

Stroke Encounter Quality Improvement Project

Kentucky SEQIP Stroke Registry Data Summary

Kentucky Heart Disease & Stroke Prevention Program

Prepared for:

The Governor
Hon. Steven L. Beshear

Legislative Research Commission



Kentucky SEQIP Hospitals Stroke Registry Data Summary

PURPOSE

This preliminary data summary report is compiled in response to KRS 211.575, effective July 12, 2012, which requires the Kentucky Department for Public Health (KDPH) to establish and implement a plan to address continuous quality improvement for stroke care. Additionally, KDPH is required to provide an annual report to the Governor and the Legislative Research Commission that includes data, related findings, and recommendations to improve the delivery of stroke care efforts in Kentucky.

BACKGROUND

In 2008, the Kentucky Stroke Encounter Quality Improvement Project (SEQIP), a statewide quality improvement initiative, was developed through a collaborative effort between the Kentucky Heart Disease and Stroke Prevention (HDSP) Program, HDSP Task Force, and the American Heart Association/American Stroke Association (AHA/ASA). SEQIP was the first Kentucky Stroke Registry focusing on quality improvement initiatives. The goal was to implement evidence-based integrated cardiovascular health delivery systems and to support and advance the quality of care available to stroke patients in Kentucky.

SEQIP was designed to encourage collaboration between hospitals and stakeholders in Kentucky in order to improve the quality of care given to stroke patients. At inception, 16 hospitals were geographically chosen and invited to participate to represent the state as a whole. Quality and process improvement reports were generated and reviewed by SEQIP member hospitals. As the initiative has grown, additional hospitals have joined the effort. By 2011, 18 hospitals were engaged, including all of Kentucky's Primary Stroke Centers, and, the conclusion calendar year 2012 the number had increased to 20.

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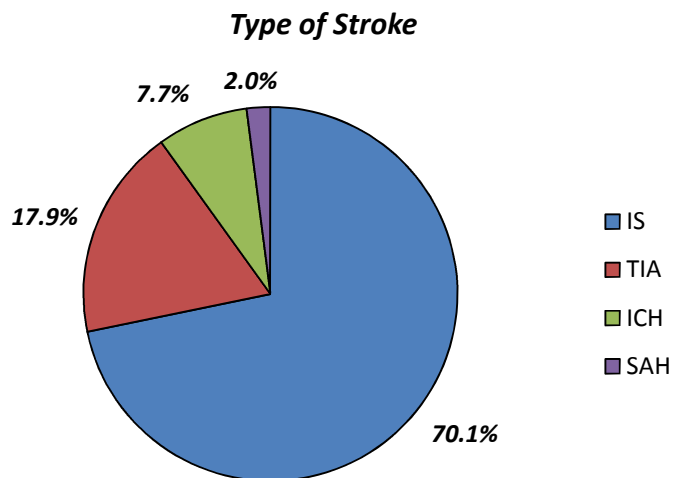
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DEFINITIONS

- Cerebrovascular event: sudden loss of consciousness, sensation, and voluntary motion caused by rupture or obstruction (as by a clot) of a blood vessel of the brain
- Ischemic Stroke (IS): occurs when an artery to the brain is blocked resulting in inadequate blood supply and oxygen
- Hemorrhagic Stroke (ICH): occurs when a diseased blood vessel within the brain bursts, allowing blood to leak inside the brain
- Subarachnoid Hemorrhage (SAH): occurs when a blood vessel just outside the brain ruptures. The area of the skull surrounding the brain (the subarachnoid space) rapidly fills with blood
- Transient Ischemic Attack (TIA): occurs when a blood clot temporarily blocks an artery and part of the brain does not get the blood flow it needs. The symptoms occur rapidly and usually last for a short time before resolving completely and leaving no permanent damage

DEMOGRAPHICS

This report was compiled using de-identified patient data for 18 participating hospitals in Kentucky for calendar year 2011. The chart below displays the percentage of cerebrovascular events in Kentucky SEQIP hospitals. The most common type of stroke for 2011 was ischemic (70.1%), followed by hemorrhagic stroke (7.7%), and subarachnoid hemorrhage (2.0%). Additionally, transient ischemic attack (TIA) accounts for (17.9%) of SEQIP cases.



