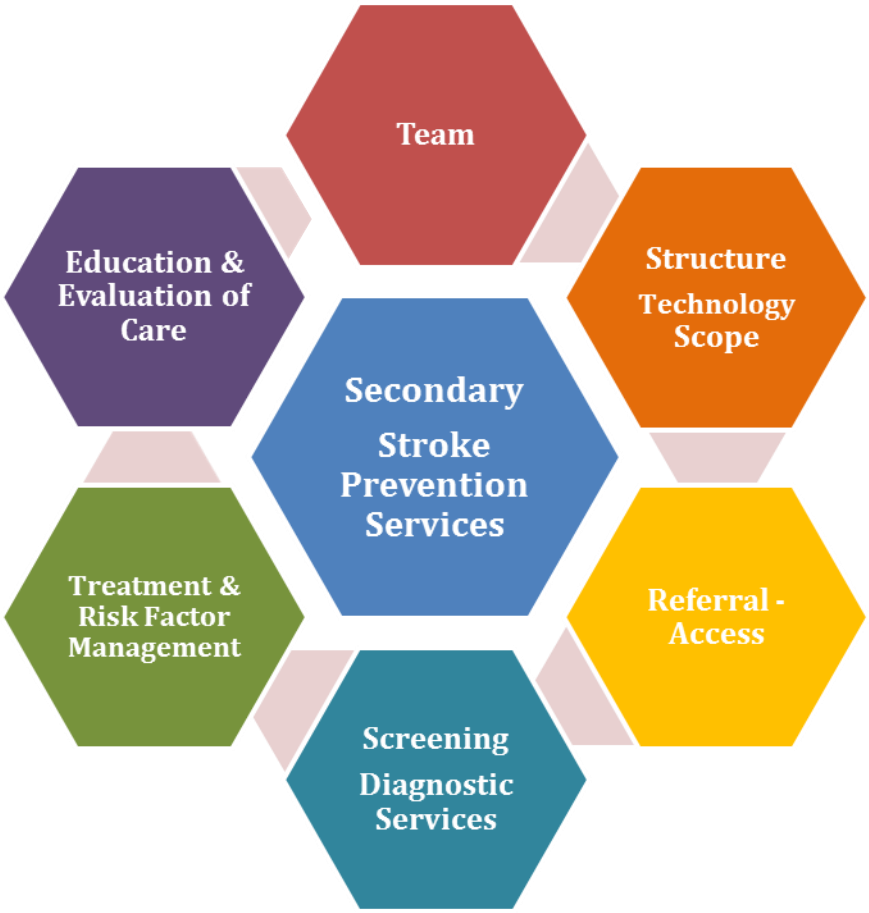

TABLE TWO: HSF CSBPR CORE ELEMENTS OF STROKE PREVENTION SERVICES

Secondary Prevention Services Core Element	Alignment with CSPBR*	Description ^
Organizational Elements of Stroke Prevention Services		
Designated Prevention Services	CSBPR-SPOS Section 1, 3	❑ The SPS is identified and acknowledged within the local/regional health system as providing stroke prevention services ❑ The SPS is conducted in a specific space within a hospital or the community, such as within the ambulatory/outpatient clinics or a physician's office ❑ SPS follows protocols for an individualized evidence-based prevention strategy for patients ❑ Emergency departments have responsibility to provide SPS to patients or ensure referrals are made to an appropriate SPS prior to patient discharge from the ED ❑ The SPS provides any combination of emergent (same day), urgent (within 24 hours); semi-urgent (within 2 weeks), less urgent (within one month) stroke prevention services ❑ SPS are accessible to stroke and TIA patients with disabilities (e.g. physical, cognitive, and perceptual) ❑ SPS make provisions to provide care to and support patients with aphasia and other communication challenges
Operation Times		❑ The SPS has set hours of operation that are communicated to all referral sources
Stroke Team Staffing	SPOS Section 1	❑ The SPS has access to an interprofessional group of stroke experts, including neurology, internal medicine, vascular surgery, neurosurgery, rehabilitation medicine, neuropsychiatry, neuropsychology, nursing, rehabilitation therapy (such as physiotherapy, occupational therapy, speech-language pathology), support services (such as stroke navigator, social worker, dietician, pharmacist, administrative), research, community liaisons ❑ Additional Experts are accessed directly within the SPS or through timely pre-arranged referral patterns outside the SPS ❑ Staff have appropriate training and education to remain current with updates to the CSBPR ❑ Staff are able to provide care to persons with aphasia and other communication challenges (such as having skills in supportive conversation)
Service Scope	SPOS Section 1	❑ SPS has a clearly defined scope of practice that is communicated to referring sources – states the range and types of services offered, such as same day urgent referrals, or less urgent services only ❑ SPS defines its role as providing at minimum a one-time assessment; or additionally assessment and short-term follow-up; long-term follow-up; collaborative care with primary care practitioner

