

Stroke Encounter Quality Improvement Project

Kentucky SEQIP Stroke Registry Data Summary



Kentucky Heart Disease & Stroke Prevention Program

Prepared for:

Governor Matthew G. Bevin
Legislative Research Commission
June 1, 2016





Kentucky Heart Disease and Stroke Prevention Program



Kentucky SEQIP Hospitals Stroke Registry Data Summary

PURPOSE

This data summary report is compiled in pursuant to KRS 211.575, which requires the Kentucky Department for Public Health (KDPH) to establish and implement a plan to address continuous quality improvement for stroke care. 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, the Kentucky 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. The data presented in this report is based on 18 certified stroke centers that provided data for calendar year 2014. There are currently 26 participating hospital systems engaged in SEQIP, 23 of which are certified stroke centers. Data from these additional centers will be reflected in future reports.

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DEFINITIONS

- **Ischemic Stroke (IS):** occurs when an artery to the brain is blocked resulting in inadequate blood supply and oxygen to the brain causing tissue death.

- **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.

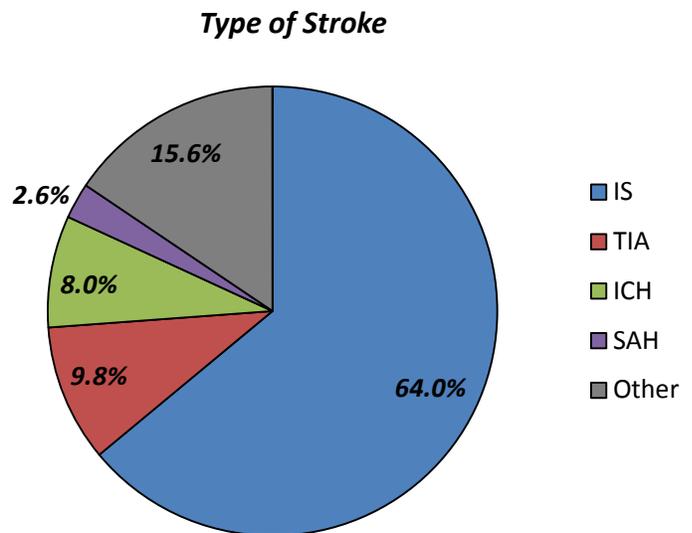
- **Intracerebral Hemorrhage (ICH):** occurs when a diseased blood vessel within the brain bursts, allowing blood to leak inside the brain.

- **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.

- **Cerebrovascular event:** sudden loss of consciousness, sensation, or voluntary motion caused by rupture or obstruction (as by a clot) of a blood vessel of the brain.

DEMOGRAPHICS

This report was compiled using de-identified patient data from participating SEQIP hospitals for calendar year 2014. The chart below displays the percentage of cerebrovascular events in Kentucky SEQIP hospitals. The most common type of stroke for 2014 was ischemic or IS (64.0%) followed by intracerebral hemorrhage or ICH (8.0%) and subarachnoid hemorrhage or SAH (2.6%). Additionally, transient ischemic attack (TIA) accounts for (9.8%) of SEQIP cases.



Other:
 Stroke not otherwise specified = 0.2%
 No Stroke related Diagnosis = 0.3%
 Elective Carotid Intervention only = 6.2%
 Diagnosis unclear = 8.9%

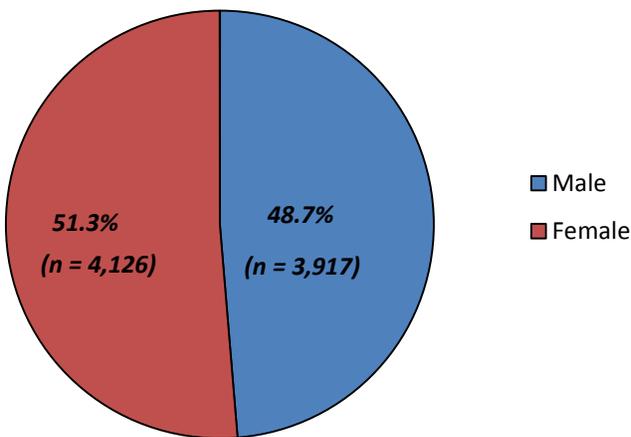
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WHO IS AFFECTED?

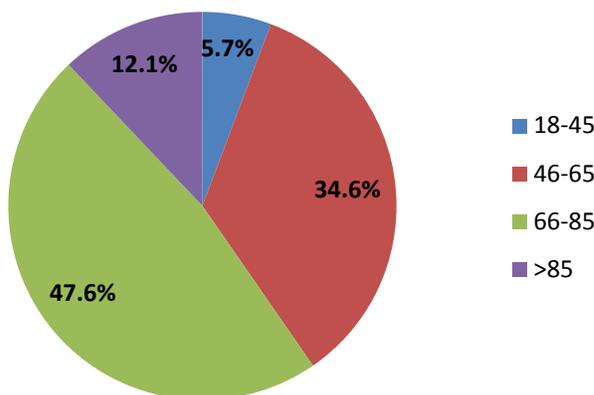
The chart below shows the breakdown of stroke by gender; 51.3% occurred in females compared to 48.7% in males.

Stroke by gender



The chart below shows the distribution of stroke by age-group. The majority of strokes occurred in people 66 years and older (59.7%).

Stroke by age-group



DEMOGRAPHICS

In the United States, on average, every 40 seconds someone has a stroke. Stroke is projected to affect an additional 3.4 million people by 2030.

Nationally, there are approximately 55,000 more strokes in women than men. SEQIP data for 2014 reveal slightly higher distribution of women having strokes compared to men.

In 2014, 8,043 stroke patients were admitted to the SEQIP hospitals in Kentucky.

Of all strokes, 40.3% occurred in the age group 18 to 65 years. The AHA 2015 stroke statistics report indicates strokes occurring at a younger age are on the rise with an increased incidence of stroke in blacks and whites between ages 20-54.

The mean age for all stroke patients in Kentucky was 68.7 years, and the median was 69 years.

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PERFORMANCE MEASURES

Smoking Cessation: patients and their caregivers with history of tobacco use advised to quit smoking.

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

Early Antithrombotics: patients receiving antithrombotic therapy by end of hospital day two.

Rehabilitation: patients with stroke evaluated for rehabilitation services.

