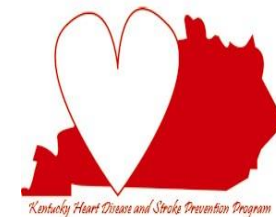


Statewide Collaboration to Improve Alteplase Utilization, Decrease DTN Times, and Impact Outcomes: A 10 Year Review



Kari Moore, MSN, APRN, AGACNP-BC
SEQIP Chair
February 19, 2020
International Stroke Conference





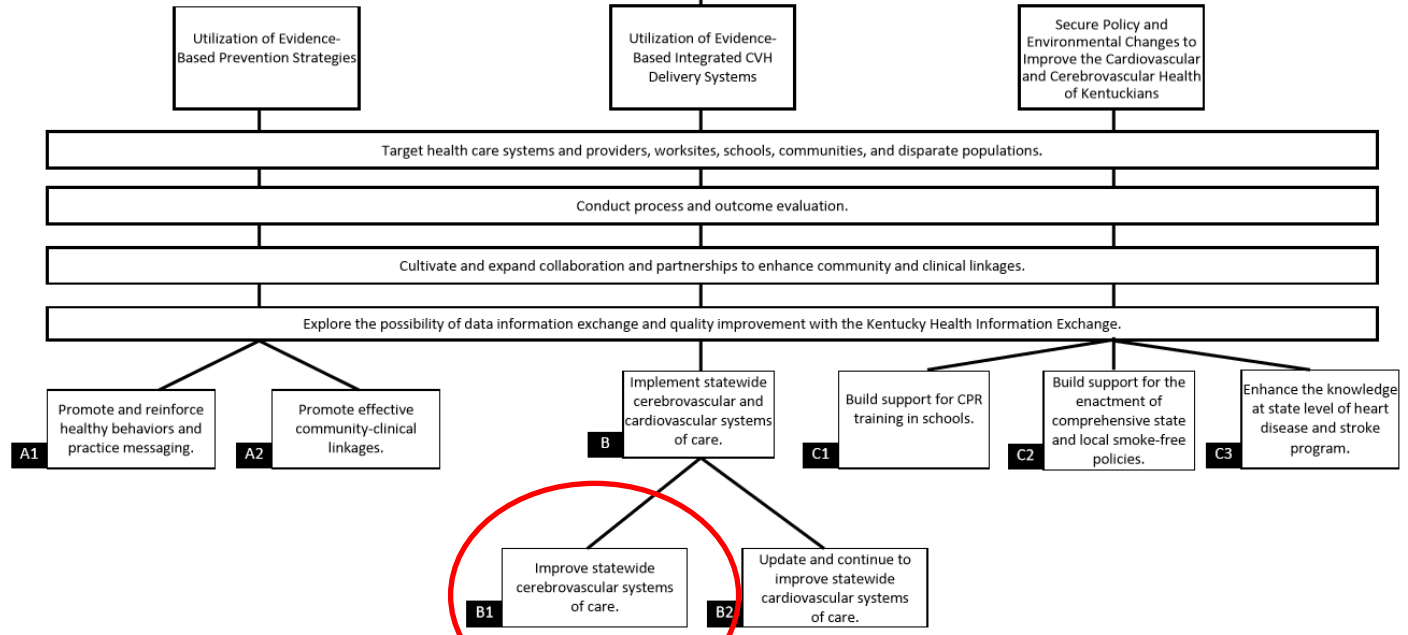
KENTUCKY Heart Disease & Stroke Prevention Task Force

Strategic Map
and Plan
2017-2019



Kentucky Heart Disease and Stroke Prevention Strategic Map: 2017-2019

Improve Cardiovascular
and Cerebrovascular
Health for All Kentuckians.



Stroke Encounter Quality Improvement Project (SEQIP)

- Statewide quality improvement initiative developed by the Heart Disease Stroke Prevention (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
- Initially 16 hospitals in 2008, currently 40 hospitals with 23 contributing SEQIP data to GWTG –S[®]
- First Kentucky Stroke Registry
- All certified stroke centers represented



Kentucky Legislation

KRS 211.575 **Statewide system for stroke response and treatment**

- Department of Public Health shall establish and implement a plan for achieving continuous QI in the quality of care provided under a statewide system for stroke response and treatment.
 - Includes database aligned with stroke consensus metrics
 - Utilization of GWTG or another nationally recognized program
 - Require PSCs to report to the database each stroke case
- Coordination among voluntary organizations to avoid redundancy, sharing of information among HCPs
- Application of evidence-based treatment guidelines
- Data oversight statewide process for PI
- Provide report to Governor annually

