



# Inpatient Quality Indicator 17 (IQI 17) Acute Stroke Mortality Rate

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Provider-Level Indicator

Type of Score: Rate

## Prepared by:

Agency for Healthcare Research and Quality

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[www.qualityindicators.ahrq.gov](http://www.qualityindicators.ahrq.gov)

## DESCRIPTION

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, cases in hospice care at admission, and transfers to another hospital.

*[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.]*

## Stratification of Indicator

The indicator is stratified into three groups by the type of stroke:

Cases are assigned to strata according to a hierarchy based on risk of 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:

Strata hierarchy (listed from highest mortality to lowest mortality):

- 1) Intracerebral hemorrhage
- 2) Subarachnoid hemorrhage
- 3) Ischemic stroke

Strata are mutually exclusive. Patients cannot qualify for more than one stratum. If patients qualify for more than one procedure, patients are assigned to the stratum with the highest risk of mortality (Intracerebral Hemorrhage, Subarachnoid Hemorrhage, Ischemic Stroke).

## NUMERATOR

### Overall

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

### Stratum: Subarachnoid hemorrhage

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

### Stratum: Intracerebral hemorrhage

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

### Stratum: Ischemic stroke

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

## DENOMINATOR OVERALL

Discharges, for patients ages 18 years and older and with a principal ICD-10-CM diagnosis code for subarachnoid hemorrhage (*MRTCV2A*<sup>\*</sup>) or intracerebral hemorrhage (*MRTCV3D*<sup>\*</sup>) or ischemic stroke (*MRTCV4D*<sup>\*</sup>).

### Stratum: Subarachnoid Hemorrhage

Discharges, for patients ages 18 years and older, with a principal ICD-10-CM diagnosis code for subarachnoid hemorrhage (*MRTCV2A*<sup>\*</sup>).

### Stratum: Intracerebral Hemorrhage

Discharges, for patients ages 18 years and older, with a principal ICD-10-CM diagnosis code for intracerebral hemorrhage stroke (*MRTCV2A*<sup>\*</sup>).

### Stratum: Ischemic Stroke

Discharges, for patients ages 18 years and older, with a principal ICD-10-CM diagnosis code for ischemic stroke (*MRTCV2A*<sup>\*</sup>).

## **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)
- Cases in hospice care at admission (PointOfOriginUB04=F)
- 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).

\* See below for code list

***Subarachnoid hemorrhage diagnosis codes: (MRTCV2A)***

I6000	Nontraumatic subarachnoid hemorrhage from unspecified carotid siphon and bifurcation	I6031	Nontraumatic subarachnoid hemorrhage from right posterior communicating artery
I6001	Nontraumatic subarachnoid hemorrhage from right carotid siphon and bifurcation	I6032	Nontraumatic subarachnoid hemorrhage from left posterior communicating artery
I6002	Nontraumatic subarachnoid hemorrhage from left carotid siphon and bifurcation	I604	Nontraumatic subarachnoid hemorrhage from basilar artery
I6010	Nontraumatic subarachnoid hemorrhage from unspecified middle cerebral artery	I6050	Nontraumatic subarachnoid hemorrhage from unspecified vertebral artery
I6011	Nontraumatic subarachnoid hemorrhage from right middle cerebral artery	I6051	Nontraumatic subarachnoid hemorrhage from right vertebral artery
I6012	Nontraumatic subarachnoid hemorrhage from left middle cerebral artery	I6052	Nontraumatic subarachnoid hemorrhage from left vertebral artery
I6020	Nontraumatic subarachnoid hemorrhage from unspecified anterior communicating artery	I606	Nontraumatic subarachnoid hemorrhage from other intracranial arteries
I6021	Nontraumatic subarachnoid hemorrhage from right anterior communicating artery	I607	Nontraumatic subarachnoid hemorrhage from unspecified intracranial artery
I6022	Nontraumatic subarachnoid hemorrhage from left anterior communicating artery	I608	Other nontraumatic subarachnoid hemorrhage
I6030	Nontraumatic subarachnoid hemorrhage from unspecified posterior communicating artery	I609	Nontraumatic subarachnoid hemorrhage, unspecified
		I602	Nontraumatic subarachnoid hemorrhage from anterior communicating artery

