Canadian Stroke Quality of Care Study

Consensus-Based Performance Measures Across the Continuum of Stroke Care Master List

Authors:
M. Patrice Lindsay PhD
Moira K. Kapral MD, FRCPC, MSc.
Frank L. Silver MD, FRCPC
Michael Hill, MD, FRCPC, MSc.
David J. Gladstone MD, FRCPC, PhD (Cand.)
Cheryl Jaigobin MD, FRCPC, MSc.
Jack V. Tu MD, FRCPC, PhD
Andreas Laupacis MD, FRCPC, MSc.

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Background

The primary objective of the Canadian Stroke Quality of Care Study is the development of indicators and measures of quality of care for patients with acute stroke throughout the continuum of care. Our guiding principals have been to select indicators that are relevant to stroke care delivery along the continuum; are relevant in the Canadian medical care system; are scientifically sound and valid measures of stroke care quality; and, through measurement they have the potential to lead to improvements in care delivery for stroke patients. This project fills an important need because currently available quality-of-care systems possess few objective measures specifically designed to evaluate the care of patients with acute stroke.

Several national, multidisciplinary expert panels have been and continue to be assembled to assist in selecting and defining the quality indicators. The panels consist of a diverse group of experts with unique perspectives on the quality of stroke care. Our guiding principals are to select indicators that are relevant to the Canadian medical care system, are valid measures of care quality, and through measurement have the potential to lead to improvements in care delivery for stroke patients.

This package includes a summary of the performance statements and performance measures that were identified by each of three CSQCS panels that have been convened to date: acute ischemic stroke (May 2004); Telestroke (February 2005); and, secondary stroke prevention (November 2005). A panel on stroke rehabilitation was convened in February 2006. The final results of that panel and still under review and will be added to this package when they are available. Some indicators that are currently available from eth CSORE Rehab project are included in this document.

Membership for each of the panels is available on request.

Methodology

Members of the CSQCS research team conducted detailed reviews of the literature. Systematic reviews, practice guidelines randomized controlled trials and meta-analyses related to stroke prevention used in published quality improvement projects involving the care of stroke patients were reviewed and a list of potential quality indicators was generated for each panel. The list was supplemented with additional indicators based on current practices and other performance evaluation efforts currently ongoing across the stroke continuum. External expert reviewers reviewed and commented on the lists before they were presented to each group of panellists.

The majority of the indicators identified in the CSQCS were selected based on the strength of the available evidence to support them – i.e., evidence based on randomized controlled clinical trials, and comprehensive systematic reviews. Some indicators in the enclosed list are based on new literature and may lack randomized controlled trials and systematic reviews. In these cases in particular, we relied on the expert opinion of our panel members as to whether or not to include these as “leading edge” indicators, which are considered to have the potential to dive change, and may get clinicians thinking about their importance, while we await more definitive evidence.

Definition: Stroke Continuum of Care

As a component of the work of the CSQCS, and in collaboration with the Canadian Stroke Strategy, it was recognized that a standardized approach to discussions related to the stroke continuum of care is necessary in order to ensure consistency in communication and documentation. The following stages and definitions for the stroke continuum of care have been adopted by the Canadian Stroke Strategy and the Ontario Stroke Evaluation Advisory Committee.

Stage	Definition
1. Public Awareness and Primary Prevention	Includes all activities related to these areas and involves the entire population – no specific timeframe
2. Pre-Hospital and Emergency Care	Focus on the first 12 hours for patients who have had a stroke event. Includes EMS and emergency department care
3. In-Hospital Acute Care	Includes care for stroke patients throughout acute care hospitalization, and following the hyperacute phase. The 'acute' phase is considered from 1-10 days
4. Stroke Rehabilitation	Includes both inpatient and community-based rehabilitation, and is considered the sub-acute phase from 10-90 days
5. Secondary Stroke Prevention	Ongoing management of stroke patients which includes medication management, diagnostic testing, treatment and definitive interventions. This could take place in designated SP clinics and in the community.
6. Community Care and Re-Engagement	This focuses on the client's transition from hospital back to their home/community environment. May include community case coordination, stroke rehabilitation (such as home-based or out-patient therapy services), day programs, home care support services, and referrals to community-based organizations/resources.