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

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

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

Stroke Education: patients and caregivers educated on warning signs of stroke, their individual risk factors, medications, calling 9-1-1, 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 ensure they will not inhale food or water which can cause pneumonia.

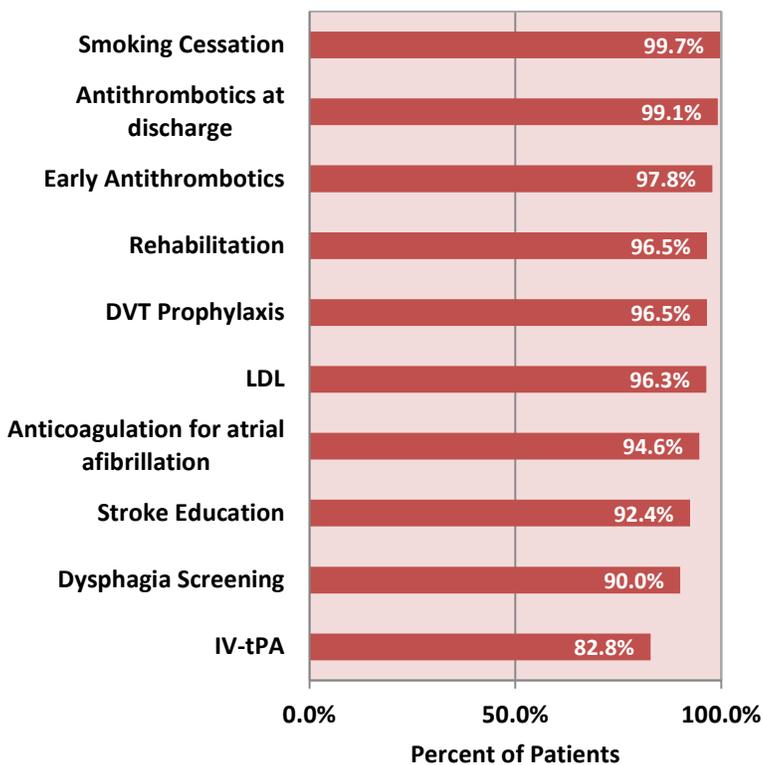
Tissue Plasminogen Activator (tPA): patients arriving within two hours of symptom onset and receiving intravenous IV-tPA – (a “clot busting” drug) within three hours of symptom onset.

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 reported by the participating hospitals between January and December 2014. 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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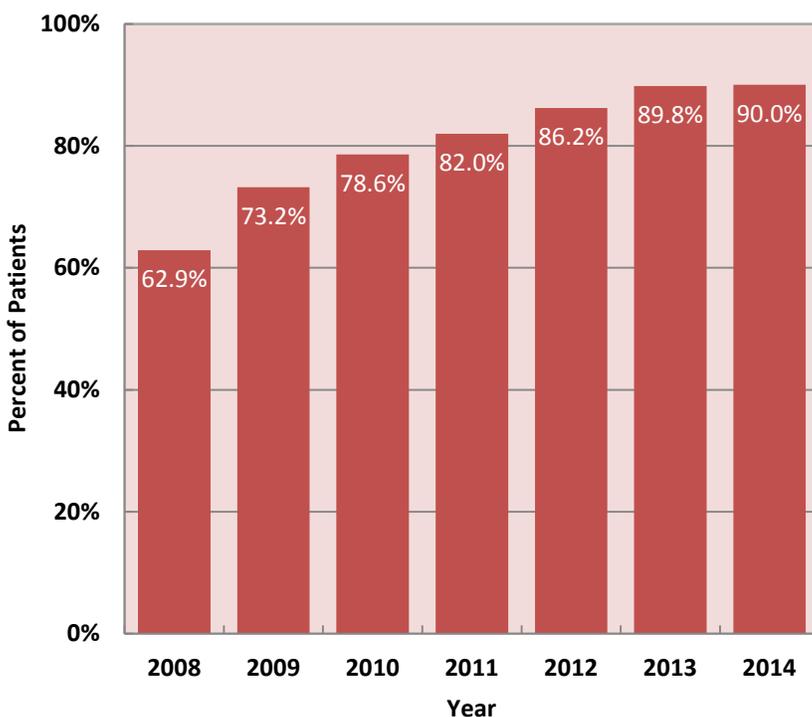
DYSPHAGIA SCREENING

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, which was chosen in 2008, was screening for dysphagia.

Dysphagia, or difficulty in swallowing, is a common occurrence in an acute stroke. Early screening helps to manage stroke patients who could otherwise 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 continues to improve and increased from 62.9% in 2008 to 90% in 2014. During the six year period from 2008 to 2014, dysphagia screening at certified stroke centers increased by 43.1%. These data were presented at the 2016 International Stroke Conference in Los Angeles, CA (Attachment A).

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 slow)

Dysphagia Screening Action Plan

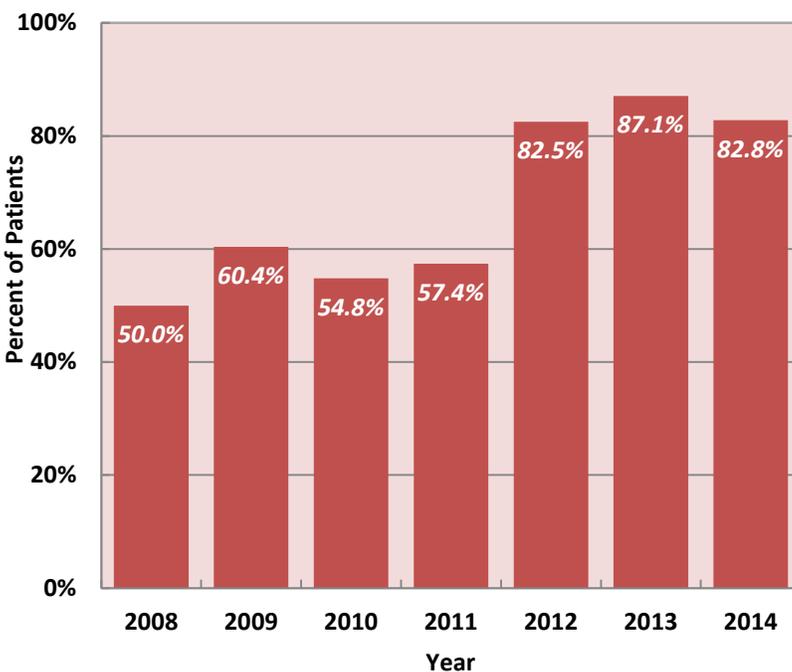
The hospitals identified and recruited a team of professionals (e.g., speech therapist, occupational therapist, physical therapist, discharge planner, dietician, and nurse) that developed policies to integrate dysphagia screening, including who, how, and when it would be performed. In addition, the stroke care staff received quarterly sessions on stroke training and education, which were later monitored for quality improvement.