***Intracerebral hemorrhage diagnosis codes: (MRTCV3D)***

I610	Nontraumatic intracerebral hemorrhage in hemisphere, subcortical	I619	Nontraumatic intracerebral hemorrhage, unspecified
I611	Nontraumatic intracerebral hemorrhage in hemisphere, cortical	I6200	Nontraumatic subdural hemorrhage, unspecified
I612	Nontraumatic intracerebral hemorrhage in hemisphere, unspecified	I6201	Nontraumatic acute subdural hemorrhage
I613	Nontraumatic intracerebral hemorrhage in brain stem	I6202	Nontraumatic subacute subdural hemorrhage
I614	Nontraumatic intracerebral hemorrhage in cerebellum	I6203	Nontraumatic chronic subdural hemorrhage
I615	Nontraumatic intracerebral hemorrhage, intraventricular	I621	Nontraumatic extradural hemorrhage
I616	Nontraumatic intracerebral hemorrhage, multiple localized	I629	Nontraumatic intracranial hemorrhage, unspecified
I618	Other nontraumatic intracerebral hemorrhage		

***Ischemic stroke diagnosis codes: (MRTCV4D)***

I6300	Cerebral infarction due to thrombosis of unspecified precerebral artery	I63339	Cerebral infarction due to thrombosis of unspecified posterior cerebral artery
I63011	Cerebral infarction due to thrombosis of right vertebral artery	I63341	Cerebral infarction due to thrombosis of right cerebellar artery
I63012	Cerebral infarction due to thrombosis of left vertebral artery	I63342	Cerebral infarction due to thrombosis of left cerebellar artery
I63013	Cerebral infarction due to thrombosis of bilateral vertebral arteries	I63343	Cerebral infarction due to thrombosis of bilateral cerebellar arteries
I63019	Cerebral infarction due to thrombosis of unspecified vertebral artery	I63349	Cerebral infarction due to thrombosis of unspecified cerebellar artery
I6302	Cerebral infarction due to thrombosis of basilar artery	I6339	Cerebral infarction due to thrombosis of other cerebral artery
I63031	Cerebral infarction due to thrombosis of right carotid artery	I6340	Cerebral infarction due to embolism of unspecified cerebral artery
I63032	Cerebral infarction due to thrombosis of left carotid artery	I63411	Cerebral infarction due to embolism of right middle cerebral artery
I63033	Cerebral infarction due to thrombosis of bilateral carotid arteries	I63412	Cerebral infarction due to embolism of left middle cerebral artery
I63039	Cerebral infarction due to thrombosis of unspecified carotid artery	I63413	Cerebral infarction due to embolism of bilateral middle cerebral arteries
I6309	Cerebral infarction due to thrombosis of other precerebral artery	I63419	Cerebral infarction due to embolism of unspecified middle cerebral artery
I6310	Cerebral infarction due to embolism of unspecified precerebral artery	I63421	Cerebral infarction due to embolism of right anterior cerebral artery
I63111	Cerebral infarction due to embolism of right vertebral artery	I63422	Cerebral infarction due to embolism of left anterior cerebral artery
I63112	Cerebral infarction due to embolism of left vertebral artery	I63423	Cerebral infarction due to embolism of bilateral anterior cerebral arteries
I63113	Cerebral infarction due to embolism of bilateral vertebral arteries	I63429	Cerebral infarction due to embolism of unspecified anterior cerebral artery
I63119	Cerebral infarction due to embolism of unspecified vertebral artery	I63431	Cerebral infarction due to embolism of right posterior cerebral artery
I6312	Cerebral infarction due to embolism of basilar artery	I63432	Cerebral infarction due to embolism of left posterior cerebral artery
I63131	Cerebral infarction due to embolism of right carotid artery	I63433	Cerebral infarction due to embolism of bilateral posterior cerebral arteries
I63132	Cerebral infarction due to embolism of left carotid artery	I63439	Cerebral infarction due to embolism of unspecified posterior cerebral artery
I63133	Cerebral infarction due to embolism of bilateral carotid arteries	I63441	Cerebral infarction due to embolism of right cerebellar artery
I63139	Cerebral infarction due to embolism of unspecified carotid artery	I63442	Cerebral infarction due to embolism of left cerebellar artery