** Note: Times given are intended as general guidelines only, and may vary among different published guidelines.*

CSQCS I: Acute Ischemic Stroke Performance Measures [i, ii]

#	Acute Ischemic Stroke Performance Statement	Performance Measures/Definitions
Domain I:	**Evaluation for Patients with a Suspected Acute TIA or Minor Stroke: Timing**	
1.	Patients with acute stroke should be managed on a designated stroke unit.* (*See end note for definition of an cute stroke unit)	➢ Proportion of stroke patients admitted to an RSC and treated in an acute care stroke unit of a RSC at any time during hospital stay
2.	All acute stroke patients should be evaluated for tPA eligibility.	➢ Proportion of eligible ischemic stroke patients receiving IV, IV/IA or IA thrombolysis ➢ Proportion of ischemic stroke patients with a contra-indication to receiving tPA ➢ Proportion of ischemic stroke patients with a documented NIHSS score prior to tPA administration ➢ Median time from stroke symptom onset to tPA administration ➢ Proportion of patients who receive tPA therapy within one hour of hospital arrival
3.	NINDS inclusion/exclusion criteria should be applied for patient selection for thrombolysis.	
4.	tPA best-practice treatment protocol followed for tPA administration (e.g., AHA/AAN).	
5.	All eligible patients should receive tPA, and within one hour of hospital arrival. [iii]	
6.	Patients potentially eligible for tPA should have CT brain scan completed within 25 mins of ED arrival.	➢ stroke clients seen in ED of a RSC receiving first CT & MRI scan within 25 minutes of arrival in ED
7.	CT/MRI should be completed within 24 hrs for patients ineligible for tPA.	➢ stroke clients seen in ED of a RSC, admitted to hospital and receive first Ct or MRI scan within 24 hours of arrival in ED
8.	CT/MRI before hospital discharge for patients ineligible for tPA and CT/MRI not completed in first 24 hours.	➢ # stroke clients seen in ED of a RSC, admitted to hospital and receive first Ct or MRI scan prior to hospital discharge
9.	Blood glucose checked on arrival and regularly for first 24 hours	➢ Proportion of patients with blood glucose levels documented during assessment in the ED
10.	Elevated pre-prandial blood glucose should be treated with glucose lowering agents.	➢ Proportion of patients with documented elevated glucose levels started on glucose-lowering agents after hospital arrival
11.	All Patients presenting with acute stroke symptoms should have an electrocardiogram in the ED.	➢ Proportion of stroke patients who receive an ECG after arrival to the ED.
12.	Fever should be treated with antipyretics to reduce temperature to < 38° C.	➢ Proportion of patients with a documented elevated temperature during hospital stay. ➢ Proportion of these patients who are treated with antipyretics in hospital
13.	Patients with an acute ischemic stroke should be mobilized and out of bed within *24 hours of stroke symptom onset unless* contraindicated.	➢ Median time from stroke symptom onset to mobilization during hospitalization
14.	A protocol or screen for dysphagia assessment should be initiated on all acute ischemic stroke	➢ Proportion of stroke patients with documentation that dysphagia screening or assessment was