IV-tPA ADMINISTRATION

The second performance measure, which SEQIP hospitals chose to target in 2010, was the percentage of eligible patients receiving IV-tPA at their facilities. Specifically, this indicator measures the percentage of eligible ischemic stroke patients who arrive at the hospital emergency room within 120 minutes of symptom onset and receive IV-tPA within 180 minutes of symptom onset. During calendar year 2014, the rate of IV-tPA administration at SEQIP hospitals in eligible patients was 82.8%. This is slightly lower than 2013 levels but higher than 2012 achievement levels.

The chart below demonstrates that IV-tPA administration for eligible patients increased from 50% in 2008 to 82.8% in 2014, which reflects a 65.6% increase during that six year time frame.

IV-tPA Administration



CAUSES OF FAILURE TO ADMINISTER

IV-tPA

Primary Factors

- Many hospitals are not able to evaluate stroke patients rapidly enough to meet the 3-hour time window once patients arrive.
- Some physicians remain resistant to administering IV-tPA.

IV-tPA Administration Action Plan

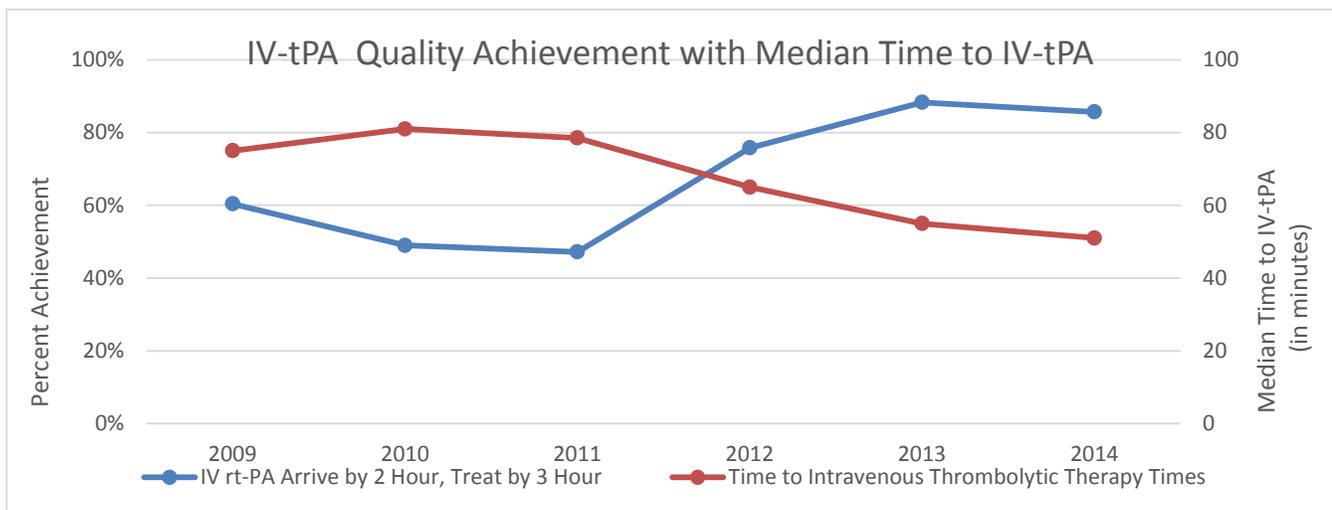
SEQIP hospitals examined each step from door to decision in the stroke patient's chain of survival upon arrival to the emergency room. Processes and opportunities for improvement were identified. Barriers contributing to delay in treatment included waiting for critical lab results and for the pharmacy to mix IV-tPA. Once hospitals identified their challenges, SEQIP meetings provided a forum for the exchange of best practices to improve the administration of IV-tPA to eligible patients. Evidence has also shown that time to treatment makes a difference in outcomes. The earlier patients are treated from time of onset of symptoms, the better the outcomes. 1.9 million neurons are lost every minute of ischemia. Hence the saying, "Time is Brain."

Sharing of best practices and support continues among hospitals to increase the administration of IV-tPA to eligible patients as well as to improve door to needle times.

In 2010, SEQIP hospitals also began participating in the American Stroke Association’s quality improvement initiative, “Target Stroke.” The initiative’s focus is to improve door to needle times, which is the time from patient arrival in the hospital to IV administration of IV-tPA.

Because time saved is brain saved, 18 hospitals in SEQIP committed to sharing best practices in an effort to increase the percentage of eligible patients receiving IV-tPA and the percentage of patients receiving the drug within 60 minutes of arrival to the hospital. These hospitals increased the rate of eligible patients receiving IV-tPA from 60% to 85%, and the number of patients receiving the drug within 60 minutes increased from 22% to 75%. SEQIP was recognized for their efforts and recently presented these results at the International Stroke Conference organized by the American Heart Association in Los Angeles, California on February 18, 2016 (Attachment B).

SEQIP continues to evaluate and implement transformational quality improvements throughout Kentucky’s stroke system. As identified above, much of this effort has focused on enhancing quality improvement efforts related to *time to intravenous thrombolytic therapy* and *IV-tPA arrive by 2 hours, treat by 3 hours* performance measures. These key metrics have been monitored and presented in previous annual SEQIP reports. The metrics demonstrate that more eligible patients are receiving appropriate care (% achievement of IV-tPA arrive by 2 hours, treat by 3 hours) and overall time to treatment is decreasing (time to intravenous thrombolytic therapy). Below is a graph depicting how both metrics have improved over time, leading to enhanced treatment and care for stroke patients throughout Kentucky.



Not only has SEQIP’s efforts enhanced Kentucky’s stroke system, but it has also become a model system for other states. As previously stated, SEQIP presented its findings, including significant improvements in stroke care, at the annual International Stroke Conference in February 2016. The material demonstrates SEQIP’s impact beyond Kentucky’s borders.

