

NOTES

Stroke Coordinators' Call

March 27, 2024

2:00 pm – 3:00 pm

I. Welcome and Introductions

II. Join the Stroke Advisory Council:

- Quarterly meetings, work groups, monthly Updates, website startwithyourheart.com
 - [Stroke System of Care](#)
 - **The Stroke Advisory Council** virtual meeting held on March 6th [Novant Health's Community Health Worker Program](#) proceedings have been posted.
 - **Upcoming dates:**
 - June 13, 1-2:30 virtual via Teams
 - **September 25, 2024 in-person at Atrium Health in Charlotte.** We will also hold an **in-person Stroke Coordinators meeting** in conjunction with this Stroke Advisory Council meeting.
-

III. Business/Housekeeping:

- **Next call: April 24th 2-3 pm** via Teams
- **April Call:** As we all begin to prepare for Stroke Awareness Month in May, we've heard from some members and would like to use your April call to have a discussion around successful strategies for increasing #s of stroke patients coming to the hospital via EMS, reducing private owned vehicle (POV) arrivals; and include the impact on hospital triage practices. We are looking for volunteers to be part of a panel for that call. This would not be a formal presentation but a few folks who have tried some outreach and education strategies they've found to be effective. **Who'd like to volunteer to share in April?** Also, please forward specific questions you'd like to discuss to Terri (terri.moore@dhhs.nc.org).
- **Reminder:** We now have all past SC call slides, notes, and recordings on our website. The link was sent in a previous email, and we will post in chat: [LINK](#)
- **Reminder/Update:** NC Medicaid still covers blood pressure monitors. This item must be obtained from an enrolled NC Medicaid DME Supplier. (See "Action Items" below for further ideas)
 - Policy NC Medicaid Nursing Equipment and Supplies Clinical Coverage Policy No: 5A-3 <https://medicaid.ncdhhs.gov/5a-3-nursing-equipment-and-supplies/download?attachment>

Decisions:

Last month we discussed gathering bariatric scanning capabilities of hospitals in regions of the state. However, after further discussion and research we have not found a stroke protocol for dealing with individuals with obesity that can be generalized and recognize that each facility will need to develop its own.

We sent out an email on 3/1/24 providing some things to think about in developing a protocol for your facility.

Each entity will have differing priorities. **(This is the information that was in that email for your reference.)**

So, take some time to reflect on the newfound awareness and think through the following with your stroke team.

To treat bariatric stroke patients:

- Do you have equipment to weigh these patients?
- What are the weight limits for your emergently available CT and MRI machines?
- What are the IR table weight limits?
- What are the OR weight limits (in the event of hemorrhage)?
- If your facility has critical care transport, what are the weight limits?
- Given the comorbidities of these patients, think through what resources you have and be prepared. You are all so good at pivoting and being creative to provide the best care for your patients. Thinking through these issues and having answers to these questions can help you prepare to problem-solve if you face limits while serving patients with obesity.

Michael Clay sent us a chart that his CT/MRI mentioned would be possible considerations. We include it here for your review.

Location	Bariatric Services		CT Restrictions		MRI Restrictions	
	CT	MRI	Weight	Girth	Weight	Girth

Action Items:

- **Volunteer for April to be a panelist** (this is your meeting, and we want you to be able to drive the discussion). Panelists will not need to do any formal presentation but instead will help organize the discussion with all attendees.
Discussion Topic Ideas:
 - Strategies employed to get this message out to their communities,
 - barriers encountered,
 - implications on triage and timeliness of care
- **Send** ideas for topics or speakers, stroke coordinator contact list updates, and information on support groups to Terri Moore terri.moore@dhhs.nc.gov
- Based on discussion from call today, **let us know** if you have other ways your hospital has found to pay for blood pressure cuffs.

IV. Presentation:

- **Thanks to our February presenter Dr. Alexandra Giedd, MD, MPH**, an obesity medicine fellow at Atrium Health, who presented on Caring for Patients with Obesity and facilitated a discussion around the issues of scanning and treatment of stroke in these patients. See her slides, the recording and the discussion that took place by following Stroke Coordinator page link above.
- **Dr. Gabriel Torrealba-Acosta**, a Duke Fellow and a co-author of the ZODIAC Trial white paper: **Zero Degree Head Positioning in Acute Large Vessel Ischemic Stroke**, presented on the trial. The ISC abstract link: <https://bit.ly/3SznL26>
- **Please see the recording** for the presentation as we were unable to share Dr. Torrealba-Acosta’s slides since the study has not yet been published.
- **Questions & Answers attached below.**