	patients before being given food or drink and results documented in patient chart	performed in hospital (can be performed by SLP, dietician or nursing, etc)
15.	Indwelling urethral catheter should be avoided in patients with acute ischemic stroke.	➢ Proportion of patients who are receive an indwelling urethral catheter during hospitalization
16.	Carotid imaging during hospitalization or documentation to have tests completed as outpatient following hospital discharge.	➢ Proportion of ischemic stroke patients with documentation of carotid imaging performed during hospital stay or booked as an outpatient.
17.	Acute Aspirin therapy initiated within 48 hours (and as soon as possible) after stroke onset unless contraindicated.	➢ Proportion of ischemic stroke patients who receive acute aspirin therapy within the first 48 hrs
18.	All acute ischemic stroke patients discharged on antithrombotic therapy unless contraindicated.	➢ Proportion of ischemic stroke patients who are discharged on antithrombotic therapy
19.	Patients with an acute ischemic stroke and non-valvular atrial fibrillation should be discharged on appropriate anticoagulants unless contraindicated.	➢ Proportion of ischemic stroke patients with atrial fibrillation who are discharged on antithrombotic therapy
20.	Patients discharged following an ischemic stroke event should be assessed for and prescribed a lipid-lowering agent if appropriate.	➢ Proportion of ischemic stroke patients who are discharged on lipid-lowering medication
21.	Patients discharged following an ischemic stroke event should be assessed for and prescribed a blood-pressure lowering agent if appropriate.	➢ Proportion of ischemic stroke patients who are discharged on antihypertensive medication
22.	Patients with acute ischemic stroke and their caregivers should receive stroke education prior to discharge from hospital and have this education documented on the chart.	➢ Proportion of patients with documentation that education on stroke was provided prior to hospital discharge ➢ *** It is important to note the type of education provided as this will vary greatly.*
23.	Patients with acute ischemic stroke should have their smoking status assessed while in hospital and documented on patient chart.	➢ Proportion of patients with documentation of patient smoking status

i. Canadian Medical Association Journal, 2005; 172(3): 363-365.
ii. Canadian Medical Association Journal On-line, 2005; 172(3):Online 1- Online 8.
iii. "Eligible patients refers to those who arrive at hospital within 3 hours of the onset of stroke symptoms and where tPA is not contra-indicated.

CSQCS IV: Telestroke Performance Measures

#	Telestroke Performance Statements	Performance Measures
Component 1: Organization of Telestroke Delivery		
1.	For remote designated hospitals without neurologists or stroke specialists on site, if CT/MRI technology is available, processes and technology should be available to support remote neurological assessment of patients with acute ischemic stroke using Telestroke	➢ Number of remote hospitals with CT/MRI technology that have Telestroke program
2.	Referring and consulting hospitals require harmonized clinical protocols to support assessment and management of acute stroke patients. Harmonized protocols should include the following: a. Inclusion and exclusion criteria for thrombolysis (based on NINDS) b. Administration of t-PA c. Blood pressure control following t-PA administration d. Neurological monitoring following t-PA administration e. Management of patients with intracerebral hemorrhage post t-PA	➢ Number of referring hospitals with harmonized protocols for the following: -inclusion and exclusion criteria for t-PA -administration of t-PA -blood pressure control prior to and after t-PA administration -neurological monitoring following t-PA administration -management of ICH post t-PA
3.	*A coordinated referral system should be accessible in all remote designated centres without stroke expertise on site, which includes:* *b) a coordinated mechanism for rapid access to remote stroke expertise 24/7* *c) a means of transmitting CT/MRI results* *d) a means of establishing 2-way videoconferencing* *e) a means for ongoing access to stroke specialist for ongoing advice regarding patient treatment and management as required*	➢ Number of hospitals with -referral system for rapid access to 24/7 access to stroke neurologist**.** -means of transfer of neuroimaging results -means of establishing 2 way videoconferencing -means for ongoing access to stroke specialist for management advice
4.	Percentage of patients who arrive at a designated referring hospital with stroke symptoms who receive access to stroke expertise through Telestroke	➢ Proportion of total stroke cases treated per at a Telestroke hospital that receive a telestroke consult
5.	Proportion of Telestroke cases where an urgent follow-up is required with the Stroke specialist due to complication or unexpected event	➢ Proportion of telestroke consults that require urgent follow-up with the stroke specialist.
6.	For Telestroke cases requiring additional consults with the stroke specialist, what is the time from the first consult to subsequent consults?	➢ Median time from first contact to subsequent contact.

