STROKE ADVISORY COUNCIL MEETING MINUTES
August 19, 2021
Stroke System of Care, Part II
Webinar 10 - 11:30 am

Members/Partners

Present: Wally Ainsworth, NC Office of Emergency Management Services (NCOEMS); Michael Aquino, UNC Health; Sue Ashcraft, Novant Health; Andrew Asimos, Atrium Health; Amanda Barnette, Mission HCA Healthcare; Lisa Benavente, NCSU; Melanie Blacker, FirstHealth; Joseph Bowman, UNC; Michelle Bradley, UNC Johnston Health; Olivia Broomer, Cone Health; Anna Bess Brown, Justus-Warren Heart Disease and Stroke Prevention Task Force (JWTF); Nicole Burnett, UNC Health; Amber Carter, Cone Health; Shannon Chesney, Duke; Arnett Coleman, Old North State Medical Society, JWTF member; Jason Cooke, Novant; Ron Cromartie, Innovative Healthcare Consulting; Tom Curley, New Hanover Regional Medical Center (NHRMC); Yolanda Dickerson, AHA, JWTF member; Vinodh Tommy Doss, NHRMC; Chelsea Dunston, Atrium Health; Matthew Ehrlich, Duke Health; Michael Erwin, BELIEVE Stroke Recovery Foundation; Abby Fairbank, American Heart Association (AHA); Meg Fenu, WakeMed; Heather Forrest, Duke Health; Ned Fowler, Mission HCA; Melissa Freeman, Duke Health; Nick Galvez, NC Office on Rural Health; Bre Hager, Caromont Health; Lesli Hall, Novant Health; Lindsey Haynes-Maslow, JWTF member, NCSU; Larissa Hill, WakeMed; Gina Howell, Appalachian Regional Healthcare; David Huang, JWTF member, UNC Health; Nada El Husseini, Duke Health; Amy Ising, NC DETECT; Sarah Jacobson, AHA; Ed Jauch, Mission HCA; Rayetta Johnson, WFBH; Stuart Johnson, Vidant Health; Amber Jones, Novant; Robin Jones, Mission Health; Essete Kebede, NC DPH Community & Clinical Connections for Prevention & Health (CCCPH); Joanna Keeter, Vidant Edgecombe; Mitchell King, UNC Health; Jennifer Koebel, Caromont Health; Karissa LaClair, Cone Health; Sowmya Lakshminarayanan, Novant; Diomelia Laues, Cape Fear Valley Medical Center; Sydney Lawrence, Lake Norman Regional Medical Center; Erin Lewis, UNC Health; Gladys Lundy-Lamm, Minority Women Health Alliance (MWHA); Sarah Lycan, WakeMed; Penelope McCabe, Onslow Memorial Hospital; Jason McCullough, Charlotte Radiology; Barb McGrath, FirstHealth; Sandra Maney, Genentech; Catherine Michael, WFBH; Elizabeth Mills, Novant; Tom Mitchell, NCOEMS; Lisa Monk, Duke; Julia Mora, AHA; Kathy Nadareski, WakeMed; Darrell Nelson, WFBH; Kali Nixon, Vidant; Karen Norman, Registered Nurse; Peg O'Connell, Stroke Advisory Council (SAC) chair; Emily Parks, Novant; Mehul Patel, UNC Emergency Medicine; Diane Perkins, Atrium Health; William Pertet, DPH CCCPH; Ruth Phillips, JWTF member, Community Health Coalition; Dawn Phipps, Davis Regional; Joey Propst, JWTF member; Sharon Rhyne, DPH Chronic Disease & Injury; Birtha Shaw, Diabetic Supply; Tish Singletary, DPH CCCPH; Alan Skipper, NC Medical Society; Linda Smith, Outer Banks Hospital; Denise Spaugh, MWHA; Christy Stowe, Catawba Valley; Julie Teachey, Vidant; Jackie Thompson, UNC Health; Jessie Tucker III, Wayne UNC Health; Sarah Van Horn, Blue Ridge Health; Hannah Ward, Mission HCA; Marie Welch, RN; Tripp Winslow, NCOEMS; Erika Yourkiewicz, NHRMC.

