



**AHRQ Quality Indicators™ (AHRQ QI™)
ICD-9-CM and ICD-10-CM/PCS
Specification Enhanced Version 5.0**

**Inpatient Quality Indicators #17 (IQI #17)
Acute Stroke Mortality Rate**

**October 2015
Provider-Level Indicator
Type of Score: Rate**

Prepared by:

Agency for Healthcare Research and Quality
U.S. Department of Health and Human Services
540 Gaither Road
Rockville, MD 20850
www.qualityindicators.ahrq.gov

IQI #17 Acute Stroke Mortality Rate

DESCRIPTION
<p>In-hospital deaths per 1,000 hospital discharges with acute stroke as a principal diagnosis for patients ages 18 years and older. Includes metrics for discharges grouped by type of stroke. Excludes obstetric discharges and transfers to another hospital.</p> <p><i>[NOTE: The software provides the rate per hospital discharge. However, common practice reports the measure as per 1,000 discharges. The user must multiply the rate obtained from the software by 1,000 to report in-hospital deaths per 1,000 hospital discharges.]</i></p>
Stratification of Indicator
<p>The indicator is stratified into three groups by the type of stroke:</p> <p>Cases are assigned to strata according to a hierarchy based on mortality, with cases being assigned to the stratum with the highest mortality for which the case qualifies. In the case of Stroke Mortality the current hierarchy is as follows:</p> <p>Strata hierarchy (listed from highest mortality to lowest mortality):</p> <ol style="list-style-type: none"> 1. Stratum B (Intracerebral hemorrhage) 2. Stratum A (Subarachnoid hemorrhage) 3. Stratum C (Ischemic stroke)

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NUMERATOR

Overall:

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum A (Subarachnoid hemorrhage):

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum B (Intracerebral hemorrhage) :

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum C (Ischemic stroke):

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator

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NUMERATOR EXCLUSIONS
<i>Not Applicable</i>

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DENOMINATOR OVERALL			
Overall:			
Discharges, for patients ages 18 years and older, with a principal ICD-9-CM or ICD-10-CM diagnosis code for subarachnoid hemorrhage or a principal ICD-9-CM or ICD-10-CM diagnosis code for intracerebral hemorrhage or a principal ICD-9-CM or ICD-10-CM diagnosis code for ischemic stroke.			
<i>Subarachnoid hemorrhage diagnosis codes: (MRTCV2A)</i>			
ICD-9-CM	Description	ICD-10-CM	Description
430	SUBARACHNOID HEMORRHAGE	I6000	Nontraumatic subarachnoid hemorrhage from unspecified carotid siphon and bifurcation
		I6001	Nontraumatic subarachnoid hemorrhage from right carotid siphon and bifurcation
		I6002	Nontraumatic subarachnoid hemorrhage from left carotid siphon and bifurcation
		I6010	Nontraumatic subarachnoid hemorrhage from unspecified middle cerebral artery
		I6011	Nontraumatic subarachnoid hemorrhage from right middle cerebral artery
		I6012	Nontraumatic subarachnoid hemorrhage from left middle cerebral artery
		I6020	Nontraumatic subarachnoid hemorrhage from unspecified anterior communicating artery
		I6021	Nontraumatic subarachnoid hemorrhage from right anterior communicating artery
		I6022	Nontraumatic subarachnoid hemorrhage from left anterior communicating artery
		I6030	Nontraumatic subarachnoid hemorrhage from unspecified posterior communicating artery

I6031	Nontraumatic subarachnoid hemorrhage from right posterior communicating artery
I6032	Nontraumatic subarachnoid hemorrhage from left posterior communicating artery
I604	Nontraumatic subarachnoid hemorrhage from basilar artery
I6050	Nontraumatic subarachnoid hemorrhage from unspecified vertebral artery
I6051	Nontraumatic subarachnoid hemorrhage from right vertebral artery
I6052	Nontraumatic subarachnoid hemorrhage from left vertebral artery
I606	Nontraumatic subarachnoid hemorrhage from other intracranial arteries
I607	Nontraumatic subarachnoid hemorrhage from unspecified intracranial artery
I608	Other nontraumatic subarachnoid hemorrhage
I609	Nontraumatic subarachnoid hemorrhage, unspecified

Intracerebral hemorrhage diagnosis codes: (MRTCV3D)