Effective: July 12, 2012

History: Created 2012 KY. Acts Ch. 106, sec. 1, effective July 12, 2012

SEQIP Organizational Structure

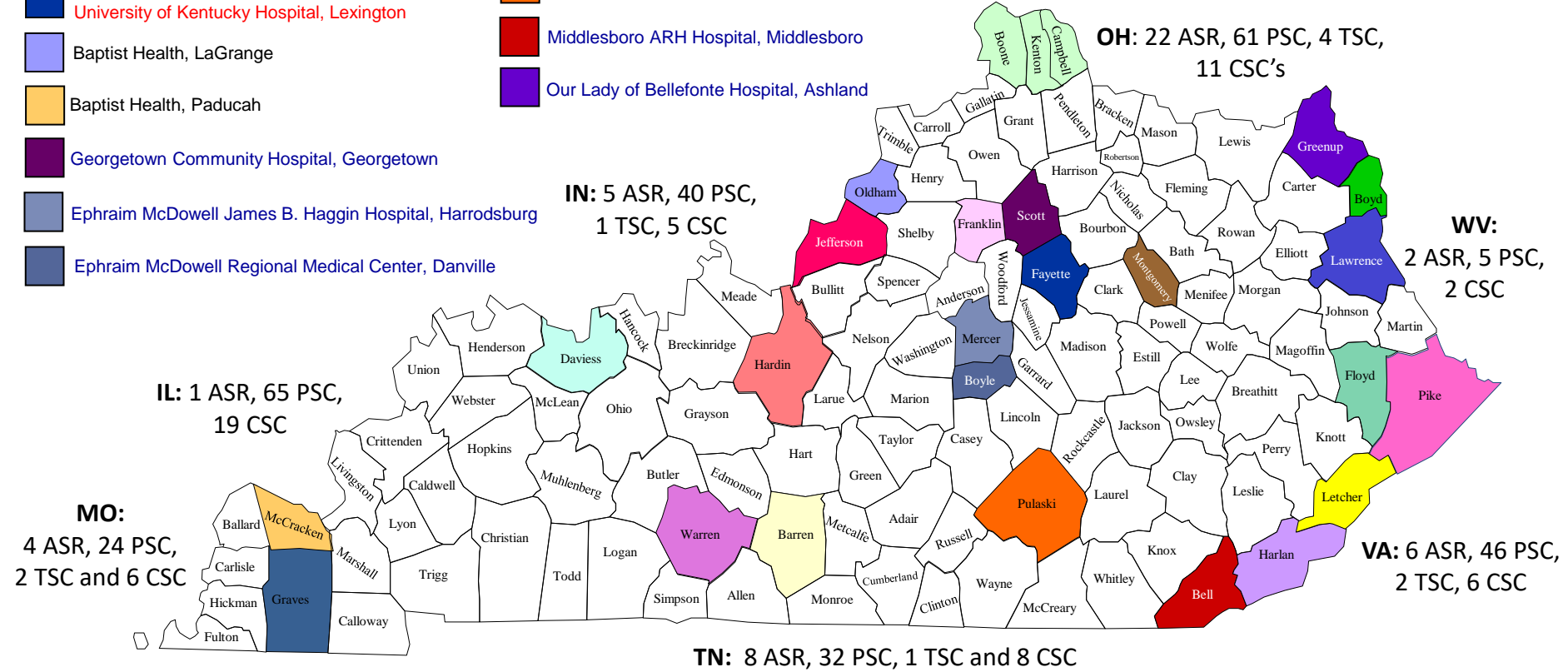
- SEQIP Chair
- Steering Committee – oversight
- Subcommittees with chairs
 - EMS Outreach and Education
 - Disease Specific Care Certification Initiatives
 - Data Analysis and Performance Improvement
 - Navigating the Stroke Continuum of Care
 - Community and Public Health Education and Outreach



- St. Elizabeth, Covington
- St. Elizabeth, Edgewood
- St. Elizabeth, Florence
- St. Elizabeth, Ft. Thomas
- St. Elizabeth, Grant
- Baptist Health, Louisville
- UofL Jewish Hospital, Louisville
- Norton Hospital, Louisville
- Norton Audubon Hospital, Louisville
- Norton Brownsboro Hospital, Louisville
- Norton Women's & Children's Hospital, Louisville
- UofL Mary and Elizabeth Hospital, Louisville
- University of Louisville Hospital, Louisville
- Baptist Health, Lexington
- Saint Joseph Hospital, Lexington
- University of Kentucky Hospital, Lexington
- Baptist Health, LaGrange
- Baptist Health, Paducah
- Georgetown Community Hospital, Georgetown
- Ephraim McDowell James B. Haggin Hospital, Harrodsburg
- Ephraim McDowell Regional Medical Center, Danville

- Frankfort Regional Medical Center, Frankfort
- Hardin Memorial Health, Elizabethtown
- Harlan ARH Hospital, Harlan
- Highlands ARH Regional Medical Center, Prestonsburg
- Jackson Purchase Medical Center, Mayfield
- King's Daughter's Medical Center, Ashland
- Lake Cumberland Regional Hospital, Somerset
- Middlesboro ARH Hospital, Middlesboro
- Our Lady of Bellefonte Hospital, Ashland