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 should immediately **dial 9-1-1**. It is also important to note the time the person was last known to be normal or at their baseline.

2-Year SEQIP Initiative

- Dissemination and education on the KBEMS recommended inter-facility stroke transfer protocol.
- Data collection of additional quality metrics related to EMS transport protocols.

PRE-HOSPITAL MODE OF TRANSPORT

The notification and response of Emergency Medical Services (EMS) for a stroke involves a complex interaction between the public, the applicable EMS programs, and the relevant hospital emergency departments. The CDC recommends hospitals develop partnerships with local EMS providers and educate communities about the symptoms of stroke and the importance of dialing 9-1-1 when someone is experiencing symptoms of a stroke in order to receive timely treatment. It is also important for EMS and emergency dispatch operators to be trained in stroke symptom recognition and be able to assist patients in quickly getting to the nearest hospital that is able to provide the “clot-busting” drug IV-tPA within the three-hour window from symptom onset.

Notification and Response of Emergency Medical Services for Stroke

In an attempt to understand the dispatch model in the Commonwealth for a stroke, SEQIP disseminated a survey to dispatch directors in early 2015. The response rate was low; however, the group identified stroke protocols and stroke education during orientation and ongoing education for dispatchers as inconsistent and lacking standardization.

SEQIP hospitals continue to partner with local and regional EMS agencies to provide stroke education and assist with development of stroke systems of care. Discussions are ongoing regarding development of online modules that meet the interactive format EMS providers prefer.

Kentucky Board of EMS (KBEMS) Cardiac and Stroke Care Subcommittee

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 or death compared to patients who arrive by car or other forms of personal transport. Based on patients presenting to SEQIP hospitals in 2014, only 36% of stroke patients used EMS prior to hospital admission.

The KBEMS Cardiac & Stroke subcommittee has representation from SEQIP hospitals, which recognize the benefits of EMS involvement in acute stroke treatment and are in the process of developing an effective network of care in collaboration with EMS. SEQIP has also partnered with the KBEMS Cardiac & Stroke subcommittee to review the recommended stroke transport protocol and the inter-facility transfer protocol. Once these documents are finalized, SEQIP is committed to assisting the KBEMS Cardiac & Stroke subcommittee in educating and disseminating the protocols to EMS agencies throughout the state. KRS 216B.0425 enhanced this effort by adding acute stroke ready hospitals and certified comprehensive stroke centers to Kentucky's existing designation program. This statute also defines the Cabinet for Health and Family Service's responsibilities for the program, which includes maintaining a list of designated programs and requiring KBEMS to share the list with each local EMS provider at least annually and as new centers and hospital are designated and certified.

RECOMMENDATIONS

Based on findings in this report, SEQIP hospitals recommend:

- Continued focus on improving IV-tPA administration to eligible patients;
- Monitoring IV-tPA door to needle times and achieving door to needle times ≤ 60 minutes in at least 75% of patients and ≤ 45 minutes in at least 50% of patients who receive IV-tPA to coincide with national standards for stroke center certification;
- Continuing community education focused on calling 9-1-1 for stroke symptoms;
- Securing a commitment from all SEQIP hospitals to enter data into the Get With The Guidelines® – a hospital based stroke quality improvement module for all EMS transport and IV-tPA documentation fields;
- Implementing and monitoring the SEQIP two year plan for EMS initiatives and transport protocols; and
- Developing and implementing an official structure for SEQIP regarding mission, membership, policy, and governing structure.

SUMMARY

SEQIP hospitals have achieved significant quality improvement with their performance measures including dysphagia screening, increased rate of IV-tPA administration, and decreased IV-tPA door to needle times. Hospitals in Kentucky continue to demonstrate their commitment to improving stroke systems of care. As of December 31, 2015, there were 20 certified primary stroke centers and three certified comprehensive certified centers in the Commonwealth. All certified hospitals are engaged in SEQIP. From data provided by the Cabinet for Health and Family Services, Office for Health Policy for 2014, there were 14,548 stroke patients admitted to all hospitals in Kentucky. SEQIP hospitals collected data on 8,043 stroke patients, representing 69.6% of all strokes in Kentucky.

SEQIP's goal is to utilize data to impact advocacy and legislative initiatives that will drive systems change in the Commonwealth. Development of strong systems of care benefits patients who have experienced a stroke and those at risk of a stroke. Strong partnerships and committed stakeholders are the infrastructure for building stroke systems of care that will improve patient outcomes through prevention and treatment.

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 website.
- (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.

216B.0425 Certification designations for stroke care for acute care hospitals.

- (1) Except as otherwise provided, for purposes of this section
- (a) "Acute care hospital" means a licensed facility providing inpatient and outpatient medical or surgical services to an individual that seeks care and treatment, regardless of the individual's ability to pay for services, on an immediate and emergent basis through an established emergency department and a continuous treatment basis on its premises for more than twenty-four (24) hours; and
 - (b) "Primary stroke center certification," "acute stroke ready hospital certification," and "comprehensive stroke center certification" mean certification for acute care hospitals issued by the Joint Commission, the American Heart Association, or another cabinet-approved nationally recognized organization that provides disease-specific certification for stroke care, that:
 - 1. Complies with census-based national standards and safety goals
 - 2. Effectively uses evidence-based clinical practice guidelines to manage and optimize care; and
 - 3. Uses an organized approach to measure performance
- (2) The secretary of the Cabinet for Health and Family Services shall designate as a primary stroke center any acute care hospital which has received an acute stroke ready hospital certification, a comprehensive stroke center certification, or a primary stroke center certification.
- (3) The secretary shall suspend or revoke an acute care hospital's designation as an acute stroke ready hospital, a comprehensive stroke center, or a primary stroke center if certification is withdrawn by the Joint Commission, the American Heart Association, or another cabinet-approved certifying organization.
- (4) (a) The cabinet shall maintain a list of certified acute stroke ready hospitals, comprehensive stroke centers, and primary stroke centers and post the list on its Web site. The cabinet shall provide the list and periodic updates to the Kentucky Board of Emergency Medical Services.
- (c) The Kentucky Board of Emergency Medical Services shall share the list with each local emergency medical services provider at least annually, and as new centers and hospitals are designated and certified.

Effective: June 24, 2015

History: Amended 2015 Ky. Acts ch. 9, sec. 1, effective June 24, 2015. -- Created 2010 Ky. Acts ch. 67, sec. 1, effective July 15, 2010.