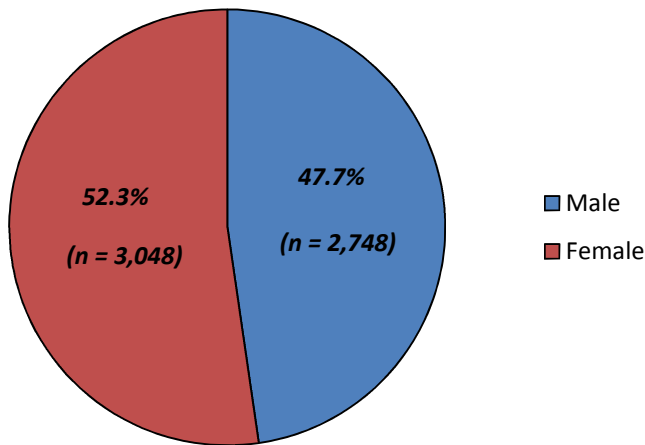
Note: Missing = 2.3%

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Who is affected?

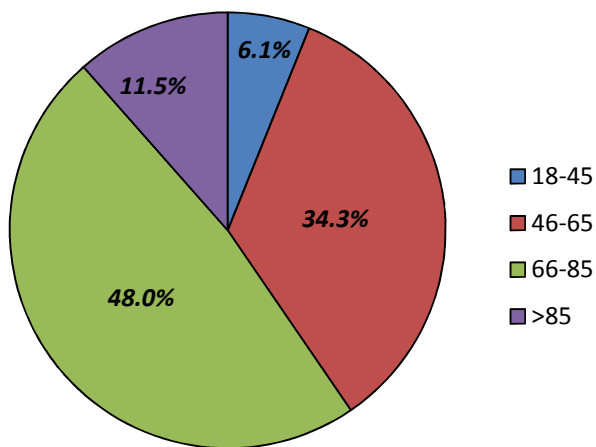
The chart below shows the breakdown of stroke by gender. 52.3% occurred in females compared to 47.7% in males.

Stroke by gender



The chart below shows the distribution of stroke by age-group. The majority of strokes occurred in age-group 66 years and older (59.5%).

Stroke by age group



Note: Missing ≈ 0.1%

DEMOGRAPHICS

In the United States, on average, every 40 seconds someone has a stroke. Stroke is projected to affect additional 4 million people by 2030.

Moreover, stroke occurrence was higher among females compared to males in Kentucky, which is similar when compared with the national data.

In 2011, more than 5,800 stroke patients were admitted to the 18 member SEQIP hospitals in Kentucky.

Of all the strokes, 40.4% occurred in the age-group of 18 to 65 years.

The mean age for all stroke patients was 68.5 years and the median was 70 years.

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PERFORMANCE MEASURES

Early Antithrombotics: patients receiving antithrombotic therapy by hospital day two

Rehabilitation: patients with stroke evaluated for rehabilitation services

Stroke Education: patients and caregivers educated on warning signs of stroke, their individual risk factors, medications, calling 911, and scheduling follow up appointments with their physicians

Dysphagia Screening: patients receiving a swallowing evaluation before being given any food, liquids or medications by mouth to insure they do not inhale food or water which can cause pneumonia

Low Density Lipoprotein (LDL): patients with LDL levels > 100 discharged on cholesterol lowering medication

Smoking Cessation: patients with history of cigarette smoking and their caregivers advised to quit smoking

Anticoagulation for atrial-fibrillation: patients receiving medication to prevent blood clots that have a particular disturbance of their heart rhythm

DVT Prophylaxis: patients receiving deep vein thrombosis (DVT) prophylaxis by the end of hospital day two

Antithrombotics at discharge: ischemic stroke patients prescribed medication to prevent blood clots at discharge

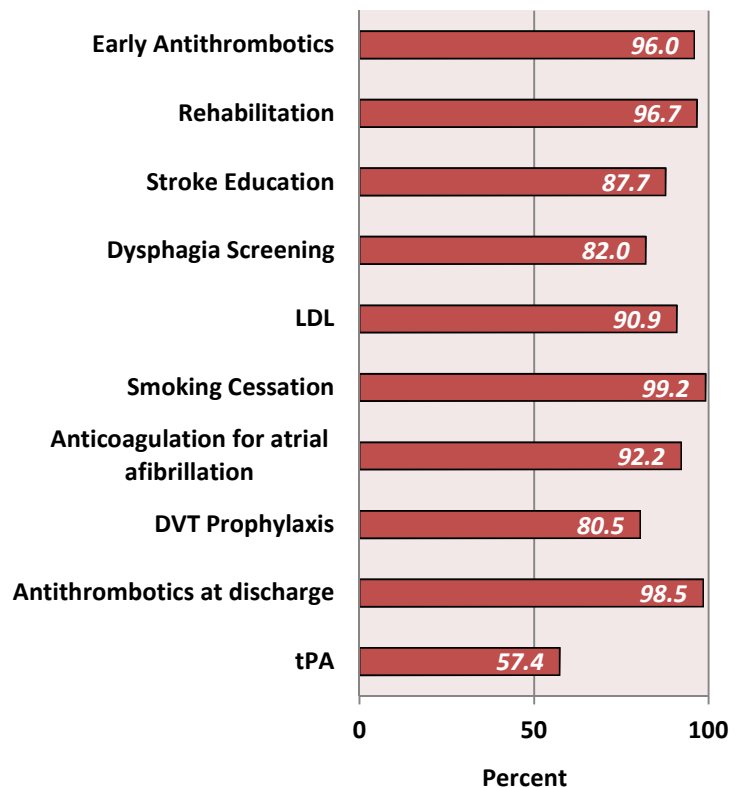
Tissue Plasminogen Activator (tPA): patients arriving within 2 hours of symptom onset and receiving intra venous (IV)-tPA – a “clot busting” drug) within 3 hours of symptom onset

