All Payer In-Hospital/30-Days Acute Stroke Mortality Rates by Hospital (SPARCS): Beginning 2013

OVERVIEW

New York State Department of Health

Office of Quality and Patient Safety

Division of Information and Statistics

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Health Data NY

General Description: The purpose of this data set is reporting of hospital-specific risk adjusted acute stroke mortality rates (RAMR) to inform hospitals, to aid initiatives to improve hospital quality performance and measurement, and to identify performance outliers for public reporting.

The burden of stroke in New York State (NYS) is significant. Stroke remains the fourth leading cause of death in NYS, accounting for over 6,000 deaths annually (2012 Vital Statistics). While rates of stroke mortality have declined significantly in NYS in the past decade, nearly fifteen percent of adults hospitalized for stroke in NYS die in the hospital or within 30 days of their admission. However, there is a considerable variation in stroke mortality rates between hospitals. Because differences could be influenced by patient characteristics and by hospital-level factors, to enable meaningful stroke mortality rates comparison between hospitals, risk adjustment models are needed.

Starting point for the measure calculation was the methodology developed by the Agency of Healthcare Research and Quality (AHRQ) for calculation of the Inpatient Quality Indicators (IQI) related to stroke mortality (IQI 17). These methods were modified and applied to NYS inpatient hospital discharges. For methods details please refer to the document: Stroke Mortality Methods_January_2016.docx.

Discharges at risk definition: Acute stroke discharges were identified if primary diagnosis was one of the following:

ICD-9 Code	Description
430	Subarachnoid hemorrhage
431	Intracerebral hemorrhage
433.01	Occlusion and stenosis of basilar artery with cerebral infarction
433.11	Occlusion and stenosis of carotid artery with cerebral infarction
433.21	Occlusion and stenosis of vertebral artery with cerebral infarction
433.31	Occlusion and stenosis of multiple and bilateral pre cerebral arteries with cerebral infarction
433.81	Occlusion and stenosis of other specified pre cerebral artery with cerebral infarction
433.91	Occlusion and stenosis of unspecified pre cerebral artery with cerebral infarction
434.01	Cerebral thrombosis with cerebral infarction
434.11	Cerebral embolism with cerebral infarction
434.91	Cerebral artery occlusion, unspecified with cerebral infarction

Hospital discharges for out of state residents, those admitted from hospice, transfers from acute care hospitals and discharges within 30 days post initial acute stroke discharge were excluded from this measure. This measure was calculated only for patients 18 years of age or older.

Outcome definition: The in-hospital/30-day mortality outcome is a composite measure and was defined as one of the following: (1) in-hospital death during the stroke admission; (2) death within 30 days post inpatient

admission for stroke; (3) cases when patient who was admitted for an acute stroke, was discharged to hospice care and died within 30 days.

How to Interpret the Rates

The **Observed Mortality Rate**, per 100 discharges at risk is the number of acute stroke discharges when patient died in-hospital or 30-days post acute stroke admission divided by the number of the acute stroke discharges at risk. Lower rates represent better results.

The **Expected Mortality Rate**, per 100 discharges at risk is the expected number of acute stroke discharges when patient died in-hospital or 30-days post acute stroke admission divided by the number of the acute stroke discharges at risk. Expected number of deaths is calculated using the methodology outlined in the attached materials: Stroke Mortality Methods_January_2016.docx.

The **Risk Adjusted Mortality Rate (RAMR)**, per 100 discharges at risk was calculated by dividing the Observed Stroke Mortality Rate by the Expected Stroke Mortality Rate and multiplied by the Statewide Observed Mortality Rate. The Statewide Mortality Rate is a sum of the discharges with death outcome (as defined in the measure) divided by the number of the acute stroke discharges at risk across the State.

Compare to State indicator uses Statewide Rate as a reference value that is compared to the upper and lower 95% CI for the RAMR. If Statewide Rate is greater than upper bound of the CI then computed RAMR is significantly lower than Statewide Rate. If the Statewide Rate is less than the lower bound of the 95% CI then computed RAMR is significantly higher than Statewide Rate.

Data Methodology: SPARCS Article 28 inpatient discharge records were used to identify acute stroke hospital admissions.

SPARCS is a comprehensive data reporting system established in 1979 as a result of cooperation between the health care industry and government. Initially created to collect information on discharges from hospitals, SPARCS currently collects patient level detail on patient characteristics, diagnoses and treatments, services, and charges for every hospital discharge, ambulatory surgery, emergency department visit and visits to hospital-based outpatient clinics in New York State.

The enabling legislation and regulations for SPARCS are located under Section 28.16 of the Public Health Law (PHL), Section 400.18 of Title 10 (Health) of the Official Compilation of Codes, Rules, and Regulations of the State of New York (NYCRR).

Article 28 hospital services, ambulatory surgery services, emergency department services or outpatient services are required to submit data to SPARCS via the Health Commerce System (HCS). The HCS provides an efficient and secure data transmission option using the powerful Internet Secure Sockets Layer (SSL) encryption technology.

More information on how SPARCS data is collected may be found at the following direct link: http://www.health.ny.gov/statistics/sparcs/data_collection.htm.

More information on SPARCS may be found on the New York State Department of Health's website at the following direct link: http://www.health.ny.gov/statistics/sparcs/.

De-Identified Data Use Limitations: The datasets contain hospital's name, county, observed, expected and risk adjusted mortality rates by year. It does not contain data that is protected health information (PHI) under HIPAA. The health information is not individually identifiable. Additionally only data for hospitals with 30 or more acute stroke admissions in a measurement year are presented.

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