Welcome, Introductions

Chair Peg O'Connell

Chair Peg O'Connell welcomed and thanked all for attending this August 2021 Stroke Advisory Council (SAC) meeting. This meeting was recorded and is posted at startwithyourheart.com.

Peg called for Council members to approve minutes from the following meetings:
February 26, June 10, Aug 28, and Nov 12, 2020 and March 9 and May 10, 2021. With no objections being expressed by members, the minutes were approved.

Peg thanked emergency responders, doctors, nurses, and other care providers for the work being done as COVID cases continue to rise.

North Carolina Stoke Services Survey: Preliminary Results, Dr. Mehul Patel, Assistant Professor UNC Department of Emergency Medicine

Dr. Patel shared preliminary results from the survey and thanked the Division of Public Health for their efforts on the survey and for collecting responses from all 112 NC hospitals. On behalf of the survey work group, Dr. Patel encouraged feedback on interpreting the results.

Dr. Patel explained that the purpose of the survey was to get a snapshot of hospital-based stroke capabilities in NC, examine geographic differences and urban-rural disparities, and explore changes over the past 20 years with a goal of understanding stroke care better. The survey was emailed to all 112 licensed hospitals and asked questions including those about diagnostic imaging, protocols in place, and post-acute management. 109 hospitals reported providing acute stroke care. 58% of those 109 hospitals have Stroke Center Certification; the survey asked about barriers to achieving certification. Open ended responses included lack of staffing, resources, and leadership support. We can look at systematically exploring how SAC may support those that want to get stroke certified.

Acute stroke capabilities have come a long way since past surveys. Almost all (99%) provide alteplase, and far fewer (15%) provide endovascular therapy.

Hospitals reported on protocols and programs with 90% having an acute stroke clinical stroke pathway and 91% reporting an EMS activation protocol. 79% have transfer protocols.

Staffing: 24% have an in-house neurologist to respond to acute stroke, and only 10% have a neurologist 24/7. 82% responded they use telestroke to respond to stroke with 72% relying exclusively on telestroke.

Dr. Patel invited all to provide feedback on today's presentation during the meeting and by email to Anna Bess. The next steps include mapping geographic variation, using data to understand urban-rural differences, comparing to 3 prior surveys dating back to 1998, and looking at trends. We will also examine responses to the open-ended questions. We'll provide a report to SAC and partners. We asked if respondents would be interested in learning more about SAC. Many said yes; this provides a great opportunity to reach out and engage. This level of response speaks to how dedicated our hospitals are to improving stroke care.

Questions for the stroke community: What jumped out at you? What's surprising? The survey work group is interested in your feedback. We can follow up with hospitals if need be. Send your feedback to Anna Bess, and we'll take it to the survey work group.

Q: Were any barriers in general common across settings? Surprised by how many use telestroke.

A: We haven't gotten that far yet and will look at common barriers.

Q: Are CSCs that don't transfer patients out included in stroke transfer percentage?

A: They do not need to be included in the denominator in that question. That's a good point. We'll look at pulling those CSC hospitals out.

Q: What do the 3 hospitals that do not provide stroke care do with stroke patients?

A: They may not have an ED. We can dig deeper.

See Dr. Patel's slides, and please send your feedback and questions.

Coverdell Stroke Program Update, Anna Bess Brown, Executive Director of the Justus-Warren Heart Disease and Stroke Prevention Task Force

Anna Bess gave an update on the implementation of the CDC Coverdell Stroke Program grant. We are working on getting the budget in place and the contract with NC HealthConnex, our Health Information Exchange (HIE) partner that will build the registry, approved. We have written a Request for Applications (RFA) which will be released Oct. 4 requesting proposals for QI projects, and we're seeking approval to hire Program Coordinator and Evaluator staff.

