

APPENDIX 2

CORE ACUTE STROKE CASE DEFINITIONS

A ROAD MAP FOR QUALITY STROKE CARE

Evaluation of stroke care delivery is an essential component of any organized stroke care system, no matter how big or small. Considerations for evaluation should be made early on in the planning process so that mechanisms for data collection can be established as part of the stroke services and guideline implementation plan.

As part of the WSO Global Stroke Care Guidelines and Action Plan, International Classification of Diseases codes were selected to identify appropriate stroke cases to include in a stroke performance measurement strategy (see Table below). A core set of performance measures were then identified in tandem to the process to select core best practice recommendations. These key stroke quality indicators have been provided in this roadmap to increase focus, consistency and standardization of stroke care measurement across jurisdictions. In time it is hoped this information could be used to develop global benchmarks for delivery of stroke services at the minimum, essential and advanced levels of care, and help drive global stroke care improvement efforts through informed decision-making and system planning.

To develop effective local stroke care measurement strategy quality indicators, several elements should be addressed:

- Define stroke case definitions
- Define inclusion and exclusion criteria for target patient population of interest (stroke type, age, gender, setting, phase of care etc)
- Identify key stroke quality indicators from WSO list below, and add additional indicators to sufficiently cover scope of services being delivered and accountabilities
- Identify required data elements and method to ensure all required elements are collected to calculate identified quality indicators
- Develop data collection repository and methodology (who will record data, when, where, how and on which patients)
- Determine time frames for data collection, analysis and reporting
- Determine report structure and format (online dashboard report cards should be considered where possible)
- Establish dissemination and communication plan of results of data analysis to all levels of providers, decision-makers and patient population

At the local level, stroke care providers and/or stroke teams should hold discussions with local health data collection and reporting staff and come to agreement on how all stroke cases will be coded to ensure optimal data quality, completeness and accuracy.

Quality Definitions

Standards of care: are the bases of comparison in measuring or judging the capacity, quality, content, or extent of a particular object of activity. In the absence of evidence, standards may be informed by expert opinion. Standards can be considered as the basic requirements of a healthcare profession and are usually defined within policies, procedures, and standards of practice documents. Standards of care specify the minimum acceptable characteristics of what constitutes quality care.

They specify appropriate management based on strong scientific evidence and collaboration between healthcare professionals involved in the treatment of a given condition. Standards of care describe the level at which the average, prudent provider in a given community should practice and how similarly qualified practitioners would have managed the patient's care under the same or similar circumstances.

Quality Indicator: An objective measure of healthcare quality that has been developed to support self-assessment and quality improvement at the provider, hospital or systems level (ACC/AHA Performance Measures task force).

Benchmark: is the performance level which is recognised as the standard of excellence for a specific process of care or outcome and is used for comparisons across groups. Benchmarks provide standard values by which something can be measured, compared, or judged. Benchmarks can be identified through several techniques, including: validated research and statistical methods; identification of top performers; and the past performance of one's own organization.

Target: is the level of performance that an organization aims to achieve within a specified period of time. It is usually a value between the current actual level of performance and the benchmark, but could be equal to or greater than the benchmark. Target values take into account the resources and constraints with respect to meeting the standard of care.

Threshold: is the minimal acceptable level of performance. Performance rates that fall short of the threshold are considered poor performance and should result in corrective action.

*** Performance rates outside the threshold - either above or below as defined by the specific measure - are considered poor performance*