Component 2: Emergent evaluation of acute ischemic stroke		
7.	Percentage of all patients who arrive within 2 hours of stroke onset at a remote site who receive a Telestroke consult	➢ Same as statement
8.	Percentage of stroke patients in a designated rural ED that receive a Telestroke consult.	➢ Same as statement
9.	# Telestroke referrals where consulting doctors were inaccessible due to: multiple conflicting calls (Telestroke and other) technical difficulties preventing video transmission.	➢ Same as statement
10.	A Telestroke consult should be initiated within 30 minutes for all potentially eligible patients who present to remote hospital with suspected acute ischemic stroke within three hours of symptom onset. (run same for % arrive within 2 hours)	➢ Median time from patient arrival in ED of a telestroke referring site to contact with Critical or equivalent. ➢ Proportion of telestroke consult patients where initiation of the consult occurs within 30 minutes of hospital arrival.
11.	The stroke specialist should be able to view the CT/MRI within 15 minutes of requesting it.	➢ Percentage of time consulting neurologists are able to view the CT remotely within 15 minutes of contact.
12.	The stroke specialist should be able to make a videoconferencing connection with the referring ER within 15 minutes of initial contact by the central referral system (with the assumption that the CT/MRI is complete) (track % of time this occurs)	➢ Percentage of time consulting neurologists are able to establish video contact with referring site within 15 minutes of initial contact.
13.	Time from patient arrival in ED to CT completion	➢ Same as statement
14.	Time from arrival in ED (or CT scan completion) to initiation of Telestroke consult;	➢ Same as statement
15.	Time from arrival in ED (or Telestroke consult) to tPA administration.	➢ Same as statement
Component 3: Management of Patients Receiving Thrombolytic Therapy		
16.	% of Telestroke consults that are treated with tPA	➢ Same as statement
17.	% of Telestroke consults that have an absolute contraindication for tPA	➢ Same as statement
18.	For all Telestroke patients who receive t-PA: a. repeat CT/MRI imaging should be done at 24-72 hours and this should be made available to the stroke specialist b. there should be mechanism for follow-up between the consulting site and the stroke specialist	➢ Number of telestroke consult patients with repeat CT/MRI ➢ Proportion of these repeat scans that are sent back to the consulting neurologist
19.	Patients should be transferred to the regional stroke centre if there is deterioration post t-PA requiring neurological or neurosurgical care not available at remote hospital	➢ Proportion of telestroke patients requiring transfer to a regional stroke centre following tPA administration

20.	Total length of stay for patients who received thrombolysis through a Telestroke consult.	➢ Median time from triage assessment in the emergency department until discharge from inpatient care. ➢
21.	Number of patients in a hospital/region receiving tPA before and after Telestroke program initiated.	➢ Same as statement
Component 4: Outcomes following a Telestroke Consultation		
22.	The Rankin and NIHSS should be recorded at discharge for all patients who received a Telestroke consult-whether or not t-PA was given	➢ Rankin scores of stroke patients who were treated at a hospital that offers telestroke services (stratified by whether or not they received a telestroke consult)
23.	Proportion of stroke patients with and without a Telestroke consult who died in the ED or during their inpatient stay following admission for stroke	➢ Same as statement
24.	Proportion of patients discharged to their place of residence prior to stroke, those transferred to rehab, and those transferred to a long-term care facility.	➢ Same as statement
25.	Proportion of stroke patients who received a Telestroke consult who experienced at least one of the following complications during their ED or inpatient stay (Both t-PA and non-tPA patients): Intracerebral hemorrhage or other hemorrhage Recurrent stroke Systemic complications including UTI, DVT, pneumonia	➢ Same as statement
26.	Satisfaction survey for ED nurses on process and technology	➢ *Measures for this statement will align with a survey tool once developed and implemented*