PERFORMANCE MEASURES

Kentucky SEQIP hospitals utilize the performance measures found in the AHA/ASA’s nationally recognized Get With The Guidelines® – stroke hospital based quality improvement module that uses a data set platform with patient confidentiality standards. SEQIP collects data on 10 measures related to stroke that are evidence-based guidelines for the treatment and management of acute ischemic stroke from hospital admission to discharge.

The chart below is based on data from more than 5,000 patients reported by the 18 participating hospitals between January and December 2011. The performance measures were developed by the Joint Commission, AHA and the Centers for Disease Control and Prevention (CDC) for optimal treatment of ischemic strokes.

Performance Measures



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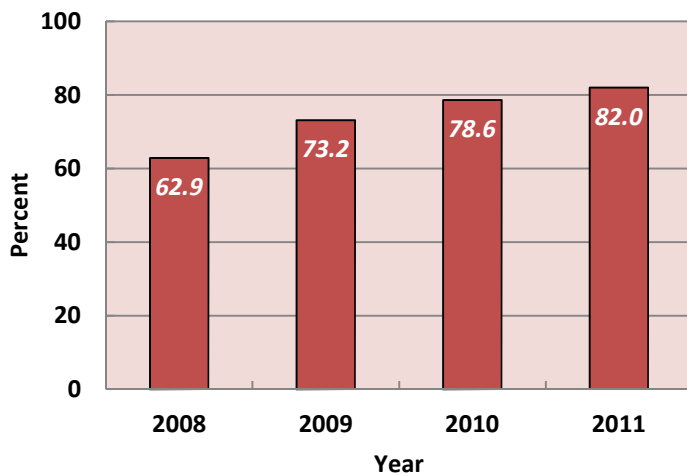
DYSPHAGIA SCREENING

SEQIP member hospitals collaborate to choose performance measures, share best practices, and develop an action plan to address their quality improvement efforts. The first performance measurement chosen was screening for dysphagia.

Dysphagia, or difficulty in swallowing, is a common occurrence in acute stroke. Early screening helps to manage stroke patients who could be vulnerable to weight loss, fluid depletion, malnutrition, and aspiration of food or liquid that can cause pneumonia. Patients who are unable to consume food or fluid by mouth may have poorer outcomes and prolonged hospital stays.

The chart below demonstrates that screening for dysphagia increased from 62.9% in 2008 to 82.0% in 2011. During the four year period dysphagia screening at the primary stroke centers increased by 19.1%.

Dysphagia Screening



Causes of nutritional impairment after stroke

Primary Factor

- Dysphagia

Secondary Factor

- Upper limb paralysis
- Disturbance of sensory function
- Depression
- Cognitive changes affecting eating (e.g., attention-concentration deficit, forgetting to eat, eating too fast or too slowly)

Dysphagia Screening Action Plan

The hospitals identified and recruited a team of professionals (i.e. speech therapist, occupational therapist, and nursing emergency department (ED) and Unit) that developed policies to integrate dysphagia screening, including who, how and when it would be performed. In addition, the stroke care staff (ED, nursing and physicians) received quarterly sessions on stroke training and education, which were later monitored for quality improvement.

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STROKE SYMPTOMS

Sudden numbness or weakness of face, arm or leg – especially on one side of the body

Sudden confusion, trouble speaking or understanding

Sudden trouble seeing in one or both eyes

Sudden trouble walking, dizziness, loss of balance, or coordination

Sudden severe headache with no known cause

Anyone experiencing these symptoms or noticing these symptoms in another immediately **dial 9-1-1**. It is also important to note the time of symptom onset.