ATTACHMENT

A

Kentucky SEQIP Statewide Approach to Improving Bedside Dysphagia Screening

Kari Moore, Louisville, KY; Bonita Bobo, Frankfort, KY; Melisa Herbert, Edgewood, KY; Polly Hunt, Ashland, KY; Peter Rock, Frankfort, KY; Bill Singletary, Bowling Green, KY; Debbie Tate, Owensboro, KY; Stephanie Turner, Pikeville, KY; Starr Block, Louisville, KY



Background

Research has shown that dysphagia occurs within 3 days of a stroke in 42-67% of patients. Of those, 50% aspirate, leading to higher morbidity and mortality due to complications such as pneumonia, dehydration and malnutrition. After reviewing aggregate Get With The Guidelines data, a voluntary group of Kentucky hospitals named SEQIP (Stroke Encounter Quality Improvement Project) was convened and agreed to share data. SEQIP, which included certified stroke centers and those pursuing certification working in collaboration with the AHA/ASA and the KY Department of Public Health, implemented a statewide QI Plan in an effort to improve the care of stroke patients with regard to bedside dysphagia screening prior to oral intake.

Purpose

The purpose of this hospital collaboration was to increase overall compliance of bedside dysphagia screening for acute stroke patients by implementing a unified statewide effort.

Methods

Baseline bedside dysphagia screening results were reviewed from 16 SEQIP hospitals. Using an interdisciplinary continuous quality improvement process, SEQIP hospitals shared best practices and dysphagia screening tools, such as Just Add Water, NPO Until You Know, Toronto Bedside Swallowing Screening Test, and other validated screening tools. SEQIP then developed a statewide QI Plan that supported integration of evidence-based bedside dysphagia screening, monitoring, evaluation, reporting and accountability at each member hospital.

Results

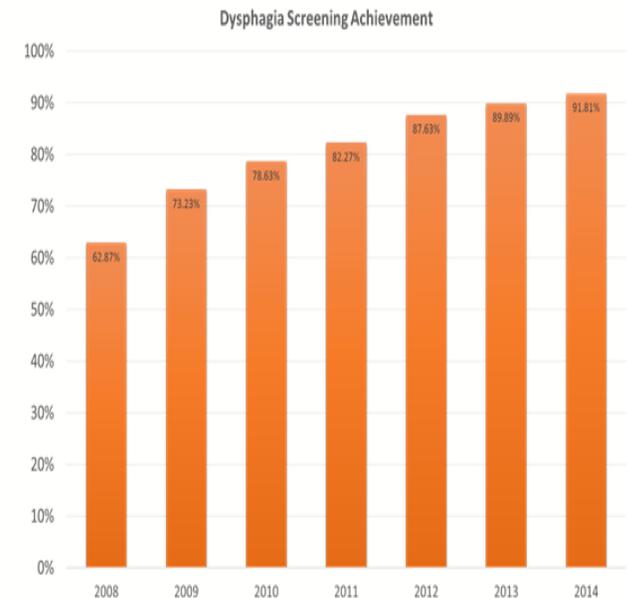
SEQIP's participating hospitals achieved improvement in screening rates compared to 2008 baseline data as a direct result of quality improvement techniques. Between 2008 and 2014, SEQIP achieved a 28.9% increase in proportion of eligible patients (n=27616) receiving screening (from 62.87% to 91.81%). SEQIP hospitals demonstrated year-by-year improvement in performance. In the analysis, statistically significant ($p < 0.001$) improvements occurred in every subsequent year compared to baseline.

Participating Hospitals

Baptist Health Lexington, Baptist Health Louisville, Baptist Health Paducah, Hardin Memorial Hospital, Jewish Hospital, King's Daughters Medical Center, Norton Audubon, Norton Hospital, Norton Women's and Kosair Children's Hospital St. Matthews, Owensboro Health Regional Hospital, Pikeville Medical Center, St. Elizabeth Healthcare, Sts. Mary and Elizabeth Hospital, The Medical Center at Bowling Green, University of Kentucky Healthcare, University of Louisville Healthcare

Conclusions

Collaboration between hospitals, sharing of best practices, identification of evidence-based dysphagia screening tools, and the development of a unified QI Plan resulted in improved statewide compliance with bedside dysphagia screening before oral intake.



ATTACHMENT

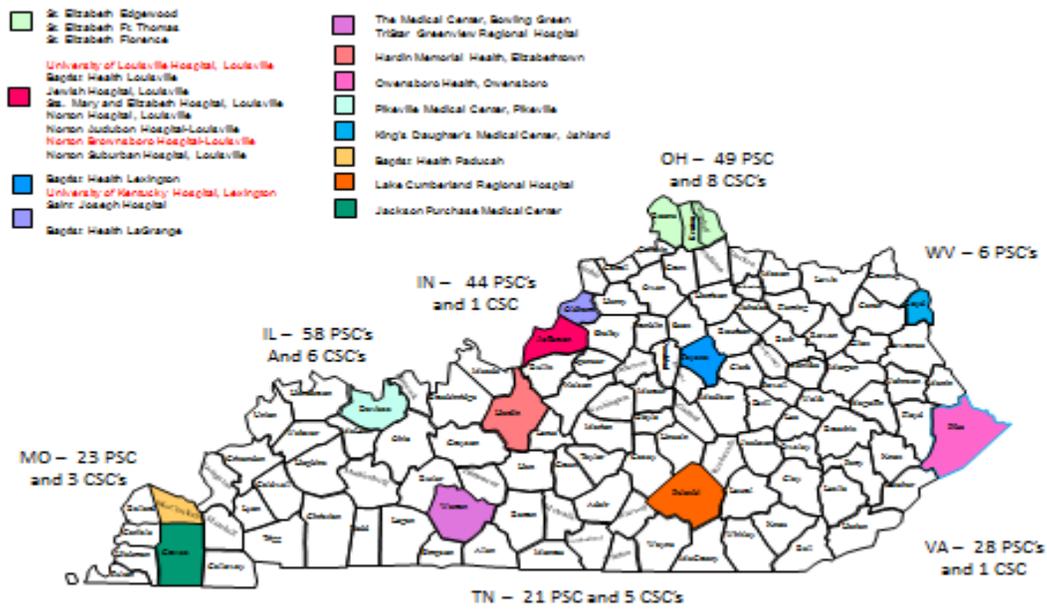
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Kentucky SEQIP Statewide Collaboration Improves rt-PA Administration Rates and Decreases Door to Needle Times