A ROAD MAP FOR QUALITY STROKE CARE

Acute Stroke Case Identification Codes, Update 2016*

Group	Acute Stroke Main Category	ICD-9	ICD-10 codes (v2015)
<p>'Acute Stroke' – Updated Case Selection Definitions, August 2016</p> <ul style="list-style-type: none"> all stroke categories listed below that have been submitted as a 'Most Responsible Diagnosis' in DAD or as Main Problem in NACRS are valid for inclusion in acute stroke cohorts for calculation of the HSF Stroke Key Quality Indicators, unless otherwise indicated ⁱ <p>inclusion of stroke codes submitted to the DAD as Diagnosis Type1, Type 2, Type 3, Type W, X or Y or to NACRS as Other Problem will be dependent on the scope, purpose and target of the performance measures or analysis – in these cases, the analysis specifications should be clearly documented and communicated, to enable appropriate generalizability and comparability.</p>			
a.	Subarachnoid Hemorrhage	430	I60 (including all sub-codes)
b.	Intracerebral Hemorrhage	431	I61 (including all sub-codes)
c.	Cerebral Infarction (Ischemic Stroke)	433	I63 (including all sub-codes)
d.	Stroke, not specified as hemorrhage or infarction	434	I64 ⁱⁱⁱ
e.	Central Retinal Artery Occlusions (Ischemic Stroke)	436	H34.1
f.	Transient Cerebral Ischemic Attacks and Related Syndromes (Ischemic Stroke)	435	G45 ^{iv} (excluding sub-code G45.4)
g.	Transient Retinal Artery Occlusions (Ischemic Stroke)		H34.0
<p>The following codes for <u>cerebral venous thrombosis etiology</u> may be included or excluded from the stroke case selection as part of acute stroke definitions <i>based on the purpose and population of interest for the analysis</i>.</p>			
i.	Cerebral Infarction due to Cerebral Venous Thrombosis, Nonpyogenic		I63.6
j.	Nonpyogenic Thrombosis of Intracranial Venous System	437.6	I67.6
k.	Intracranial Phlebitis and Thrombophlebitis	325	G08
<p>The following Z-codes (DAD) may be assigned as Most Responsible Diagnosis (MRDx, DAD) and should be included as part of acute stroke definitions when there is an accompanying acute stroke diagnostic code is assigned as an 'Other Diagnosis' with a Diagnosis Type 1, Type 2, Type 3 or Type W, X or Y.</p>			
l.	Care Involving use of Rehabilitation Procedures	-	Z50 (excluding sub-codes Z50.2, Z50.3, Z50.4)
m.	Other Medical Care: Palliative Care	-	Z51.5 ^{vi, vii}
n.	Convalescence Following other Treatment	-	Z54.8
o.	Convalescence Following Unspecified Treatment	-	Z54.9

A ROAD MAP FOR QUALITY STROKE CARE

NOTES regarding acute stroke code selection:

i	For most performance measures, the primary focus is on patients who experience a hemorrhagic or ischemic stroke or TIA while in the community and arrive at hospital as a result of their stroke. There are occasions when a patient already in hospital for another medical reason experience a stroke during hospitalization. Inclusion or exclusion of in-hospital stroke cases will depend on the purpose of the measure and target population
ii	Conditions in category I62 Other non-traumatic intracranial hemorrhage are not considered an acute stroke and therefore should not be included for any acute stroke case definition, cohort identification or acute stroke data analysis.
iii	<p>I64 should not be used routinely for coding stroke cases. I64 should only be recorded when:</p> <ul style="list-style-type: none"> • Diagnostic imaging has not yet been performed (patient dies or is transferred) • Diagnostic imaging is inconclusive • Patient is transferred in and the transfer information does not indicate the type of stroke <p>Every effort should be made by clinicians to determine stroke type and document the type of stroke as hemorrhagic or ischemic for health record coders. Health record coders should review the body of the discharge summary, consultation reports and the conclusion on relevant diagnostic imaging reports for specificity as to type of stroke.</p>
iv	When calculating stroke mortality rates , TIA should be excluded, or reported as a separate category and not combined with acute stroke codes.
v	Special cases – Rehabilitation: When a patient is treated for an acute stroke including rehabilitative care, there are circumstances where the ICD10 Z-code for rehabilitative care may meet the definition of most responsible diagnosis, depending on local coding practices. These cases should be included as part of an acute stroke cohort where appropriate. Stroke teams should hold discussions with local health data reporting groups and come to agreement on how all stroke coding cases will be handles to ensure optimal data quality, completeness and accuracy.
vi	Special cases – Palliative Care: Where acute stroke patients have a component of palliative care during their episode of care and in the same facility due to the severity of stroke and/or other clinical characteristics, ICD10 code Z51.5 Palliative care may be recorded if the patient meets the definition of palliation locally. These cases should be included as part of an acute stroke cohort where appropriate.
vi	<p>Mortality rates for patients determined to be palliative care and receiving palliative care services are higher than the overall mortality for non-palliative care stroke cases. Therefore:</p> <ul style="list-style-type: none"> • When calculating overall stroke mortality rates, cases where Z51.5 Palliative Care is the MRDx and stroke is listed as a secondary diagnosis, inclusion as part of a stroke cohort will be dependent on the scope and purpose of the planned analysis. <p>When calculating stroke mortality rates for patients who have received active stroke care processes as a measure of effectiveness of care delivery, cases where Z51.5 Palliative care is the MRDx and stroke is assigned an additional Diagnosis code and did not receive active acute stroke care or treatment, should be EXCLUDED (such as very severe stroke patients admitted directly to palliative care without active acute treatment).</p>

