VA BEACH EMS
EMERGENCY MEDICAL SERVICES
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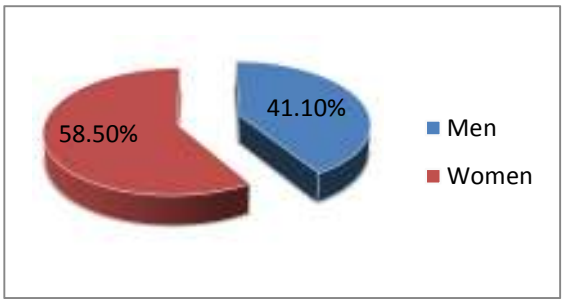
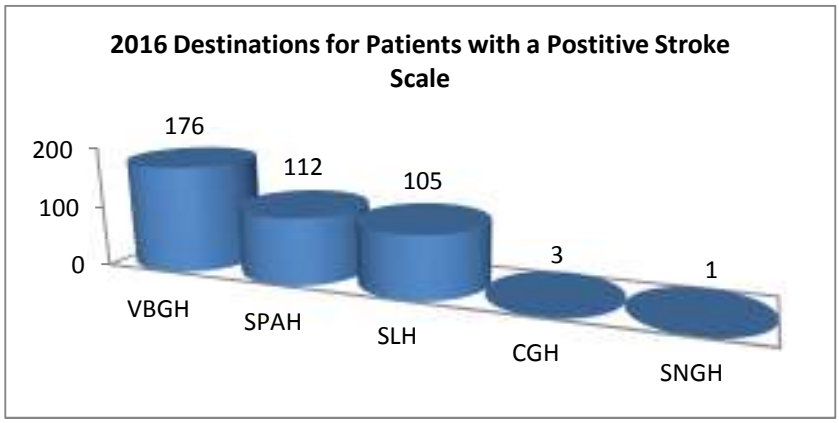
Prehospital Stroke Care in Virginia Beach-CQI Report and Update

According to the 2016 American Heart Association Statistical Update, approximately 795,000 people in the United States suffer from a stroke every year. Someone has a stroke about every 40 seconds and in 2013, someone died from a stroke every four minutes. In 2011 and 2012, the average annual "cost" of a stroke was $33.0 billion. Just under 90% of all strokes are ischemic with the rest involving an intracerebral hemorrhage. (Dariush Mozaffarian, 2015)

Virginia Beach is fortunate to have a comprehensive stroke system of care. The City of Virginia Beach Department of Emergency Medical Services (VBEMS) trains members of all levels of care in stroke assessment and utilizes the Tidewater Emergency Medical Services Council Inc. (TEMS) Prehospital and Interhospital Regional Stroke Triage Plan. The plan is designed to create an emergency care system that will result in decreased mortality and morbidity in the TEMS region. It defines how to assess for a stroke and where to transport a suspected stroke. (Workgroup T. E., 2015)



In 2016, the average age of our stroke victims was 70 years old. Nearly 60% of our patients were women.



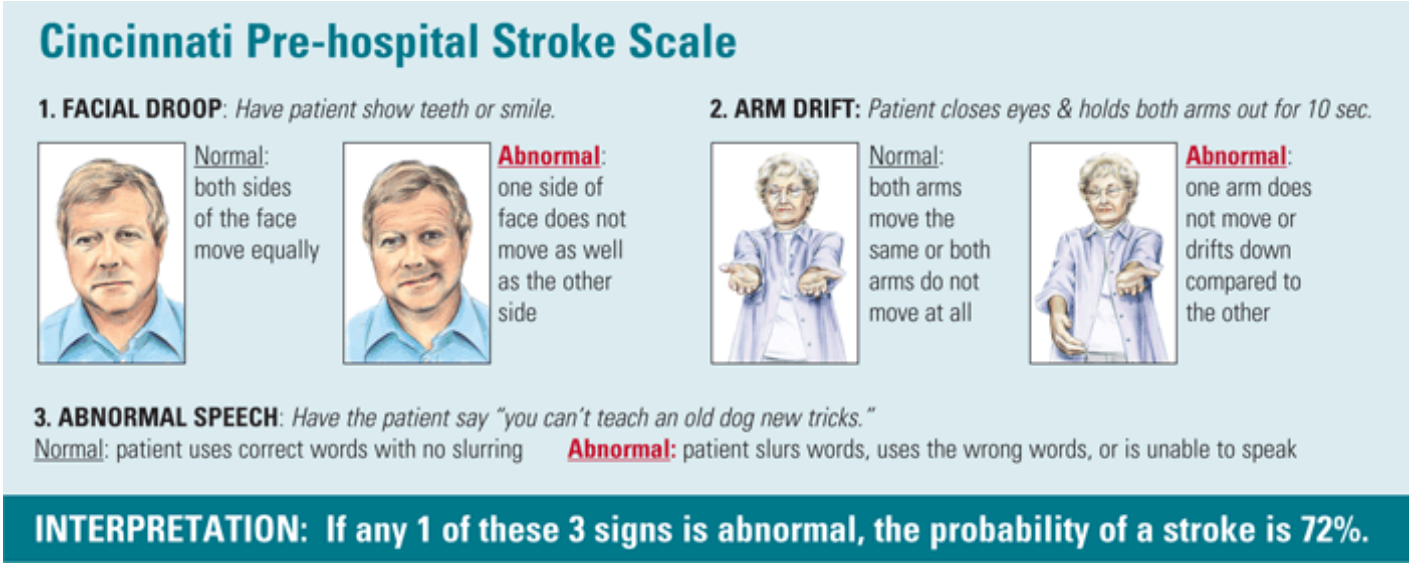
Patients suspected of having a stroke should be transported directly to a Designated Stroke Center. These facilities hold Primary Stroke Center Certifications by an accrediting body and means they operate an acute stroke program with consistent stroke coverage. *In our catchment area, the Designated Stroke Centers include the following hospitals: Chesapeake Regional Medical Center, Sentara Leigh Hospital, Sentara Princess Anne Hospital and Sentara Virginia Beach General Hospital.*