PRE-HOSPITAL MODE OF TRANSPORT

Notification and Response of Emergency Medical Services (EMS) for Stroke

The notification and response of EMS to a stroke involves a complex interaction among the public, the applicable EMS programs, and the relevant hospital EDs.

Treatment is most effective if administered within three hours of symptom onset. EMS transport of stroke patients to a hospital equipped to treat strokes generally results in better outcomes in terms of reduced disability and death compared to patients who arrive by car or other forms of personal transport. Based on patients presenting to SEQIP hospitals in 2011, only 29.9% of stroke patients used EMS prior to hospital admission. SEQIP hospitals have recognized the benefits of EMS involvement in acute stroke treatment and are in the process of developing an action plan that creates an effective network of care in cooperation with the EMS.

CDC recommends hospitals develop partnerships with local EMS providers and educate communities about the importance of dialing 9-1-1 when someone is experiencing symptoms of a stroke.

RECOMMENDATIONS

Based on findings in this report, SEQIP hospitals recommend:

- Continued focus on improving dysphagia screening;
- Increased IV-tPA administration in the three-hour window for patients diagnosed with acute ischemic stroke;
- Increased community education focused on when to call 911;
- Improved hospital data reporting on patient's mode of transport to stroke centers; and
- Increased early entry and access to a network of effective stroke care in cooperation with the EMS.

SUMMARY

SEQIP hospitals, all certified as Primary Stroke Centers, have achieved significant quality improvement with their first chosen performance measurement, dysphagia screening. Through continued efforts, Kentucky's Stroke Registry will help member hospitals to review data, collaborate actions, and measure progress toward improving their stroke systems of care.

All patients with stroke and those at risk of having a stroke benefit from the development of systems of care. Strong partnerships and committed stakeholders are the infrastructure for building stroke systems of care that will improve patient outcomes through prevention and treatment.



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211.575 Statewide system for stroke response and treatment.

- (1) As used in this section, "department" means the Department for Public Health.
- (2) The Department for Public Health shall establish and implement a plan for achieving continuous quality improvement in the quality of care provided under a statewide system for stroke response and treatment. In implementing the plan, the department shall:
 - (a) Maintain a statewide stroke database to compile information and statistics on stroke care as follows:
 1. The database shall align with the stroke consensus metrics developed and approved by the American Heart Association, the American Stroke Association, the Centers for Disease Control and Prevention, and the Joint Commission;
 2. The department shall utilize the "Get With The Guidelines-Stroke" quality improvement program maintained by the American Heart Association and the American Stroke Association or another nationally recognized program that utilizes a data set platform with patient confidentiality standards no less secure than the statewide stroke database established in this paragraph; and
 3. Require primary stroke centers as established in KRS 216B.0425 to report to the database each case of stroke seen at the facility. The data shall be reported in a format consistent with nationally recognized guidelines on the treatment of individuals within the state with confirmed cases of stroke;
 - (b) To the extent possible, coordinate with national voluntary health organizations involved in stroke quality improvement to avoid duplication and redundancy;
 - (c) Encourage the sharing of information and data among health care providers on methods to improve the quality of care of stroke patients in the state;
 - (d) Facilitate communication about data trends and treatment developments among health care professionals involved in the care of individuals with stroke;
 - (e) Require the application of evidence-based treatment guidelines for the transition of stroke patients upon discharge from a hospital following acute treatment to community-based care provided in a hospital outpatient, physician office, or ambulatory clinic setting; and
 - (f) Establish a data oversight process and a plan for achieving continuous quality improvement in the quality of care provided under the statewide system for stroke response and treatment, which shall include:
 1. Analysis of the data included in the stroke database;
 2. Identification of potential interventions to improve stroke care in specific geographic regions of the state; and
 3. Recommendations to the department and the Kentucky General Assembly for improvement in the delivery of stroke care in the state.
- (3) All data reported under subsection (2)(a) of this section shall be made available to the department and all government agencies or contractors of government agencies which are responsible for the management and administration of emergency medical services throughout the state.
- (4) On June 1, 2013, and annually on June 1 thereafter, the department shall provide a report of its data and any related findings and recommendations to the Governor and to the Legislative Research Commission. The report also shall be made available on the department's Web site.
- (5) Nothing in this section shall be construed to require the disclosure of confidential information or data in violation of the federal Health Insurance Portability and Accountability Act of 1996.

Effective: July 12, 2012

History: Created 2012 Ky. Acts ch. 106, sec. 1, effective July 12, 2012.