- Saint Joseph Mount Sterling, Mount Sterling
- Owensboro Health, Owensboro
- Pikeville Medical Center, Pikeville
- The Medical Center, Bowling Green
- TriStar Greenview Regional Hospital, Bowling Green
- T.J. Samson Community Hospital, Glasgow
- Three Rivers Medical Center, Louisa
- Whitesburg ARH Hospital, Whitesburg



The Joint Commission, HFAP and DNV Certified Stroke Centers in KY:

Comprehensive Stroke Centers (4) Primary Stroke Centers in Kentucky (20) Acute Stroke Ready Hospitals (14)

Background

- Systems change interventions improve care and outcomes
- Geopolitical boundaries have been a barrier to improving regional systems of care
- Despite efforts, alteplase utilization has remained low and DTN times have continued to exceed 60 minutes
- SEQIP created to share best practices and reduce disparate care across the Commonwealth of Kentucky



AIM

Utilize and share best practice models among 23 SEQIP hospitals in Kentucky to improve alteplase utilization, decrease DTN times, and improve outcomes

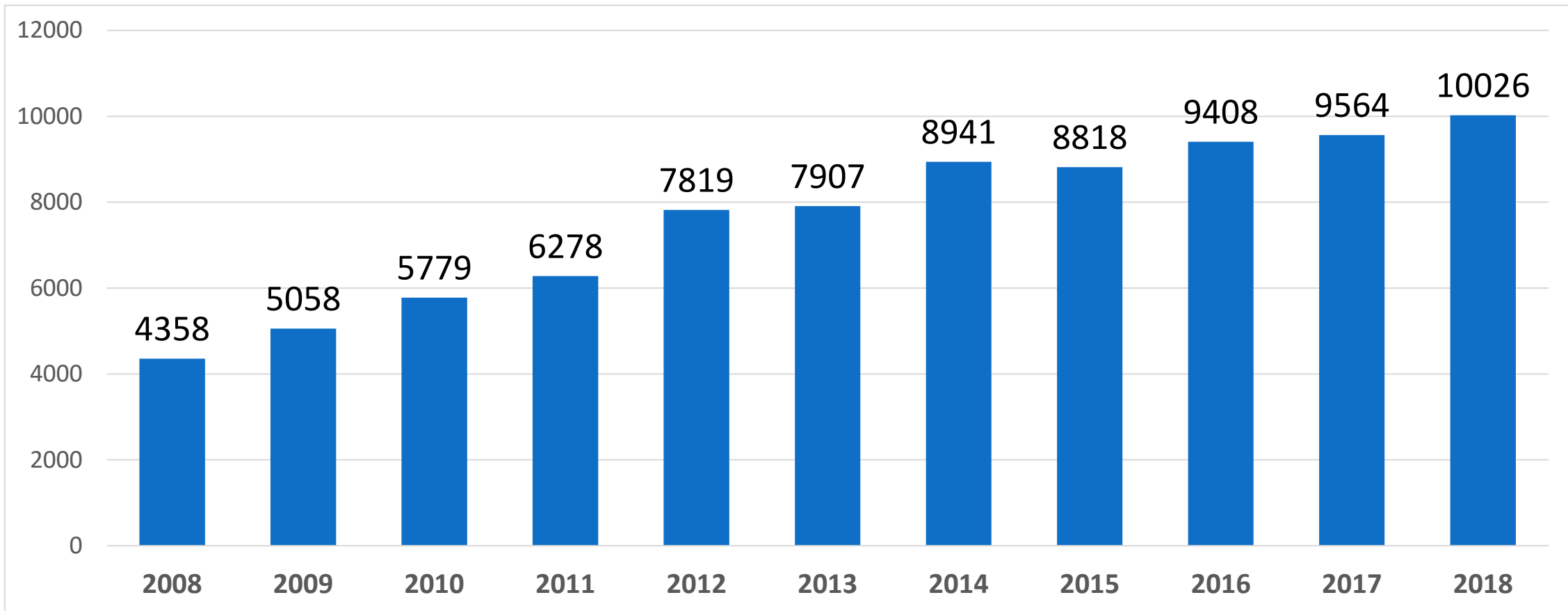


Methods:

- Review aggregate SEQIP hospital performance data from GWTG-S[®]
- Open forum discussion
 - Strategies
 - Barrier solutions
 - PI processes
- Utilization of Target Stroke resources
- Accountability
 - GWTG-S[®] data tracking at face to face meetings