ICD-9-CM	Description	ICD-10-CM	Description
431	INTRACEREBRAL HEMORRHAGE	I610	Nontraumatic intracerebral hemorrhage in hemisphere, subcortical
4320	NONTRAUM EXTRADURAL HEM	I611	Nontraumatic intracerebral hemorrhage in hemisphere, cortical
4321	SUBDURAL HEMORRHAGE	I612	Nontraumatic intracerebral hemorrhage in hemisphere, unspecified
4329	INTRACRANIAL HEMORR NOS	I613	Nontraumatic intracerebral hemorrhage in brain stem
		I614	Nontraumatic intracerebral hemorrhage in cerebellum
		I615	Nontraumatic intracerebral hemorrhage, intraventricular

I616	Nontraumatic intracerebral hemorrhage, multiple localized
I618	Other nontraumatic intracerebral hemorrhage
I619	Nontraumatic intracerebral hemorrhage, unspecified
I6200	Nontraumatic subdural hemorrhage, unspecified
I6201	Nontraumatic acute subdural hemorrhage
I6202	Nontraumatic subacute subdural hemorrhage
I6203	Nontraumatic chronic subdural hemorrhage
I621	Nontraumatic extradural hemorrhage
I629	Nontraumatic intracranial hemorrhage, unspecified

<i>Ischemic stroke diagnosis codes: (MRTCV4D)</i>			
ICD-9-CM	Description	ICD-10-CM	Description

ICD-9-CM	Description	ICD-10-CM	Description
43301	BASI ART OCCL W/ INFRCT	I6300	Cerebral infarction due to thrombosis of unspecified precerebral artery
43311	CAROTD OCCL W/ INFRCT	I63011	Cerebral infarction due to thrombosis of right vertebral artery
43321	VERTB ART OCCL W/ INFRCT	I63012	Cerebral infarction due to thrombosis of left vertebral artery
43331	MULT PRECER OCCL W/ INFRCT	I63019	Cerebral infarction due to thrombosis of unspecified vertebral artery
43381	PRECER OCCL NEC W/ INFRCT	I6302	Cerebral infarction due to thrombosis of basilar artery
43391	PRECER OCCL NOS W/ INFRCT	I63031	Cerebral infarction due to thrombosis of right carotid artery
43401	CERE THROMBOSIS W/ INFRCT	I63032	Cerebral infarction due to thrombosis of left carotid artery
43411	CERE EMBOLISM W/ INFRCT	I63039	Cerebral infarction due to thrombosis of unspecified carotid artery
43491	CEREB OCCL NOS W/ INFRCT	I6309	Cerebral infarction due to thrombosis of other precerebral artery
		I6310	Cerebral infarction due to embolism of unspecified precerebral artery

I63111	Cerebral infarction due to embolism of right vertebral artery
I63112	Cerebral infarction due to embolism of left vertebral artery
I63119	Cerebral infarction due to embolism of unspecified vertebral artery
I6312	Cerebral infarction due to embolism of basilar artery
I63131	Cerebral infarction due to embolism of right carotid artery
I63132	Cerebral infarction due to embolism of left carotid artery
I63139	Cerebral infarction due to embolism of unspecified carotid artery
I6319	Cerebral infarction due to embolism of other precerebral artery
I6320	Cerebral infarction due to unspecified occlusion or stenosis of unspecified precerebral arteries
I63211	Cerebral infarction due to unspecified occlusion or stenosis of right vertebral arteries
I63212	Cerebral infarction due to unspecified occlusion or stenosis of left vertebral arteries
I63219	Cerebral infarction due to unspecified occlusion or stenosis of unspecified vertebral arteries
I6322	Cerebral infarction due to unspecified occlusion or stenosis of basilar arteries
I63231	Cerebral infarction due to unspecified occlusion or stenosis of right carotid arteries
I63232	Cerebral infarction due to unspecified occlusion or stenosis of left carotid arteries
I63239	Cerebral infarction due to unspecified occlusion or stenosis of unspecified carotid arteries