CSQCS V: Secondary Stroke Prevention Performance Measures

#	SPC Performance Statement	Performance Measures
Domain I:	**Evaluation for Patients with a Suspected Acute TIA or Minor Stroke: Timing**	
1.	Public awareness programs should be present in communities to increase the public's knowledge of stroke symptoms so that they seek medical attention immediately.	a. Proportion of population that can name 2 or more stroke symptoms b. Median time from stroke event to presentation at an ED c. Proportion of patients who seek medical attention within 2.5 and 3 hours from LSN time
2.	Patients with suspected TIA/stroke should be assessed according to risk stratification and referred for neurological assessment within the specified time frames for each risk level.	a. Time from symptom onset to first medical assessment b. Location of first assessment stratified by urgent/semi
Domain II:	**Evaluation for Patients with a Suspected Acute TIA or Minor Stroke: Diagnostic Evaluation**	
3.	Patients with suspected TIA or stroke should receive referral to a designated stroke prevention clinic or to a physician with expertise in stroke assessment and management.	a. Number of patients referred to a SPC or ED from community vs number of direct visits to an ED b. Referrals from within acute care facility vs referrals from community
4.	For patients with a suspected acute TIA or minor stroke, the initial diagnostic investigation should include brain imaging (CT or MRI): Emergent – 1 day; Urgent – within 1 week; semi-urgent – within available resources.	a. Number of pts who receive a CT/MRI within 48 hrs/7 days from symptom onset b. Time from symptom onset to first CT/MRI c. Time from first assessment to CT/MRI
5.	For patients with carotid-territory ischemic symptoms, non-invasive imaging of the carotid arteries should be performed as soon as possible. Based on expert opinion, emergent cases should be performed within 24 hrs, urgent cases within 7 days, and and semi-urgent preferably within 30 days of symptom onset.	a. Number of patients with carotid territory disease who receive carotid imaging within triage guideline timeframe from TIA/stroke onset b. Time from TIA/stroke onset to carotid imaging c. Time from first assessment to carotid imaging
6.	For patients with a suspected acute TIA or minor stroke, the initial diagnostic investigation should include a 12-lead ECG.	a. Number of pts who receive a 12-lead ECG as part of initial assessment
7.	Etiological diagnosis should be determined and recorded at some point during secondary prevention assessment and follow-up	a. Percentage of secondary prevention patients with etiological diagnosis recorded
8.	Patients discharged from hospital following stroke should receive a referral to a stroke prevention clinic	a. Percentage of inpatients who receive a stroke prevention clinic referral b. Percentage of patients with stroke/TIA discharged directly from the ED who

		receive a stroke prevention clinic referral. c. # of external referrals made for patients seen at a stroke prevention clinic
9.	Patients followed in a stroke prevention clinic should be monitored for new stroke/TIA events or death while under the SPC care.	a. # of new stroke/TIA events, AMI or death while under the SPC care.
Domain III: <u>Carotid Revascularization</u>		
10.	Carotid endarterectomy is recommended for recently symptomatic patients (within previous 6 months) with severe (70 to 99%) carotid stenosis.	a. Number of pts diagnosed with stroke and severe carotid stenosis b. Number of these patients who undergo CE c. Time from stroke symptom onset to CE surgery (mean and median)
11.	Carotid endarterectomy is recommended for selected patients with moderate (51 to 69%) symptomatic stenosis. These patients should be evaluated by a physician with expertise in stroke management.	a. Number of pts diagnosed with stroke and moderate carotid stenosis b. Number of these patients who undergo CE c. Time from stroke symptom onset to CE surgery (mean and median)
12.	Carotid endarterectomy is not recommended for patients with mild (<50%) stenosis.	a. Number of pts diagnosed with stroke and mild carotid stenosis b. Number of these patients who undergo CE c. Time from stroke symptom onset to CE surgery (mean and median)
13.	The anticipated perioperative stroke and death rate should be <6%.	a. Number of stroke pts who undergo CEA (stratified by carotid severity) b. Proportion of CEA patients who experience peri-operative stroke or death c. The 30-day post-CEA mortality and stroke rates. d. Stroke and death rate at one year post index event for patients who underwent CEA and those who did not.
14.	Patients with an acute TIA or non-disabling stroke who are candidates for carotid endarterectomy and are neurologically stable should be referred for surgery without delay, and surgery should be performed preferably within 2 weeks of the last ischemic event.	a. Median time from stroke/TIA onset to neuro or vascular surgery consultation b. Median time from stroke/TIA onset to carotid reperfusion c. Proportion of patients who undergo CEA d. Proportion of patients who undergo CEA within 2 weeks, between 2 weeks and 3 months, and between 3 – 6 months of stroke onset e. Proportion of patients who wait > 6 months for CEA or who are cancelled due to long wait times.
Domain IV: <u>Pharmacotherapy</u>		
15.	Patients with minor stroke/TIA should receive an antiplatelet agent within 48 hours of stroke onset unless contraindicated. (Patients who receive rt-PA should not receive an antiplatelet agent in the first 24 hours).	a. Proportion of stroke/TIA patients started on antiplatelet therapy within first 48 hrs of stroke symptom onset.