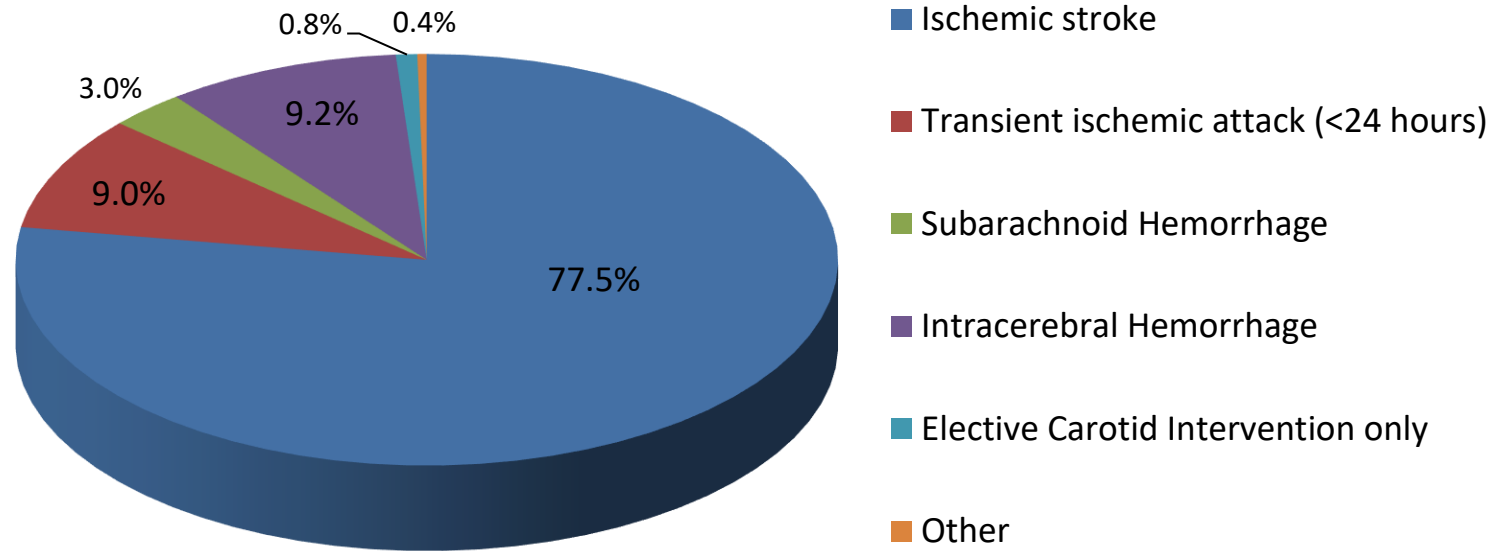


SEQIP Registry Volume

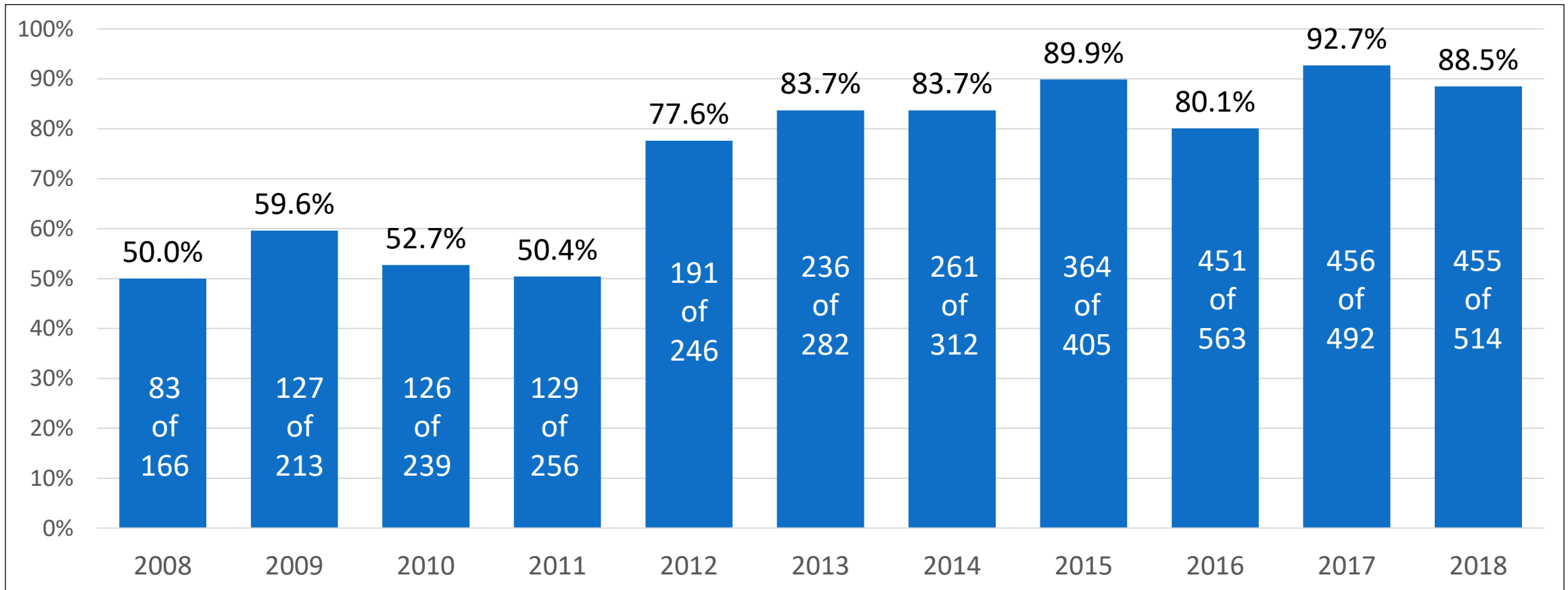


Stroke Types