I6329	Cerebral infarction due to unspecified occlusion or stenosis of other precerebral arteries
I6330	Cerebral infarction due to thrombosis of unspecified cerebral artery
I63311	Cerebral infarction due to thrombosis of right middle cerebral artery
I63312	Cerebral infarction due to thrombosis of left middle cerebral artery
I63319	Cerebral infarction due to thrombosis of unspecified middle cerebral artery
I63321	Cerebral infarction due to thrombosis of right anterior cerebral artery
I63322	Cerebral infarction due to thrombosis of left anterior cerebral artery
I63329	Cerebral infarction due to thrombosis of unspecified anterior cerebral artery
I63331	Cerebral infarction due to thrombosis of right posterior cerebral artery
I63332	Cerebral infarction due to thrombosis of left posterior cerebral artery
I63339	Cerebral infarction due to thrombosis of unspecified posterior cerebral artery
I63341	Cerebral infarction due to thrombosis of right cerebellar artery
I63342	Cerebral infarction due to thrombosis of left cerebellar artery
I63349	Cerebral infarction due to thrombosis of unspecified cerebellar artery
I6339	Cerebral infarction due to thrombosis of other cerebral artery
I6340	Cerebral infarction due to embolism of unspecified cerebral artery

I63411	Cerebral infarction due to embolism of right middle cerebral artery
I63412	Cerebral infarction due to embolism of left middle cerebral artery
I63419	Cerebral infarction due to embolism of unspecified middle cerebral artery
I63421	Cerebral infarction due to embolism of right anterior cerebral artery
I63422	Cerebral infarction due to embolism of left anterior cerebral artery
I63429	Cerebral infarction due to embolism of unspecified anterior cerebral artery
I63431	Cerebral infarction due to embolism of right posterior cerebral artery
I63432	Cerebral infarction due to embolism of left posterior cerebral artery
I63439	Cerebral infarction due to embolism of unspecified posterior cerebral artery
I63441	Cerebral infarction due to embolism of right cerebellar artery
I63442	Cerebral infarction due to embolism of left cerebellar artery
I63449	Cerebral infarction due to embolism of unspecified cerebellar artery
I6349	Cerebral infarction due to embolism of other cerebral artery
I6350	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebral artery
I63511	Cerebral infarction due to unspecified occlusion or stenosis of right middle cerebral artery
I63512	Cerebral infarction due to unspecified occlusion or stenosis of left middle cerebral artery

I63519	Cerebral infarction due to unspecified occlusion or stenosis of unspecified middle cerebral artery
I63521	Cerebral infarction due to unspecified occlusion or stenosis of right anterior cerebral artery
I63522	Cerebral infarction due to unspecified occlusion or stenosis of left anterior cerebral artery
I63529	Cerebral infarction due to unspecified occlusion or stenosis of unspecified anterior cerebral artery
I63531	Cerebral infarction due to unspecified occlusion or stenosis of right posterior cerebral artery
I63532	Cerebral infarction due to unspecified occlusion or stenosis of left posterior cerebral artery
I63539	Cerebral infarction due to unspecified occlusion or stenosis of unspecified posterior cerebral artery
I63541	Cerebral infarction due to unspecified occlusion or stenosis of right cerebellar artery
I63542	Cerebral infarction due to unspecified occlusion or stenosis of left cerebellar artery
I63549	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebellar artery
I6359	Cerebral infarction due to unspecified occlusion or stenosis of other cerebral artery
I636	Cerebral infarction due to cerebral venous thrombosis, nonpyogenic
I638	Other cerebral infarction
I639	Cerebral infarction, unspecified

Note: For discharges prior to September 30, 2014 (FY2014 or earlier), the following code is included in the overall denominator. This code is not included in any stratum.

ICD-9-CM	Description
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436	CVA
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DENOMINATOR STRATUM A

Discharges, for patients ages 18 years and older, with a principal ICD-9-CM or ICD-10-CM diagnosis code for subarachnoid hemorrhage (see above).

DENOMINATOR STRATUM B

Discharges, for patients ages 18 years and older, with a principal ICD-9-CM or ICD-10-CM diagnosis code for intracerebral hemorrhage stroke (see above).

DENOMINATOR STRATUM C

Discharges, for patients ages 18 years and older, with a principal ICD-9-CM or ICD-10-CM diagnosis code for ischemic stroke (see above).

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DENOMINATOR EXCLUSIONS

Note: Denominator exclusions for Overall and Strata A, B and C are identical

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

[NOTE: Overall denominator may not match the sum of the strata denominators because the strata may not be mutually exclusive.]