STROKE ADVISORY COUNCIL MEETING MINUTES
May 10, 2021
Stroke Awareness and COVID Response
Webinar 3 - 4:30 pm

Members/Partners

Present: Wally Ainsworth, NC Office of Emergency Management Services (NCOEMS); Susan Ashcraft, Novant Health; Andrew Asimos, Atrium Health; Simone Barter, WakeMed; Joe Bernard, Carolina Neurosurgery & Spine Associates; Sherene Bitar, UNC School of Medicine, Department of Neurology; Melanie Blacker, FirstHealth; Joseph Bowman, UNC; Tara Box, Novant Health; Heather Bradley, DHHS; Michelle Bradley, UNC Johnston Health; Anna Bess Brown, Justus-Warren Heart Disease and Stroke Prevention Task Force (JWTF); Jim Burgin, NC Senator, JWTF member; Nicole Burnett, UNC Health; Cathleen Bury, Duke; Cheryl Bushnell, Wake Forest Baptist Health (WFBH); Amber Carter, Cone Health; Cherylee Chang, Duke; Shannon Chesney, Duke; Sylvia Coleman, COMPASS Study, WFBH; Arnett Coleman, Old North State Medical Society, JWTF member; Tom Curley, New Hanover Regional Medical Center (NHRMC); Rizza de la Guerra, Johnson & Johnson; Bruce Derrick, Duke; Bryan Devinney, Advent Health; Cynthia Dixon, Ashe Memorial; Pam Duncan, COMPASS Study, WFBH; Abigail Egan, American Heart Association (AHA); Matthew Ehrlich, Duke; Carolyn Ellis, UNC; Michael Erwin, BELIEVE Stroke Recovery Foundation; Abby Fairbank, AHA; Wayne Feng, Duke; Heather Forrest, Duke; Melissa Freeman, Duke; Rebecca Freeman, Aging and Adult Services, JWTF member; Sara Ginn, UNC Wayne; Emily Gobble, Central Carolina; Kaitlyn Goforth, Eckel & Vaughan; Joseph Grover, UNC; Tom Guthormsen, Laerdal Medical Corporation; Amy Guzik, WFBH; Lesli Hall, Novant Health; David Huang, UNC; Nicole Hudson, Burke County EMS; Nada El Husseini, Duke; Mary Jackson, Mission HCA; Sarah Jacobson, AHA; Ed Jauch; Mission Health; Rayetta Johnson, WFBH; Stuart Johnson, Vidant Health; Robin Jones, Mission Health; Joanna Keeter, Vidant Edgecombe; Mary Jo Kelley, WakeMed; Mitchell King, UNC; Katie Knowles, Vidant Health; Michelle Kuerbitz, Durham VA; Elizabeth Larson, Duke; Diomelia Laues, Cape Fear Valley Medical Center; Sydney Lawrence, Lake Norman Regional Medical Center; Josh Lewis, Mission; Tori Ludwig, Eckel & Vaughan; Monique Mackey, Area L AHEC; Ruth Marescalco, NHRMC; William Marx, Mission HCA; Penelope McCabe, Onslow Memorial Hospital; Diana McClinton, Caldwell Memorial; Martha Ann McConnell, Atrium Health; Jennifer McConnell, Atrium Health; Barb McGrath, FirstHealth; Megan McKinney, HCA Healthcare; Desiree Metzger-Cihelka, Mission HCA; Catherine Michael, WFBH; Anne Miller, AHA; Sarah Sue Miller, Laerdal Medical Corporation; Nicolle Miller, UNC Asheville; Tom Mitchell, NCOEMS; Kim Mullinax, Johnson & Johnson; M. Mullis, WFBH; Kathy Nadareski, WakeMed; Darrell Nelson, WFBH; Karen Norman, Novant Health; Peg O'Connell, Stroke Advisory Council (SAC) chair; Brandy Olive, Ashe Memorial; Chantal Olsen, Duke; Mehul Patel, UNC Emergency Medicine; Iranthi Peiris, WFBH; Diane Perkins, Atrium Health; William Pertet, DPH Community & Clinical Connections for Prevention & Health; Ruth Phillips, Health Happenings; Dawn Phipps, Davis Regional; Danielle Price, Atrium Health; Joey Propst, JWTF member; Julia Retelski, Atrium Health; Jeremy Rhoten, Atrium Health; Sharon Rhyne, DPH Chronic Disease & Injury; Christina Roels, Novant Health; Wayne Rosamond, UNC Gillings Global School of Public Health; Karen Seagraves, Atrium Health; Alexander Schneider, Mission Health; Birtha Shaw, Diabetic Supply; Alan Skipper, NC Medical Society; Courtney Smith, UNC; Chuck Tegeler, SAC vice chair; Kimberly Titzer, Sampson Regional Medical Center; Sarah Van Horn, Blue Ridge Health; Ronda Vani, Atrium Health; Susan Vick, Fetzer Strategic Partners; Angie Wagner, Novant Health; Hannah Ward, Mission HCA; Marie Welch, RN; Renee White, Vidant Health; Heather Williams, Vidant Health; James Winslow, WFBH; Tripp Winslow, NCOEMS; Erika Yourkiewicz, New Hanover Regional Medical Center (NHRMC); Joseph Zalkin, National Association of EMS Physicians