Stroke Systems of Care, Part II Panel Presentation: Dr. Ed Jauch, Mission Health expert on stroke systems of care; **Dr. Andrew Asimos**, Medical Director, Carolinas Stroke Network, Atrium Health; **Dr. Darrell Nelson**, committee lead of the NC College of Emergency Physicians, revised stroke triage and destination plan for the state; **Dr. Tripp Winslow**, NC OEMS Medical Director; and **Wally Ainsworth**, NC OEMS Regional Manager; **Robin Jones,** Stroke Program Manager Mission Health, will present The Role of the Stroke Coordinator.

Dr. Jauch congratulated everyone on getting the Coverdell grant which is a great opportunity for the state and on Mehul's work on the survey.
He shared the final draft of the EMS Triage and Destination Plan for assessment of patients with acute ischemic stroke and to include those identified in field of having a potential Large Vessel Occlusion (LVO). This revised plan and report are the result of the work of many on the call and is a good example of how partners can work collaboratively to create a patient-centric outcome.
This Plan reflects the standard of care as in the 2019 AHA Acute Ischemic Stroke Guidelines:

A) Patients should be screened for stroke and assessed for LVO using a screen to quantify the degree of their deficits.

B) Depending on Last Known Well, Plan gives guidance to regions and EMS agencies given uniqueness, resources, and time. Goal is to minimize unnecessary transfers and to minimize unnecessary triage from the field.

C) Plan is meant to serve as a template or starting point for the entire state to be modified in the region to reflect what region can provide.

Key takeaways:

- Engaging all stakeholders was key to achieving a solution within the framework of the overall state stroke plan.
- Approach, to the greatest extent possible, was based on scientific data and current guidelines.
- Utilizes existing mechanisms for state EMS oversight
- Continues to utilize local stroke systems of care to best implement protocols in their region
- Highlights need for data moving forward

Peg noted that stakeholder group prepared a response to Prehospital Bill S683and submitted it to Senator Perry Aug. 13. We did confirm he received it.

Dr. Asimos recognized Darrell Nelson and Tripp Winslow's work to incorporate feedback on the revised Stroke EMS Triage and Destination Plan. Implementation is always the most challenging part of any planning. This plan is designed to be tailored to each region. It's important for each EMS agency to pick whichever LVO screen works for them and important to track data.

Q: What scale will be used by EMS for LVO?

A: Dr. Nelson noted that regions may make that decision. Dr. Asimos said there may be a variety of scales in use around the state.

Q: Are all NC EMS agencies being asked to select, train, and implement on severity screening in addition to the stroke screening tool?

A: Dr. Nelson responded yes; expectation is there is a stroke screening and a severity component.

Dr. Winslow added that every EMS system is required by rule to have a Stroke and LVO Triage and Destination Plan which requires use of scores; therefore, they'll have to be trained.

Q: Who and how determines the X's in boxes?

A: Dr. Nelson: Those are determined by EMS agencies and regional stroke facilities that they transport to.

Dr. Nelson, NCCEP EMS Protocol Committee, explained that this final draft has been approved by the NCCEP EMS Protocol Committee and must be approved by the Board of Directors before final approval. We don't anticipate any changes.

Anything in purple is for local agencies to fill in. This is a template and not a protocol until the region fills in numbers. First thing is to identify stroke partners. Highlights: on page 2 if critically unstable patient, EMS may divert to closest facility that can best help; also, all stroke patients should be triaged and transported using this plan, and all agencies will collaborate on work flows for patients requiring a higher level of care.

Stroke severity and LVO score should be determined with all stroke partners so as not to set too low to avoid over-triage.

He shared the EMS decision-making process for Acute Stroke using the Plan in one rural example. In rural Stokes County a patient has a suspected stroke: RACE score 4, LKW 3.5 hours. We have two ASR hospitals just across county line and 3 CSCs 40-60 minutes away. Time and severity important in where patient should go. 1) Decide what screening and screening severity tool to use, 2) Set severity cut-off for LVO, 3) Estimate transport times to facilities. Consider geography and roads from patient location. 4) Reperfusion check list.

In our region we've set RACE score at 6 for LVO in an effort not to over-triage.

Say the region set RACE Score at 5. We must decide whether to go to ASR or CSC. EMS would decide to go to ASR with 20-minute transport time.