16.	Patients with non-cardioembolic stroke/TIA should be treated with antiplatelet therapy such as aspirin, clopidogrel (Plavix®) or ASA/extended-release dipyridamole (Aggrenox®), unless contraindicated	a. Proportion of stroke/TIA patients prescribed (not prescribed) antithrombotic therapy on discharge from acute care. b. Proportion of stroke/TIA patients prescribed antithrombotic therapy on discharge from SPC care. c. Proportion of patients on ASA alone, Plavix, Aggrenox, combination
17.	Patients with stroke/TIA and atrial fibrillation should be treated with warfarin unless contraindicated to achieve a target INR of 2.0 – 3.0,. Patients for whom warfarin is contraindicated should be treated with aspirin as an alternative	a. Proportion of stroke/TIA patients with atrial fibrillation prescribed anticoagulant therapy on discharge from acute care. b. Proportion of stroke/TIA patients with atrial fib. prescribed anticoagulant therapy at an SPC. c. Proportion of patients on ASA and Coumadin d. Proportion of patients on warfarin with INR in therapeutic range.
18.	Patients who have had a stroke/TIA should be assessed for appropriateness of prescribing a lipid-lowering agent (statin or non-statin). i. lipid levels should be checked on initial assessment ii. statins should be prescribed for: a. all patients regardless of lipid levels to achieve target b. patients with hyperlipidemia to achieve a target LDL levels as per current Canadian guidelines.	a. Proportion of stroke/TIA patients prescribed statin therapy on discharge from acute care. b. Proportion of stroke/TIA patients prescribed statin therapy through an SPC. c. Proportion of patients with LDL < 2.5 mmol/L; < 1.8 mmol/L
19.	Blood pressure lowing agents should be prescribed for patients with elevated blood pressure in accordance with CHEP guidelines (2004). (Less than 140/90 mmHg; 130/80 mmHg for diabetics; 125/75 mmHg for those with renal dysfunction and >1 gm/day microalbumuria).	a. Proportion of stroke/TIA patients prescribed blood-pressure lowering agents on discharge from acute care. b. Proportion of stroke/TIA patients prescribed blood-pressure lowering agents through an SPC.
Domain V: <u>Risk Factor Assessment & Management</u>		
20.	Smoking status should be assessed and smoking cessation counselling should be initiated or reinforced.	a. Proportion of stroke/TIA patients documented as active smokers b. Proportion of these patients who have documentation to indicate that smoking cessation counselling was initiated c. Proportion of patients who report never smoking d. Proportion of patients who are reformed smokers e. Proportion of smokers enrolled in smoking cessation programs