Welcome, Introductions
Chair Peg O'Connell
Chair Peg O'Connell welcomed and thanked all for attending the Stroke Advisory Council (SAC) meeting. Peg indicated that because of the interest in systems of care, we have a number of guests on the webinar. There has been a great deal of discussion about Prehospital Stroke Protocol Senate Bill S683, and we have a group working on it; if you'd like to join that group, let Anna Bess know. Today we bring all partners to the table to focus on NC's stroke system of care. Peg explained that proponents of the bill indicated that the bill was created largely as a placeholder in order to get the conversation started around stroke systems of care. The plan is for all of the stroke partners and stakeholders to come together to reach a good decision for North Carolina. Our goal is for all stroke patients to get the best care that can possibly be delivered in our state. We've been working on stroke systems of care for a long time so we want to do anything we can to make it better and not do anything to derail those efforts.

Hospital Survey
In attempting to understand what stroke care is being provided around the state, we sent out Stroke Services surveys to all 112 NC hospitals, and we received 112 surveys! Thank you to each of you who took the time to complete the survey. We have tons of data thanks to you. The Survey work group is meeting now to begin the analysis. Thank you to each hospital for participating. We hope that we have many new colleagues on this webinar who learned about SAC through the survey. Welcome! We're so glad you're here, and we invite you to join our efforts to make stroke care, stroke prevention, and stroke treatment better in North Carolina.

Peg introduced each of the presenters: **Dr. Ed Jauch,** an expert on stroke systems of care and works at Mission Health, was lead author on American Heart Association's **Recommendations for Regional Stroke Destination Plans** published last month; **Dr. Chuck Tegeler,** Chair of Neurology at Wake Forest Baptist Health and SAC vice chair, gave a brief State of the State on the NC Stroke System of Care; **Dr. Darrell Nelson** leads the committee of the NC College of Emergency Physicians that writes all the policies, protocols, and triage and destination plans for the state. He was joined by **Dr. Tripp Winslow**, NCOEMS Medical Director, and by **Wally Ainsworth**, NCOEMS Regional Manager and SAC member; **Dr. Amy Guzik** discussed Regional Stroke System Support through Telestroke; and **Dr. Alex Schneider and Robin Jones** from Mission Health and **Dr. Andrew Asimos** of Mecklenburg County's system shared examples of two regional systems of care. All slide presentations are posted on Start with Your Heart.com

Stroke Systems of Care
Recommendations for Regional Stroke Destination Plans – Ed Jauch, Chief of System Research, Mission Health
Dr. Jauch started his presentation with stating the need to establish a common data dictionary for what we mean when we describe a system of care. In describing a system of care, Dr. Jauch explained that we need structure and processes in health care delivery systems, but we are really interested in patient-centric outcomes. There is not a one size that fits all, but the goal is the same for all. The goal is to create an organized, coordinated effort in a defined regional area that delivers the full range of care to all patients and is integrated with the local public health system. All of this is layered on top of a continuous quality improvement program. The true value of a system of care is derived from the seamless transition between each phase of care, integrating existing resources to achieve improved patient outcomes. The success of the system of care is largely determined by the degree to which it is supported by public policy. He described the Recommendations for Regional Stoke Destination Plans in Rural, Suburban and Urban Communities and added that guidelines are not intended to be prescriptive and that they require

collaboration and transparency for optimal implementation.