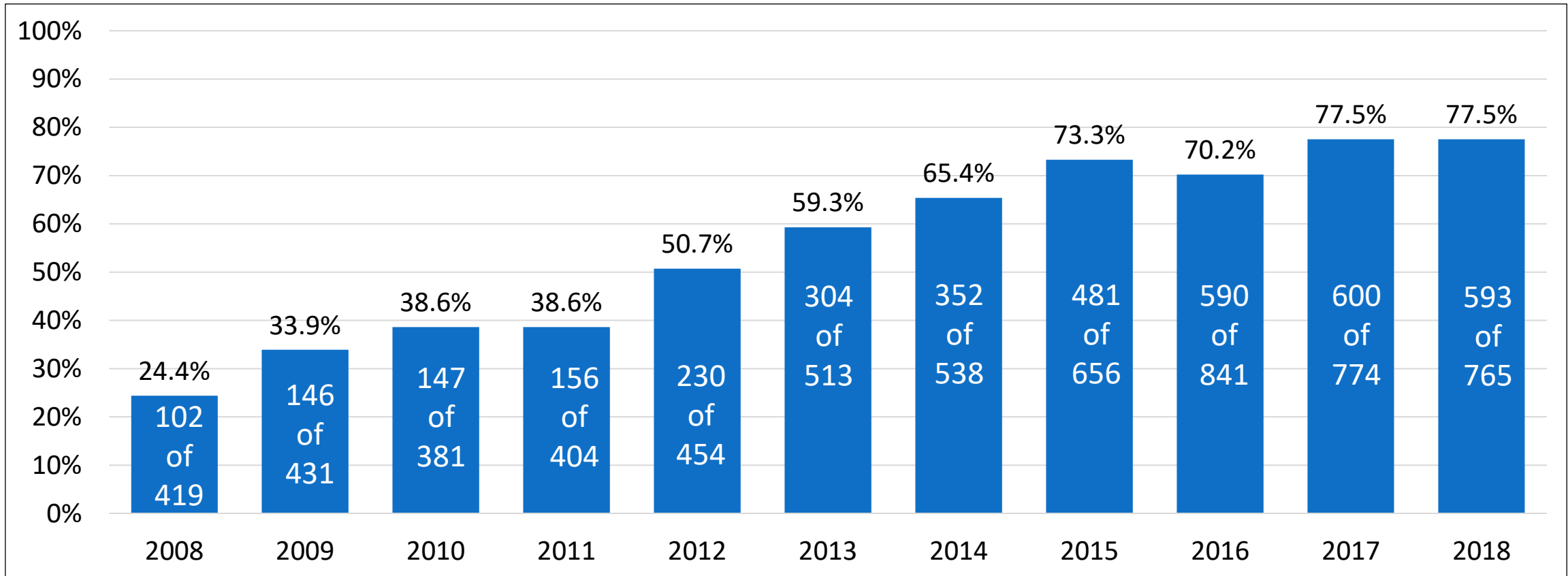
Stroke Type



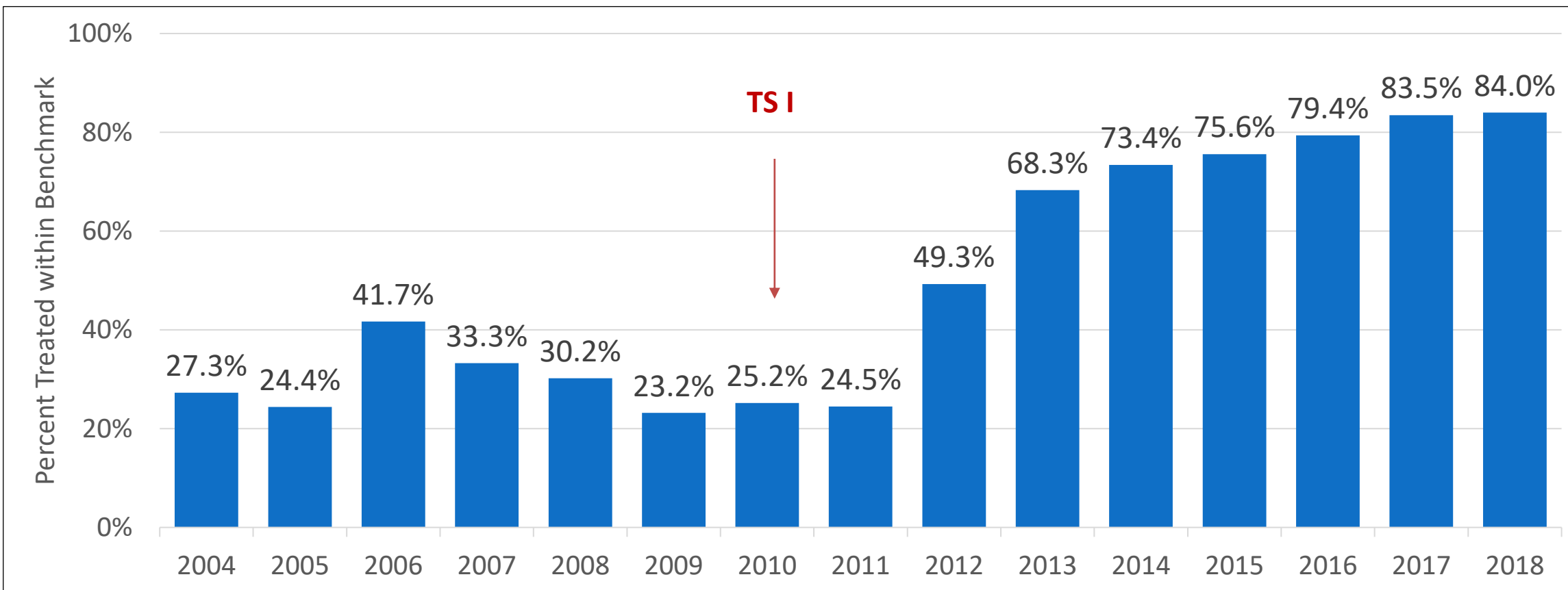
IV Alteplase Arrive by 