Referral Mechanisms	SPOS Section 1 PHEDSC Sections 1, 3	❑ SPS has a standardized referral process and documentation(e.g., referral form) to access services; ❑ The SPS has a designated person coordinating referrals and scheduling appointments appropriate to degree of urgency ❑ SPS is aware of, andin communication with all potential referral sources regarding referral process and target response times ❑ All referring sources are aware of the referral process and required documentation for access to the SPS ❑ SPS follows the CSBPR target times for referrals and responds appropriately based on degree of urgency ❑ SPS monitors wait times from referral to first assessment appointment ❑ SPS provides access to patients living outside the immediate catchment for the service, to support patients living in rural and remote settings
Use of Technology	Telestroke Section 1	❑ The prevention service considerstelestroke technology to increase access to services for patients living in rural and remote settings without local access to stroke specialists
Access to Diagnostic Services	SPOS Section 1, 7, 8, 10, 11, 12 PHEDSC Sections 1, 3	❑ The SPS has timely access to relevant diagnostic services onsite (brain and vascular imaging with CT scan/MRI, CTA, carotid ultrasound, ECG, Holter monitoring, prolonged cardiac monitoring, echocardiogram, laboratory services); ❑ Agreements are in place with diagnostic departments to access services on a more urgent basis when required as per CSBPR target times (same day, 24 hour, one week etc) ❑ If services are not available on site, agreements are in place for timely access to diagnostic services within the region, or next closest facility providing such services without undue wait times outside CSBPR target times
Care Delivery Elements of Stroke Prevention Services		
Screening and Assessment	SPOS; PHEDSC; MCF	❑ SPS routinely screens patient for vascular risk factors in accordance with current evidence-based stroke guidelines ❑ The SPS has a defined set of validated screening practices that includes timing of such screens in accordance with best available evidence (such as screening tools for blood pressure, stroke severity, physical functioning, depression, cognition, atrial fibrillation, bleeding risk, lipids, diabetes, smoking, recreational drug use, other underlying cardiac issues, lifestyle behaviours, weight, fatigue, birth control and hormone replacement therapy) ❑ HSF Post-Stroke Checklist available to support screening of patients*(add Hyperlink to PSC)* ❑ Protocols in place for use of validated tools to support assessment and diagnosis ❑ Process for comprehensive assessment of vascular risk factors and potential comorbidities for patients identified as potential increased stroke risk during screening ❑ Process in place to refer patients to other specialists as required to determine or confirm presence of risk factors (such as cardiology for atrial fibrillation determination)
Diagnosis and	SPOS;	❑ Diagnosis should specify the type of stroke/TIAthe patient has

Etiology	PHEDSC; MCF	experienced (i.e., ischemic or hemorrhagic, and if later whether subarachnoid or intracranial hemorrhage) ❑ Underlying etiology should be determined and communicated to care providers and patient
Treatment	SPoS sections 3-12	❑ Develop individualized stroke prevention plan for each patient, including defining agreed upon goals of care ❑ Initiate treatment strategies for identified risk factors and clinical conditions as specified in the CSBPR ❑ Process in place for timely access to carotid revascularization services onsite or through referral to closest centre providing services, within CSBPR target treatment times (as soon as possible, within 2 weeks of index stroke/TIA event) ❑ SPS has processes in place to access rehabilitation (inpatient or community) to meet needs of patients
Follow-up Practices	SPoS all sections ToCFS Rehab	❑ On follow-up, SPS routinely monitors patients for achievement of therapeutic targets and stability within targets ❑ On follow-up, SPS routinely monitors patients for adherence to prescribed risk factor management strategies and therapies ❑ SPS re-assesses patients for ongoing physical, functional, psychological, and social changes ❑ SPS has process in place for patients and primary care providers to re-access SPS services for a patient if changes in health status, or additional consultation on prevention management is required
Communication and Continuity		❑ Communication with referring physicians, primary care practitioners and other members of the patient's circle of care to ensure continuity of care ❑ Communications should address and include information on: completed assessments and findings, diagnosis, etiology, treatment plan, prescribed/recommended therapies, additional referrals, and clarification on who is responsible for ongoing follow-up, prescription renewals, and long term management as well as referral back to SPS if needed.
Patient and Family Elements of Stroke Prevention Services		
Education, Promotion of Self-Management	ToCFS Sections 1, 2 SPoS Section 7	❑ SPS routinelyprovides verbal education to patients and families ❑ SPS provides written and electronic educational resources (such as HSF Your Stroke Journey) ❑ SPS assesses patient and family knowledge, self-management capability, and learning needs for skills and coping mechanisms (e.g., using HSF Post-Stroke Checklist) ❑ Education materials are available in a range of formats, are culturally appropriate for the catchment population, and if required available in other languages ❑ Translation services available for patients during SPS visits if required
Linkages	ToCFS Section 6	❑ Provide patients and families with links to community resources and programs to support stroke recovery and implementation of prevention strategies, such as smoking cessation programs, community dietitians, community-based exercise programs, diabetic education programs, stroke support groups ❑ Able to initiate appropriate referrals for home care support

		services, specialized equipment, and process for driving assessment as required
Outcome and Quality Elements of Stroke Prevention Services		
Quality and Accountability	All modules	❑ SPS has mechanisms in place to routinely collect data on patients, including time intervals from referral to follow-up, services provided, effectiveness/outcome of care, physical measurements (e.g., weight, blood pressure); and can capture changes over time ❑ SPS has a process for reporting data to staff, funders and patients ❑ SPS compares performance to pre-set targets and benchmarks and engages in quality improvement initiatives to achieve targets and readjust as appropriate. ❑ SPS should engage in relevant clinical research in the area of stroke prevention when possible

^ Based on literature review, Delphi-process feedback, Canadian Stroke Best Practice Recommendations, and Accreditation Canada Stroke Distinction Standards. * SPOS – Secondary Prevention of Stroke Best Practice module; PHEDSC – Pre-hospital and Emergency Department stroke guidelines module; MCF – Mood, Cognition and Fatigue CSBPR module; ToCFS – Transitions of Care Following Stroke module; Rehab – Stroke Rehabilitation module