Sources:

Heart and Stroke Foundation of Canada Quality of Stroke Care in Canada Stroke Key Quality Indicator and Case Definitions Manual 2016 (www.strokebestpractices.ca); and, Valery Feigin et al Global Burden of Disease stroke case definitions (Lancet 2015;385(9963):117-171. Online supplement page 280).

A ROAD MAP FOR QUALITY STROKE CARE

Select Stroke Related Investigation Codes*

Stroke Investigations	Intervention Codes for ICD9	Intervention Code (v2015) (for ICD10)
CT Scan	87.03	3AN20 Brain 3ER20 Head
MRI	88.91	3AN40 Brain 3ER40 Head
Chest X-ray	87.39, 87.44, 87.49	3GY10
ECG- 12 Lead	89.52	2HZ24.JA-KE
Prolonged Cardiac Monitoring (with Loop recorder or implantable cardiac monitor)	-	2.HZ.24.GP-XJ (Cardiac Catheterization) 2.HZ.24.HA-XJ (Subcutaneous)
Holter monitor		2.HZ.24.JA-KH
Carotid Doppler	88.71	3JE30
Leg Doppler	88.77	3KG30
Echocardiogram (2D)	88.72	3IP30
Echocardiogram (TEE)		
tPA Administration	99.10	1ZZ35HAC1 (IV) 1JW35HAC1 (IA)
Carotid Endarterectomy Surgical Procedure	50.12	1.JE.57.LA

A ROAD MAP FOR QUALITY STROKE CARE

Acute Stroke Case Identification Codes, Update 2016*

Stroke Related Investigations or Procedures	Intervention Code Title Description	Intervention Code (v2015) (for ICD10)
Alteplase (tPA) Administration		
Alteplase (tPA) Administration - Intravenous	Pharmacotherapy, total body, percutaneous approach [intramuscular, intravenous, subcutaneous, intradermal], using thrombolytic agent.	1.ZZ.35.HA.1C
Alteplase (tPA) Administration - Intra-arterial	Pharmacotherapy (local), intracranial vessels percutaneous <u>injection</u> approach using thrombolytic agent	1.JW.35.HA.1C
<p><i>The following subset of investigations and procedures should be consistently applied for acute stroke patients undergoing acute endovascular procedures for large vessel occlusions. Significant coding variations have been found for this relatively new procedure. If your organization provides acute endovascular procedures for large vessel occlusions, you should develop a policy or best practice protocol for consistent coding of all procedures using the most appropriate code among those provided below.*</i></p>		
Cerebral Endovascular Thrombectomy (Clot Retrieval)*	Extraction, carotid artery using percutaneous transluminal approach. Includes mechanical thrombectomy.	1.JE.57-GQ-^^
	Extraction, intracranial vessels using percutaneous transluminal approach and device NEC. Includes mechanical thrombectomy.	1.JW.57.GP-GX
	Extraction, other vessels of head, neck and spine NEC, using percutaneous transluminal approach and device NEC	1.JX. 57.GP-GX
Cerebral Endovascular Dilation	Dilation, intracranial vessels using percutaneous transluminal approach and device NEC. Excludes: that with extraction (see 1.JW.57.GP-GX)	1.JW.50.GP-^^
	Dilation, other vessels of head, neck and spine NEC using percutaneous transluminal approach Excludes: that with extraction (see 1.JX.57.GP-GX)	1.JX.50.GP-^^
	Dilation, carotid artery using percutaneous transluminal arterial approach. Excludes: that with extraction (e.g. endarterectomy) (see 1.JE.57.GQ-^^)	1.JE.50.GQ-^^
Carotid Endovascular Dilation and Stenting	Dilation, carotid artery using percutaneous transluminal approach balloon dilator with (endovascular) stent (insertion)	1.JE.50.GQ-OA

Sources:

Heart and Stroke Foundation of Canada Quality of Stroke Care in Canada Stroke Key Quality Indicator and Case Definitions Manual 2016 (www.strokebestpractices.ca)

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