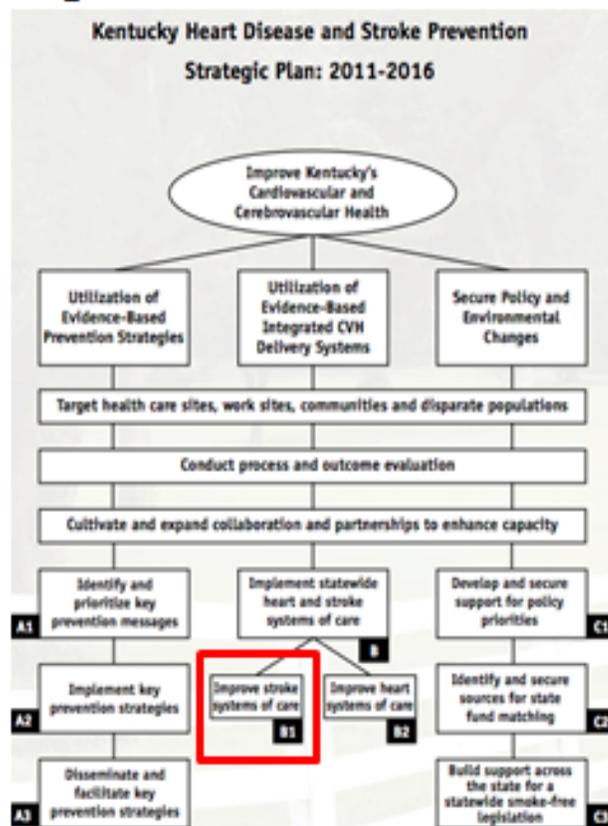
Stroke Encounter Quality Improvement Project (SEQIP)

- Statewide quality improvement initiative developed by the Heart Disease Stroke Prevention Program (HDSP), HDSP Task Force, and AHA/ASA
- Established 2008
- Goal: Implement evidence based integrated cardiovascular delivery systems and to support and advance the quality of care available to stroke patients in Kentucky.
- Designed to encourage collaboration among hospitals and stakeholders in KY
- 16 hospitals in 2008, 23 currently
- First Kentucky Stroke Registry
- All certified stroke centers represented
- Legislative report submitted annually since 2012 – KRS 211.575
 - Governor and Legislative Research Commission



Joint Commission and HFAP Certified Primary Stroke Centers in Kentucky (21) –TJC Comprehensive Stroke Centers (3)

Strategic Plan 2011 - 2016



Background:

- 2nd SEQIP statewide performance improvement initiative
- Improved functional outcome and quality of life with IV rt-PA administration and shorter DTN times
- In KY
 - 60.4% of rt-PA eligible patients were treated in SEQIP hospitals
 - 22.3% treated in < 60 minutes

AIMS:

- Improve rt-PA utilization and decrease Door to Needle times
- Utilize and share best practice models among certified stroke centers and those pursuing certification in Kentucky

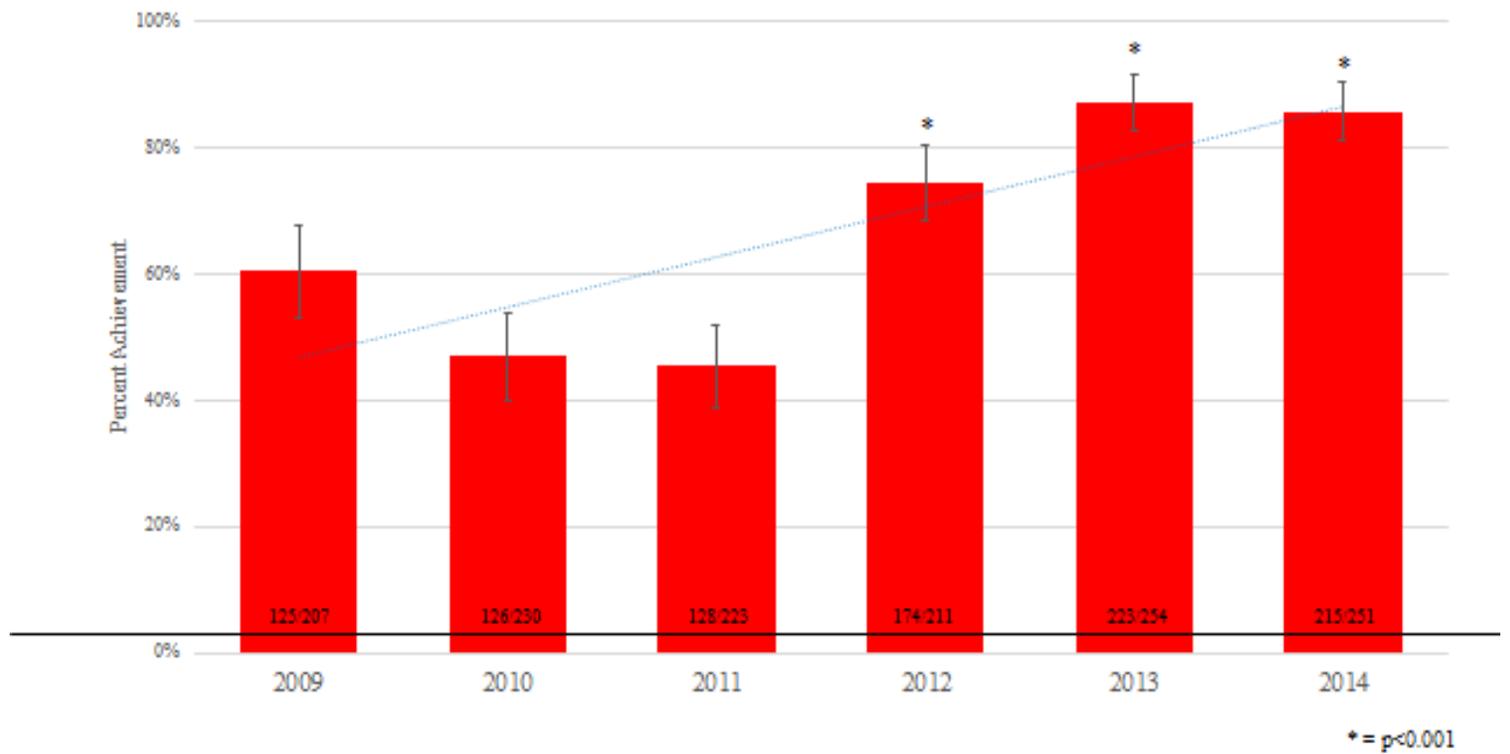
Methods:

- Review aggregate SEQIP hospital performance data from GWTG-S®
- Individual hospitals determine baseline rt-PA administration rates
 - Drill down data to determine why eligible patients may have missed rt-PA administration
 - Generate list of barriers
- Review examples of 2 hospitals triage and rt-PA protocols
- Open forum discussion
 - Strategies
 - Barrier solutions
 - Potential PI processes
- Utilization of Target Stroke
- Accountability
 - GWTG-S® data tracking at face to face meetings

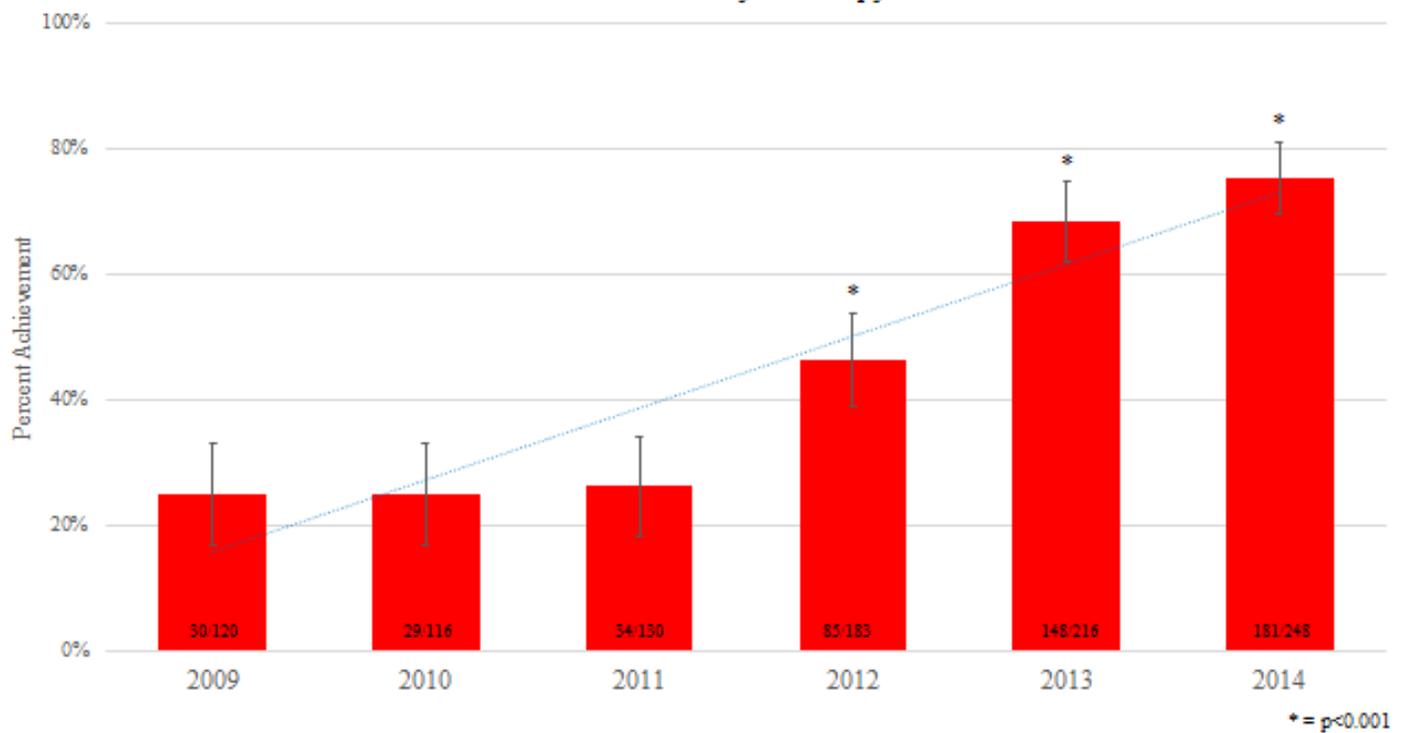
Overall Demographics for SEQIP Hospitals 2009-2014, Arriving by 2 Hours, Receiving IV rt-PA by 3 Hours

Characteristic	Percent receiving IV-TPA in 3 hours	95% Confidence Interval	Eligible Count
Gender by Race			
Black			
Male	70%	(54%, 82%)	[n=46]
Female	48%	(34%, 62%)	[n=54]
White			
Male	68%	(64%, 72%)	[n=591]
Female	64%	(60%, 68%)	[n=599]
Other or Unknown			
Male	100%	(48%, 100%)	[n=5]
Female	80%	(28%, 100%)	[n=5]