Some key benchmarks for our stroke patients include the following:

- *Ambulance onscene time goal of 15 minutes or less*
- *Assessing and documenting the prehospital stroke scale*
- *Determining the exact time the symptoms began*
- *Obtaining and documenting a blood glucose reading*
- *Direct transport to a Designated Stroke Center with ALS*
- *Transport with lights and sirens when symptoms started within the past three hours*

Many of our Designated Stroke Centers have enacted stroke plans that allow for a very quick Emergency Department assessment and then the patient is taken straight to the CT scanner on the VBEMS stretcher. This allows for faster imaging and less delays with transitions and turn overs.

Stroke treatments typically include tissue plasminogen activator (tPA) which can dissolve the clot. It only works in ischemic strokes and usually when administered within three hours. Time can be extended in some cases or an endovascular procedure may be an option for some of these patients. This would be performed in addition to tPA and retrieves the clot more directly. Hemorrhagic strokes require surgery to removed blood from the brain and/or stop bleeding vessels. Sometimes the endovascular procedures can be used to treat certain types of strokes.



VBEMS members should continue to perform proper stroke scale assessments---the Cincinnati Prehospital Stroke Scale (CPSS), obtain exact time of symptom onset, a complete set of vital signs, blood glucose monitoring, and 12 lead EKG. If the stroke scale is positive in any way, providers should limit the time onscene with a goal of only 15 minutes, contact the hospital as soon as possible (even just an early heads up with a more detailed follow up later), transmit the 12 lead EKG and initiate ALS procedures such as an IV. Patients should be transported directly to a Designated Stroke Center with their head elevated at 30 degrees. (Workgroup T. E., 2015)

Remember TIME IS BRAIN! *Much like trauma and STEMI patients, stroke patients also require rapid load and go and transport. Stroke patients should be onscene for no more than 15 minutes. Lights and sirens should be considered if the stroke symptoms started within 3 hours. If arrival at the hospital will take more than 30 minutes, air transport can be considered.*

For 2017, let's work on our documentation of items such as stroke scale, blood glucose and the exact time that the symptoms started. We are working on changing some report rules to help you with documenting the right things. In the meantime, all assessment items should be clearly documented as well as the **exact** time of symptom onset in the electronic prehospital patient care report. And let's work on making a team effort to shorten our onscene times and transport quickly to the nearest Designated Stroke Center with ALS. We will reevaluate in a few months to see how much our system has improved in these areas and with your help, we can definitely make a difference!

Stroke Benchmarks

2015		2016		Goal	**Assessment Benchmarks** – All patients with Possible stroke	2016 Jan-June		2016 Jul-Dec	
701		738			Number of possible strokes from provider impression	315		359	
611	87%	580	79%	100%	Number of patients with stroke scale documented	271	86%	252	70%
683	97%	685	93%	100%	Number of patients with time of symptoms documented	298	95%	326	91%
563	80%	623	84%	100%	Number of patients with Blood Glucose documented	280	89%	304	85%
2015		2016		Goal	**Treatment Benchmarks** --- All patients with Positive Stroke Scale	2016 Jan-June		2016 Jul-Dec	
429		401			Number of patients with positive stroke scale	195		166	
481	97%	377	94%	100%	Number of patients with time of symptoms documented	184	94%	155	93%
365	85%	353	88%	100%	Number of patients with blood glucose documented	181	93%	143	86%
280	65%	281	70%	90%	Number of patients with Ambulance time onscene 15 minutes or less	144	74%	123	74%
417	97%	397	99%	100%	Number of patients transported directly to Designated Stroke Center	193	99%	164	99%

(Green is within 5% of goal, Yellow is within 15% and Red is anything greater than 15% away from goal)

Works Cited

Dariush Mozaffarian, e. a. (2015, December 16). *Heart Disease and Stroke Statistics--2016 Update: A Report From the American Heart Association.* Retrieved January 9, 2017, from American Heart Association: http://circ.ahajournals.org/content/early/2015/12/16/CIR.0000000000000350.citation

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