2 Hour Treat by 3 Hour



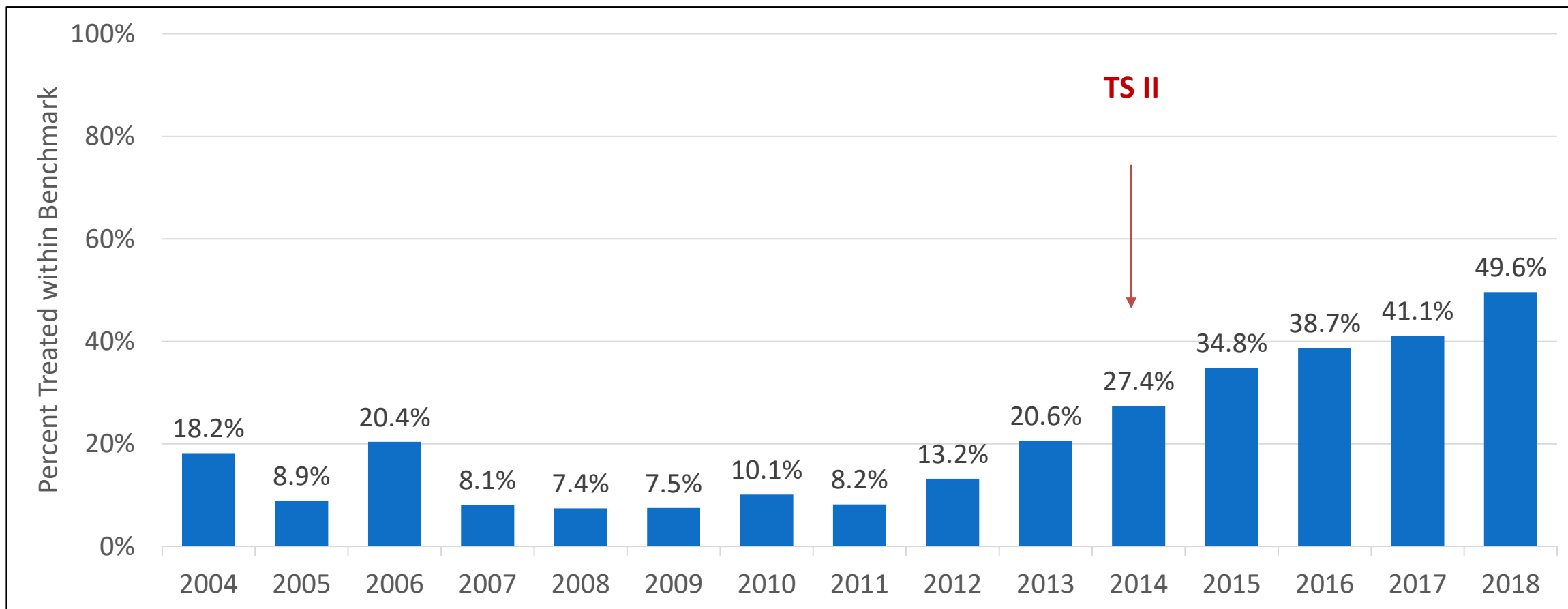
IV Alteplase Arrive by 3.5 Hour Treat by 4.5 Hour