V. Topics for Future Calls:

- Optimist Main (low frequency vital sign/neuro check monitoring)
- Community Assessments
- Disparities/Gaps in Care
- EMS Education - cost effective, efficient
- Stroke Support Groups including activities that SSG do to engage their stroke survivors and caregivers (important) and ideas for more large scale advertising
- Improvements for Door In - Door Out Times
- Success with low DIDO times for LVO patients - especially in rural hospitals
- Strategies for increasing #s of Stroke Patients coming to the hospital via EMS, reducing privately owned vehicle (POV) arrivals including impact on hospital triage practices
- Stroke Response Team: Successes and Lessons Learned
- Improving Neuro Assessment Completion
- Best Practices in transitional care after discharge
- Community Resources
- Stroke Awareness Month events/activities
- Funding & tracking success of programs to provide BP cuffs
- Stroke System of Care in NC (and compare to other states)
- Community Paramedicine- utilizing, best practices, connecting
- Stroke scanning, diagnosis and treatment in obese patients

-
- Use of a QR code to share data with EMS or any other outside (of your facility) group. Other data sharing methods.
-

Q & A WITH DR. GABRIEL TORREALBA-ACOSTA STROKE COORDINATORS' CALL, 3.27.24

Q: Were patients transferring from an outside hospital with CTA positive for LVO studied at all? In other words, was EMS keeping the patient flat during transport? (We have long transports of up to 2 hours.)

A: For the trial, there was nothing prespecified because the randomization happened when the patient got to the center, and there was no control for what happened prior to arrival. That was one of the limitations of the trial. But because we saw these remarkable effects when the patient got to the center, we were not able to take into account the position of the head prior to getting to the hospital. I think one of the conclusions of this study is that it is not safe for patients that we suspect have an LVO to keep them in a 30-degree position, so even if we don't know and there's a long transfer, I think it would be better just to lay them flat until they get to the hospital where they're going to get the CT. And for sure if the patient is known to have an LVO and needs to be transferred I would keep them flat throughout the whole transfer. In summary, we did not control for any position before the randomization. I think it's unsafe to transport patients at a 30-degree angle. The fact that we identified this huge difference in a very short time (from 10 minutes and every 10 minutes evaluated after that) and most of the patients were evaluated within the first 40 minutes. So, if we found such a striking difference in 40 minutes, imagine what's going on in the brain. I think that to promote the blood flow as soon as the patient is known to have an LVO, the patient needs to be lying flat and they need to be transferred in that position.

Q: In how many facilities is this procedure being implemented?

A: Since this study is not yet published there is not an implementation plan, but I've asked my colleagues and specifically one of the attendings here at Duke who trained at UCLA if they were all laying patients flat. It's common knowledge that people would lay them flat just to have the brain better perfused. But it's not something that I can say is the norm. I think Dr. Alexandrov's main goal in all this is that it would eventually be included in the guidelines. You know that patients that have an LVO should be laid flat as soon as you know. Even if there's a suspicion that the patient has an LVO, the patient should be laid flat. We have proven that it's safe [to lay them flat] and we have proven it is not safe to raise the head at 30 degrees.

Q: How did they educate the ED nursing and providers? Did they educate nursing to implement a certain protocol?

A: The study was conducted by Stroke Champions at the sites. So, there was a research stroke champion, and the study was all nurse-driven and the whole enrollment and screening process was performed by them. Once the patient was enrolled and randomized, they would stay there and make sure that the patient did not change the position of the head. Lead author and ultimate stroke champion Dr. Alexandrov at the University of Tennessee has discussed how these guidelines would eventually be translated into education for EMS and all prehospital services. Training personnel to be mindful of the position of the head. It's such a cheap intervention and it costs nothing. You just need to drop the head of the bed and it creates such a profound effect on the patient outcomes.

Q: (Lesley Taylor at Carteret Healthcare stated she had implemented this protocol at her hospital just last week.) Can you say more about how you went about implementing a protocol at your hospital?

A: from Lesley Taylor: My stroke physician champion brought to my attention the AHA article that the position of the stroke patient's head before surgery may improve neurological function. So, we implemented it as one of our best practice guidelines at our March meeting which was a couple weeks ago. The way we implemented, we use Meditech for our documentation and we created a link between the CTA order and a nursing intervention that says, "If positive for LVO, keep head of bed flat." This will trigger nursing. We thought it would have been too difficult for our physicians to use an order set for the CT, and then if the patient was positive for LVO they'd have to circle back around to put in an order to keep head of the bed flat intervention themselves. So, from the get-go, there's the intervention for nursing to see that if their CTA is positive for LVO that they should keep the head of bed flat. I just sent out education via email to our staff with a link to the article for best practice guidelines. It was simple to implement. We don't see a whole lot of large vessel occlusions and we don't have interventionalists at our facility, so we do transfer out.