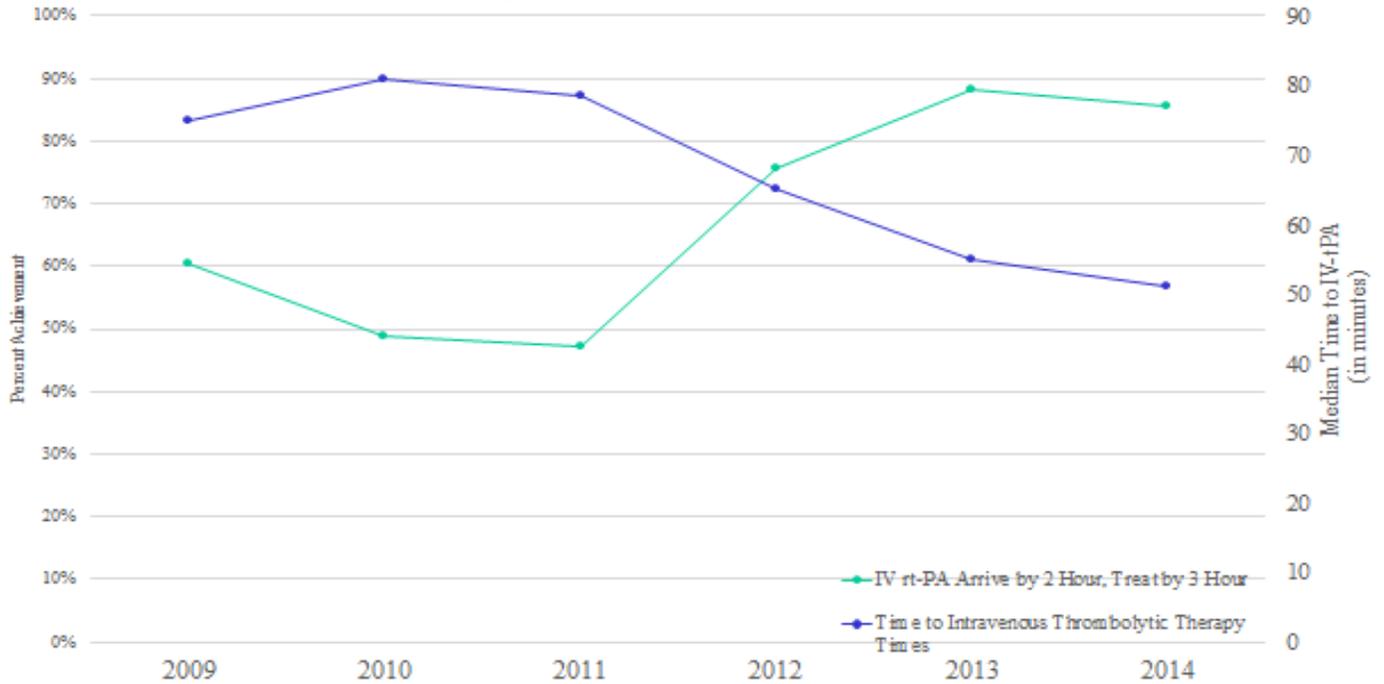
IV-tPA Arrive by 2, Treat By 3 Hours Achievement 2009-2014



Time to Intravenous Thrombolytic Therapy - < 60 min



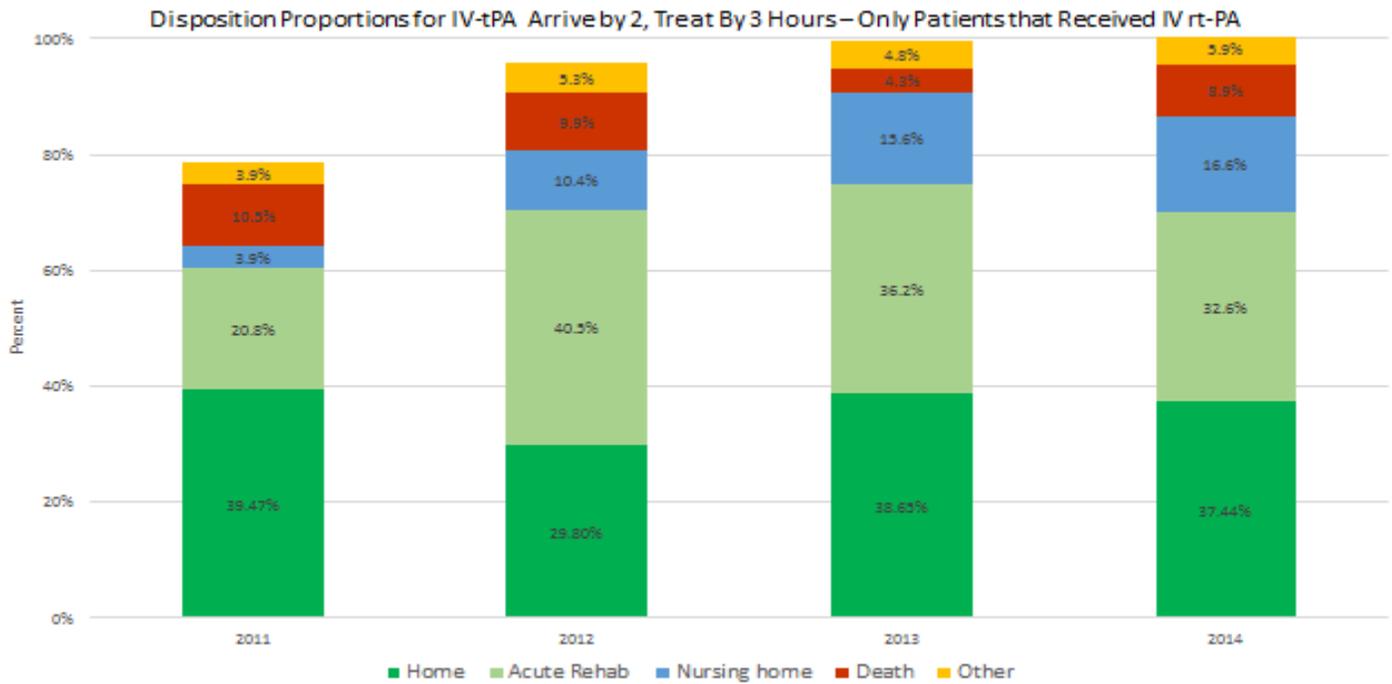
IV-tPA Quality Achievement with Median Time to IV-tPA



KENTUCKY
44.5% in 2012

KENTUCKY
73.4% in 2015





Keys to Success:

- Strong leadership
- Relationship Development
- Clear communication
- Specific, measurable, and scientifically based goals

Next Steps:

- Achieve same results with DTN < 45 minutes
- Review data for disparities
- Enhance data collection
- Continue community education
- Disseminate statewide drip and ship protocol
- Develop and disseminate statewide RN checklist for inter-facility transfers
- Continue to partner with and support hospitals seeking stroke center certification at all levels

Acknowledgements:

- American Heart Association/American Stroke Association
- Kentucky Heart Disease and Stroke Prevention Program
- SEQIP Hospitals:
 - Baptist Health Louisville
 - Baptist Health Paducah
 - Baptist Health Lexington
 - Hardin Memorial Hospital
 - Jewish Hospital
 - King's Daughters Medical Center
 - Lake Cumberland Hospital
 - Norton Audubon Hospital
 - Norton Brownsboro Hospital
 - Norton Hospital
 - Norton Women's and Kosair Children's Hospital
 - Owensboro Health
 - Pikeville Medical Center
 - St. Elizabeth Healthcare
 - Sts. Mary & Elizabeth Hospital
 - The Medical Center at Bowling Green
 - UK Healthcare
 - University of Louisville Hospital