IV Alteplase DTN \leq 60 Minutes



IV Alteplase DTN \leq 45 Minutes



DTN Outcomes

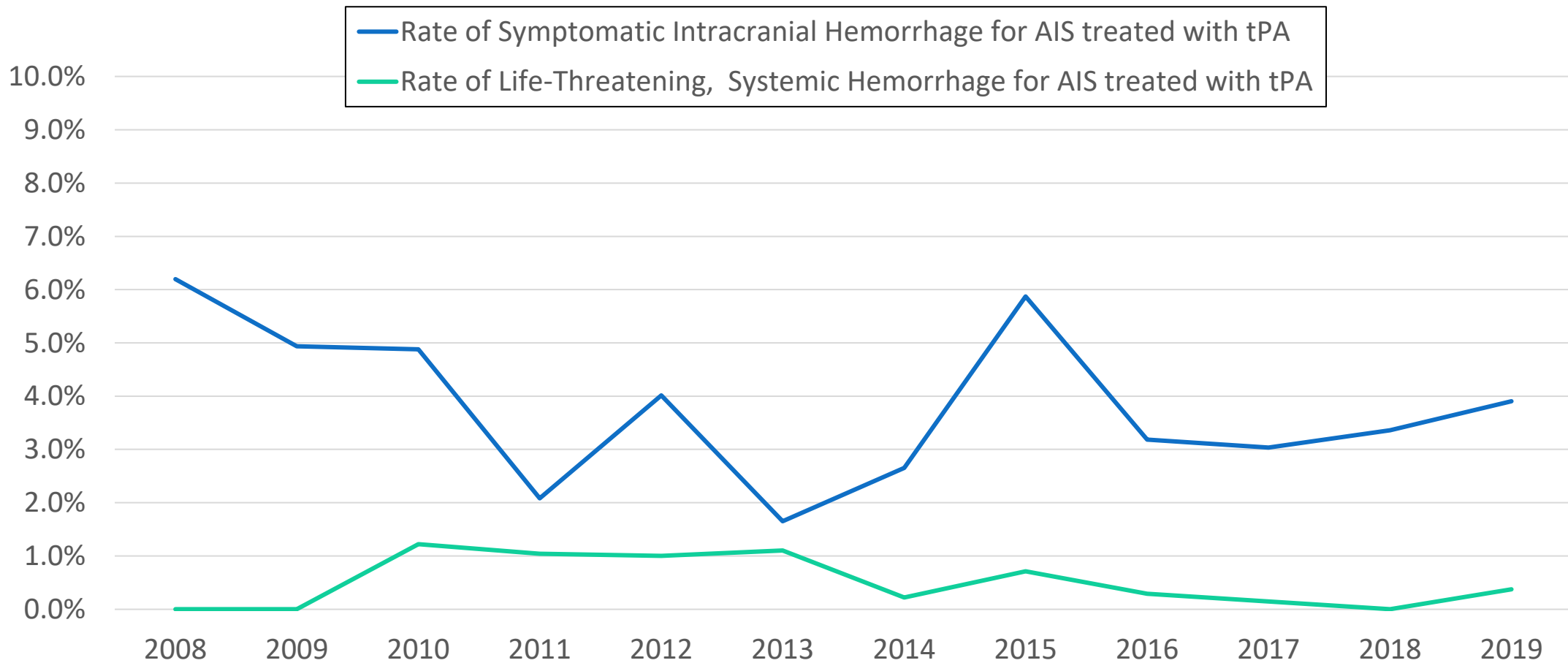
Time Frame	Median DTN (minutes)	DTN Range (minutes)	Mean DTN (minutes)
Pre Target Stroke	73	0-5343	108.8
Phase I	64.5	0-697	71.9
Phase II	46	0-2821	51.9

From Pre TS to Phase 2, the mean decreased by 56.9 minutes (95% CI: 40, 4246, 73.3754) with a significance level of $p < 0.0001$

IV Alteplase (tPA) Outcomes

<u>Alteplase (tPA) n = 4404</u>	<u>2009</u>	<u>2018</u>	<u>OR (CI)</u>	<u>p-value</u>
Percent of all AIS patients receiving tPA	4.61%	8.80%	1.996 (1.671, 2.383)	<0.00001
IV tPA arrive by 2 hours, treat by 3 hours	59.60%	88.50%	5.219 (3.555, 7.702)	<0.0000001
IV tPA Arrived by 3.5 hours Treat by 4.5 hours	27.90%	66.00%	5.008 (3.964, 6.347)	<0.0000001
In Hospital Mortality	11.72%	3.60%	0.3172 (0.173, 0.582)	0.00016
Discharge Home Disposition	28.40%	47.90%	2.318 (1.599, 3.362)	<.0001
Walk Independently at Discharge	32.10%	43.60%	1.6325 (1.137, 2.343)	0.00359