Dr. Torrealba-Acosta: Typically, the neurological patient must have the head 30 degrees because of intracranial pressure. We just need to be mindful and reassure everyone it's okay, this is a very specific type of patient that we need to keep the bed at zero degrees.

Q: Using telehealth – Our goal with our telehealth is that our neurologists are looking at the CTA's even in the C-Suite or right after. So, if they're reading it quick and can say "that looks like a suspected LVO." That would be a quick 10 second thing for them to just say, "put the head of the bed flat."

A: I think hopefully that at some point this catches up as soon as the physician goes over the image and identifies the LVO, it takes nothing. And if there's an order set like {Lesley} was mentioning, then that's perfect because that would prevent the nurse from having to put in another request.

Q: Was there a significant difference for discharge MRs between the groups?

A: I still see a trend where at discharge the patient in the zero-degree groups still have a more frequent MRs 0 to 2. What we don't know is what happens in the 3 months post discharge. It depends on where the patient goes, what type of therapy, SNF, etc. It would be better if we could standardize that period from discharge to three months and see those results. That's what we've been trying to do. However, at the three-month mark we did see higher mortality in the 30-degree group. We were unable to analyze if there had been any difference according to where they went, home or acute rehab. But when you start dissecting the groups based on where they went, then everything loses power because there were very few patients falling into each category because from the beginning we didn't have a very large sample size.

Q: If they were not able to reestablish that flow from the LVO, maybe they still have the LVO after the procedure. How long are you supposed to keep them flat? Is it OK to raise the bed? When can you raise them back up? Specifically, if they had trouble, and they were not able to open that vessel back up.

A: I think the rationale here is that if the vessel is open then there's nothing to prove, right? The whole trial was centered around everything that would happen before the intervention. So, what you are asking is what if the vessel is still not open after thrombectomy? Then should we keep the same the same head position? That was not the case in our research, so it was left to the team just to decide. As a follow up commentary, if I had a patient that I have at zero degrees and thrombectomy is not successful then I would keep them at zero degrees maybe to push for a little bit more flow. That's another part that could also be protocolized.

Q: Do you have any "pearls" of wisdom as we implement this protocol in our facilities?

A: This is how I manage my patients but in as much as you can, if we found a difference within this very short time from 40 minutes, I'm sure you would benefit the patient as soon as you know there's an LVO just drop the head. Now, if there's a difference, and let's say that you dropped the position of the head 30 minutes after you knew there was an LVO or three hours after that'd be an interesting measure. In any case, as soon as you find out that there's an LVO, I would drop the head of the bed.

Q: For those who have begun to implement, do you have a workflow diagram you could share?

A: Annabelle Black (Novant), We do not have that yet. All three markets have a meeting next week where we will discuss the workflow from our tertiary ED to the IR suite and from our community facilities to our tertiary center. And we will take all we've learned today and put it in place. We want to make sure to include our EMS education and all Teladoc doctors to be aware. But once we have finalized it, I can certainly share them, but we are just in the planning phases right now.

Q: Which patients should we not implement or may have higher risk? Airway concerns?

A: If you look at the exclusion criteria, we did not enroll anyone that would be at a higher risk of dropping the head of the bed.

• Exclusion Criteria

- Non-English speaking (English language instruments)
- Pregnancy
- Anticipated palliative care needs
- Evolving malignant infarction
- Need for emergent intubation to stabilize airway and breathing
- Preexisting congestive heart failure, chronic obstructive pulmonary disease or other medical condition challenging tolerance of 0-degree positioning- evaluated on a one-to-one basis
- Enrollment in other clinical trials
- Lack of telephone and/or permanent address
- Medical, psychological, cognitive, social, or legal condition that would interfere with informed consent and/or capacity to comply with all study requirements.
- Potential confounders:
 - IV thrombolysis \geq 15 minutes prior to enrollment
 - Evidence or suspicion of vomiting any time prior to consent
 - Known pneumonia, pleural effusion, pulmonary edema or other pulmonary condition
 - Concerning breath sounds on auscultation

And we did not enroll patients that were intubated. And so, I think in that case, common sense would prevail. You need to 1st check your ABC's and protect the airway, but once you have that settled then protecting the brain is the next step.