Dr. Winslow, NC OEMS Medical Director, thanked Dr. Nelson for taking feedback and revising the template, and he expressed gratitude for all members for the productive discussions among all.

Q: Are traffic concerns considered in EMS transport decisions?

A: Traffic concerns are considered in all transportation situations.

Q: Will there be additional training for EMS on how to establish LKW rather than when someone saw a patient on the ground? Is there a method to provide consistent documentation of contact information for the next of kin especially when a patient may be taken to a hospital never taken to before?

A: Dr. Nelson: Yes, this info is listed in "Pearls" section of the Plan. Make every effort to obtain information for next of kin and document in the process. The process may differ per region. In our region partners do gather and train together every two years.

Q: Where does training come from?

Answer: Tripp Winslow reported training should come from 2 areas, the local medical director and the stroke system local hospitals should provide and work with EMS. Training is the responsibility of the EMS agency.

Q: Who is making the decisions on training, guidance for EMS crews? Would it be helpful to use a data driven tool to automate with specific data?

A: Dr. Winslow: This is probably best done locally.

Q: What is the proposed protocol for EMS-involved wrecks and estimated time of arrival to medical facility?

A: Dr. Nelson: There are a number of field triage plans for trauma, burns, STEMI. There are 8 trauma regional advisory councils across the state that are involved in the planning of local transportation times.

Q: What is the timeline for EMS local destination plans?

A: Wally: These are required and need to be submitted to the office of OEMS for approval within 90 days before implementation. We usually turn it around in less than a week. Training must occur before plan can be implemented.

Dr. Patel thanked all for the work that has been done on the Stroke EMS Triage and Destination Plan. He commented on the recent research on using the Cincinnati stroke scale for LVO screening. It looks at potentially using 2-3 abnormal findings on the Cincinnati scale for LVO. None of the LVO scores are known for high rates of accuracy. It may be a simple way for local EMS agencies to implement what they've already been doing and possibly doing well.

Robin Jones thanked the group that worked to make the changes to the Plan. She added that she has the upmost respect for first responders and EMS who make decisions in the field based on initial presentation. We know the story can change.

Robin has served on the Stroke Advisory Council since 2008 and is the only nurse member. As a stroke coordinator Robin noted that she has learned from SAC colleagues. Seeing the data from the surveys, it is amazing to see the state's progress in stroke care. She explained that when she started with SAC, east of I-95 was completely void of stroke hospitals aside from the hospital in Greenville. Impassioned stroke care providers make the difference. In her 20 years Robin has advocated for partners, patients and the community.
Lessons learned: You may be the only person with the title "stroke coordinator," but you do not have to do all the work. Phone a friend. Partnering with other providers gives learning/coaching opportunities when the challenge becomes overwhelming. In the early days of the NC Stroke Care Collaborative we formed a support group "Stroke Coordinators without Borders."

AHA/ASA hosts Stroke Coordinator boot camps and valuable education information on their website stroke.org. Genentech has long supported the stroke coordinator role; they and others in industry can partner to provide education as hospitals seek certification.

Robin shared a March 2021 study which reports a difference in the qualifications of folks serving as stroke coordinators. In the US most are RNs while outside the US stroke coordinators are primarily physicians. Does this have an impact on stroke patient outcomes? Of the 70% of respondents who reported interest in receiving stroke care development resources, the aspect deemed most important was improvement in stroke nursing knowledge/care (81% from the US and 71% of those outside the US). We may want to look at the role of the stroke coordinator as a state as we look at results from our NC survey.

Often people look to the stroke coordinator to make it happen. The stroke coordinator must bring the people together even though those individuals don't report to the stroke coordinator.

We are here to work together. We are Stroke Coordinators without Borders. Robin's email address is Robin.Jones4@HCAHealthcare.com

Tom Curley noted that Robin is the reason that NHRMC was able to develop a stroke program and become a comprehensive stroke center.

Peg closed the meeting and thanked everyone who presented, served as panelists, and attended. Although we'd love to gather in person, we will meet by webinar in November due to the high rate of infection across our state. Wear your mask and be safe.