Alteplase Complication Rates

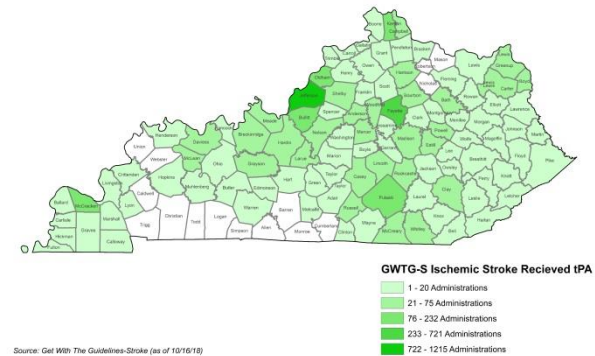


- Partner with Genentech and AHA/ASA on evaluating impact of the Overreact Campaign



- Louisville 1 of 4 US cities with the campaign
- Data pre and post ad campaign
 - Arrival mode to hospital
 - Alteplase utilization
 - Zip code analysis
 - Outcomes

Number of GWTG-S Ischemic Stroke Received tPA by Patient County (n=4,667)



- GIS Mapping GWTG-S data to evaluate, develop, and implement targeted stroke messaging to the community, referral facilities, and EMS
 - Abstract presented AHA QCOR April 2019



SEQIP STROKE CORE MEASURES

Stroke Measure	2009	2018	OR (CI)	p-value
IV tPA arrive by 2 hours, treat by 3 hours	59.60%	88.50%	5.219 (3.555, 7.702)	<0.0000001
IV tPA Arrived by 3.5 hours Treat by 4.5 hours	27.90%	66.00%	5.008 (3.964, 6.347)	<0.0000001
Dysphagia Screening	72.30%	93.00%	5.073 (4.522, 5.691)	<0.0000001
Stroke Education	65.00%	96.90%	16.79 (13.97, 20.29)	<0.0000001
Anticoagulation for Afib/Aflutter	92.00%	98.30%	5.006 (2.950, 8.723)	<0.0000001
LDL Documented	82.10%	95.10%	4.26 (3.701, 4.911)	<0.0000001
Rehabilitation Considered	93.50%	99.10%	7.569 (5.749, 10.06)	<0.0000001
Early Antithrombotic	94.80%	97.50%	2.153 (1.713, 2.707)	<0.0000001
Antithrombotic at Discharge	98.50%	99.60%	3.565 (2.290, 5.631)	<0.0000001
Smoking Cessation	98.50%	99.70%	4.841 (1.912, 13.620)	0.0003273
In Hospital Mortality	8.02%	5.39%	0.6528 (0.5712, 0.7460)	<0.0000001
Discharge Home Disposition	44.68%	49.80%	1.228 (1.148, 1.314)	<0.0000001

Summary/Next Steps:

- Geopolitical Boundaries can be overcome and collaboration can be sustained among competing hospitals through sharing of best practices

Next Steps

- Achieve same results with DTN < 30 minutes
- Review data for disparities
- Enhance data collection and ensure data integrity
- Continue our work with GIS Mapping and utilization of GWTG-S to determine use with targeted community messaging
- Evaluate Genentech Overreact Campaign utilizing SEQIP registry data
- Continue to collaborate and share best practices to reduce stroke disparate care in Kentucky



Acknowledgements

- American Heart Association/American Stroke Association
- Kentucky Heart Disease and Stroke Prevention Program
- SEQIP Hospitals

*Founding Member
Red– Contributes Data

Baptist Health Louisville*

Baptist Health LaGrange

Baptist Health Lexington*

Baptist Health Paducah*

Ephraim McDowell Regional Medical Center

Ephraim McDowell James B. Haggin

Fleming County Hospital

Frankfort Regional Medical Center

Georgetown Community Hospital

Hardin Memorial Health

Harlan ARH

Highlands Regional Medical Center

Jackson Purchase Medical Center

U of L Jewish Hospital*

King's Daughters Medical Center*

Lake Cumberland Regional Hospital*

Middlesboro ARH Hospital

Morgan County ARH

Norton Audubon Hospital*

Norton Brownsboro Hospital

Norton Hospital*

Norton Women's and Children's Hospital*

Our Lady of Bellefonte Hospital

Owensboro Health Regional Hospital*

Pikeville Medical Center*

Saint Joseph Hospital

Saint Joseph Mount Sterling

St. Elizabeth Covington

St. Elizabeth Edgewood*

St. Elizabeth Florence

St. Elizabeth Ft. Thomas

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TJ Samson Community Hospital

TriStar Greenview Regional Hospital

UK Healthcare*

University of Louisville Hospital*

Whitesburg ARH Hospital