21.	During assessment for secondary stroke prevention, patients should be assessed for hyperglycemia and the presence of diabetes mellitus following the current CDA guidelines.	a. Proportion of stroke/TIA patients assessed for diabetes status, and results documented b. Proportion of patients with previous NIDDM c. Proportion of patients with NEW diagnosis of NIDDM d. Proportion of patients with documentation of confirmed status as a diabetic who receive treatment with glucose-lowering agents e. Proportion of patients with optimal diabetes control per the CDA guidelines
22.	All patients followed in a stroke prevention clinic should be screened for risk factors of dietary patterns and exercise habits.	a. Waist-hip ratio measurements on all patients
Domain VI: <u>Patient & Family Care</u>		
23.	Stroke patients and their caregivers should receive education about stroke prevention (risk factor modification, and/or other topics).	a. Proportion of stroke/TIA patients with documentation to indicate that education was provided related to stroke/TIA care.
24.	Patients should be screened for ongoing rehabilitation needs during initial/ongoing assessments for secondary stroke prevention and results documented.	a. Proportion of stroke/TIA patients with documentation to indicate assessment for stroke rehab needs was performed b. Number of patient referrals for ongoing rehabilitation care
25.	Patients should be screened for ongoing community support needs during initial/ongoing assessments for secondary stroke prevention and referred to appropriate resources.	a. Proportion of stroke/TIA patients with documentation to indicate assessment for home support needs was performed b. Number of patient referrals for ongoing rehabilitation care.
26.	Patients with stroke should be screened for the presence of: > post-stroke depression > cognitive impairment > speck disturbances > memory loss, and the results documented and appropriate referrals initiated as necessary.	a. Proportion of stroke/TIA patients with documentation to indicate assessment for depression was performed – informally or using a formal assessment tool b. Proportion of stroke/TIA patients with referrals made for mood changes or cognitive impairments c. Time from referral to specialized assessment
27.	Patients with stroke should be assessed/screened for their fitness to drive post-stroke/TIA	a. Proportion of stroke/TIA patients with documentation to indicate assessment for fitness to drive and related patient counselling was performed b. # patients referred for driving assessment by OT

Canadian Stroke Strategy: Quality of Care Core Indicators

Recommended Core Indicators of Stroke Care Impact	
1.0	**Overall Stroke Incidence**
1.1	The incidence of stroke in each province by stroke type.
1.2	The stroke mortality rates across provinces and territories, including in-hospital, 30 – day and one-year.
1.3	The proportion of patients in the population who have identified risk factors for stroke including: hypertension, obesity, smoking history, low physical activity, hyperlipidemia, diabetes, atrial fibrillation
2.0	**Public Awareness and Primary Stroke Prevention**
2.1	Percentage of the population aware of 2 or more signs of stroke
3.0	**Pre-Hospital and Emergency Stroke Care**
3.1	Proportion of acute stroke patients who arrive at hospital within 2.5 hours of stroke symptom onset for all stroke types
3.2	Proportion of all ischemic stroke patients who receive acute thrombolytic therapy (tPA).
3.3	Proportion of all thrombolysed ischemic stroke patients who receive acute thrombolytic therapy (tPA) within one hour of hospital arrival.
4.0	**In-Hospital Stroke Care**
4.1	The proportion of all acute stroke patients who are managed on a designated acute stroke unit at any point during hospitalization.
4.2	Proportion of acute ischemic stroke patients discharged on antithrombotic therapy unless contraindicated.
4.3	Proportion of acute stroke patients with atrial fibrillation who are treated with anti-coagulant therapy unless contraindicated.
4.4	Proportion of stroke patients who receive a brain CT/MRI prior to hospital discharge.
4.5	Percentage of patients discharged to their home or place of residence following an inpatient admission for stroke.
5.0	**Stroke Rehabilitation**
5.1	Proportion of acute stroke patients discharged from acute care to inpatient rehabilitation.
5.2	Wait times for inpatient and outpatient stroke rehab services.
5.3	Percentage of patients discharged home or to place of residence following an inpatient rehabilitation admission for stroke.
6.0	**Secondary Stroke Prevention**
6.1	Proportion of patients with TIA who are discharged from the emergency department who are seen within 24 or 72 hours in a designated hospital-based or community secondary prevention clinic.
6.2	Median wait time from stroke symptom onset to carotid endartarectomy surgery
7.0	**Community Stroke Care and Re-Engagement**
7.1	Proportion of acute stroke patients discharged from acute care to a long-term care home (who were not previously a resident of a LTC home).
7.2	Proportion of patients who are discharged from acute care who receive a referral for home care/community supportive services.