Dr. Jauch shared common definitions of accreditation, certification, designation and legislation. Dr. Jauch also shared examples of precedents for systems of care: 1) an American Stroke Association Policy Statement on Recommendations for the Establishment of Stroke Systems of Care on behalf of the American Heart Association, and 2) Mission: Lifeline Stroke which is not meant to be prescriptive but establishes a framework and a template for starting conversations and dialog within regions. See Dr. Jauch's slides.

A Comprehensive Stroke Center should be a centralized resource that works with the other resources in its region. He shared the consensus paper from a 2018 conference on the State of Stroke in Los Angeles (LA) County (10 million people and 88 cities) which described unique considerations for rural, urban, and suburban areas and led to the creation of the thrombectomy-capable stroke center. He shared information on impact, common principles, and recommendations for modifications. He explained the importance of communicating with EMS and said that coordinated, inter-facility transfer is crucial. Recommendations for rural, suburban and urban settings are a starting point.

See a summary document and rural, suburban and urban infographics at Stroke.org/stroketransportplans.

State of the State: NC Stroke System of Care – Chuck Tegeler, Vice Chair, Stroke Advisory Council; Chair, Neurology Department, Wake Forest Baptist Health
Dr. Tegeler reviewed the State of the State in stroke, highlights on stroke work in the state through the years, and the NC Stroke System of Care which was developed in 2019. He shared Guiding Principles developed by the Stroke Advisory Council. He explained the goals and format of the NC Stroke System of Care which guides SAC work. See slides for details.

Stroke Protocol, Triage & Destination Plans
Darrell Nelson, Professor of Emergency Medicine, Wake Forest Baptist Health; Tripp Winslow, Medical Director, NC Office of Emergency Management Services; Wally Ainsworth, Regional Manager NC Office of Emergency Management Services
Dr. Nelson shared information on the state's Stroke Protocol, Triage & Destination Plans. Purple boxes indicate areas that can be edited at the local level. Local medical directors may add specific guidance. See his presentation for key areas that can be updated. Stroke is an evolving condition, and things change rapidly; emphasis is on EMS working with regional stroke care providers. He shared the current and proposed state stroke triage and destination guide.

He stated that North Carolina has robust laws governing EMS treatment protocols, policies, procedures, and triage and destination guides. NC College of Emergency Physicians (NCCEP) is responsible for updating protocols, policies and procedures. When NCCEP finalizes a version, it is then referenced into rule immediately. Dr. Nelson also shared current EMS laws and General Statutes related to medical oversight for EMS; NC has laws that require training, triage and destination guidelines, written treatment protocols, standardized statewide protocols, and a peer review committee.

He explained that stroke care is local and regional. EMS systems currently are expected to partner with hospitals to form a transportation strategy which optimizes stroke care. North Carolina leads most states in the speed of changing protocols when evidence demonstrates the need for change.

Dr. Winslow, Medical Director with NC OEMS, works closely with NCCEP, regional specialists, and regional managers to help oversee care across the state. They give feedback to EMS systems and act as an intermediary between different EMS systems and hospitals when necessary. They focus on providing technical assistance and evidence-based process for making changes to protocols. In his role, he approves any changes that counties make to the North Carolina protocols, reviews triage and destination plans, and makes sure that the system is working well.