I6319	Cerebral infarction due to embolism of other precerebral artery	I63443	Cerebral infarction due to embolism of bilateral cerebellar arteries
I6320	Cerebral infarction due to unspecified occlusion or stenosis of unspecified precerebral arteries	I63449	Cerebral infarction due to embolism of unspecified cerebellar artery
I63211	Cerebral infarction due to unspecified occlusion or stenosis of right vertebral arteries	I6349	Cerebral infarction due to embolism of other cerebral artery
I63212	Cerebral infarction due to unspecified occlusion or stenosis of left vertebral arteries	I6350	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebral artery
I63213	Cerebral infarction due to unspecified occlusion or stenosis of bilateral vertebral arteries	I63511	Cerebral infarction due to unspecified occlusion or stenosis of right middle cerebral artery
I63219	Cerebral infarction due to unspecified occlusion or stenosis of unspecified vertebral arteries	I63512	Cerebral infarction due to unspecified occlusion or stenosis of left middle cerebral artery
I6322	Cerebral infarction due to unspecified occlusion or stenosis of basilar arteries	I63513	Cerebral infarction due to unspecified occlusion or stenosis of bilateral middle arteries
I63231	Cerebral infarction due to unspecified occlusion or stenosis of right carotid arteries	I63519	Cerebral infarction due to unspecified occlusion or stenosis of unspecified middle cerebral artery
I63232	Cerebral infarction due to unspecified occlusion or stenosis of left carotid arteries	I63521	Cerebral infarction due to unspecified occlusion or stenosis of right anterior cerebral artery
I63233	Cerebral infarction due to unspecified occlusion or stenosis of bilateral carotid arteries	I63522	Cerebral infarction due to unspecified occlusion or stenosis of left anterior cerebral artery
I63239	Cerebral infarction due to unspecified occlusion or stenosis of unspecified carotid arteries	I63523	Cerebral infarction due to unspecified occlusion or stenosis of bilateral anterior arteries
I6329	Cerebral infarction due to unspecified occlusion or stenosis of other precerebral arteries	I63529	Cerebral infarction due to unspecified occlusion or stenosis of unspecified anterior cerebral artery
I6330	Cerebral infarction due to thrombosis of unspecified cerebral artery	I63531	Cerebral infarction due to unspecified occlusion or stenosis of right posterior cerebral artery
I63311	Cerebral infarction due to thrombosis of right middle cerebral artery	I63532	Cerebral infarction due to unspecified occlusion or stenosis of left posterior cerebral artery
I63312	Cerebral infarction due to thrombosis of left middle cerebral artery	I63533	Cerebral infarction due to unspecified occlusion or stenosis of bilateral posterior arteries

I63313	Cerebral infarction due to thrombosis of bilateral middle cerebral arteries	I63539	Cerebral infarction due to unspecified occlusion or stenosis of unspecified posterior cerebral artery
I63319	Cerebral infarction due to thrombosis of unspecified middle cerebral artery	I63541	Cerebral infarction due to unspecified occlusion or stenosis of right cerebellar artery
I63321	Cerebral infarction due to thrombosis of right anterior cerebral artery	I63542	Cerebral infarction due to unspecified occlusion or stenosis of left cerebellar artery
I63322	Cerebral infarction due to thrombosis of left anterior cerebral artery	I63543	Cerebral infarction due to unspecified occlusion or stenosis of bilateral cerebellar arteries
I63323	Cerebral infarction due to thrombosis of bilateral anterior arteries	I63549	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebellar artery
I63329	Cerebral infarction due to thrombosis of unspecified anterior cerebral artery	I6359	Cerebral infarction due to unspecified occlusion or stenosis of other cerebral artery
I63331	Cerebral infarction due to thrombosis of right posterior cerebral artery	I636	Cerebral infarction due to cerebral venous thrombosis, nonpyogenic
I63332	Cerebral infarction due to thrombosis of left posterior cerebral artery	I638	Other cerebral infarction
I63333	Cerebral infarction to thrombosis of bilateral posterior arteries	I639	Cerebral infarction, unspecified