Regional Stroke System Support through Telestroke
Amy Guzik, Director, Comprehensive Stroke Center, Wake Forest Baptist Health
Dr. Guzik shared a map of NC Telestroke sites from 2016. She explained that telestroke is a great way to address some of the regional differences. In NC there are disparities in stroke morbidity and mortality. Telestroke brings the physician to the patient. Dr. Guzik shared unique features of WFBH network which has two main models: 1) Local Model – Hub and Spoke which offers preferential bed placement, rapid and facilitated transfer; and 2) State Model – Contracted Services which offers fee for service and provides support for distant health systems including WakeMed and Vidant/ECU. There isn't a one-size-fits-all model for Telestroke. They are different models for various areas of the state. Dr. Guzik spoke of the successful, unique partnership between Wake Forest Baptist Medical Center and Vidant Health which has allowed Vidant to develop a strong stroke system. Telestroke has been a good way to address regional access issues. See posted slides.

Mission's Stroke Network
Alexander Schneider, Medical Director, Comprehensive Stroke Program; Robin Jones, Stroke Program Manager, Mission Health
Dr. Schneider described Mission HCA Hospital's Comprehensive Stroke Center (CSC) and five member hospitals in 18 counties. Mission CSC is the only Comprehensive Stroke Center and the only mechanical thrombectomy center in western NC. For six months they've been using tenecteplase rather than the traditional alteplase. For over 20 years, the Western North Carolina (WNC) Stroke Network has built a network based on relationships with EMS, hospitals, and the community with mutual goals to give each patient the best chance at optimal recovery. Key elements of the network include: telehealth, collaborative partnerships with EMS and local hospitals, and feedback to key stakeholders and frontline providers. He noted the unique challenges related to western North Carolina's topography and time needed to account for travel distances. Dr. Schneider shared Stroke EMS Triage and Destination Plans and explained that WNC uses the RACE scale. Setting standards higher than national standards drives their success. He also shared WNC's Transfer Triage Guidelines. See posted slides.

Mecklenburg County's Approach to Regionalized Acute Stroke Care
Andrew Asimos, Medical Director, Carolinas Stroke Network, Atrium Health
Dr. Asimos emphasized the importance of bringing all stakeholders in the region together to collaborate on the region's stroke system of care. He showed a map with Mecklenburg County's two CSCs and four hospitals and listed questions the region needed to answer before implementing a regional routing protocol. He shared information from the PLUMBER cross-sectional study (the **P**revalence of **L**arge Vessel Occl**U**sion stroke in **M**ecklen**B**urg County **E**mergency **R**esponse) which found 5% of all patients had an LVO (includes dispatch); he noted to expect to see about 10% with LVO. He mentioned a review which was commissioned by the Stroke Association to support the 2018 Guidelines for the Early Management of Patients with Acute Ischemic Stroke. The published results indicated that more prospective studies are needed to assess the accuracy of large vessel occlusion (LVO) prediction instruments in the prehospital setting in all patients with suspected stroke including patients with hemorrhagic stroke and stroke mimics. Ultimately the American Stroke Association revised the 2018

guidelines. Regional work is critical for needs of the particular region and its resources. He shared studies analyzing the FAST-ED scale and RACECAT study and cautioned against routing patients to CSCs. See posted slides.

Q&A: Peg summed up the importance of bringing stakeholders together to determine what is best for the region and using QI processes to improve care. She noted that at the first stroke meeting she attended, they discussed not running lights and sirens because there was generally noting they could do for suspected stroke, and now we're talking about 15 minutes from pick up to door. Remarkable.
Dr. Guzik remarked that she saw that NC has 10 CSCs and 35 primary stroke centers. Abby Fairbank with AHA added that five hospitals are in the process for certification.
Dr. Schneider asked if any hospitals are looking at extended use of tPA (up to 9 hours) changing any of their local protocols.
Dr. Asimos responded that they'll be looking at it in Mecklenburg County, that there will be a lot of logistical issues.
Dr. Schneider noted that some of it could be CT perfusion study protocol-based; and added that Mission is interested in it yet wants to keep it simple, internal.
Dr. Asimos agreed saying that science is changing rapidly, and we must be nimble.

Peg added that at the end of the webinar, participants will receive a 10-question survey on today's webinar. Please complete it to help us plan future meetings.

2021 Stroke Advisory Council Meetings
Thursday, August 19, 10-11:30 AM
Tuesday, November 2, 1-2:30 PM