David Wheeler (00:00):

Hello, and welcome to today's episode of Hemorrhagic Stroke Fireside Chats, where we address unique rural and regional barriers to care, the hub-and-spoke relationships within local health systems, and best practices as patients transition through their systems of care.

My name is David Wheeler. I'm a neurologist in private practice in Casper, Wyoming, and the Director of the Stroke Program at the Banner Wyoming Medical Center. Today, we are joined by Dr. Giuseppe Ciccotto, a critical care specialist at Ochsner Health, and Arianna Hebert, RN, Director of Emergency Services at the Baptist Campus of Ochsner Health. Good morning and welcome to you two. Can you please tell us a little bit about yourselves?

Giuseppe Ciccotto (00:44):

Hi. My name is Giuseppe Ciccotto. Like you said, I'm a neuro critical care physician here at Ochsner Health System in New Orleans. I did my medical school training at St. George's University in the Caribbean and then came on to Tulane University here in New Orleans to get my neurology training. Stayed on here at Ochsner Health to complete my neuro critical care fellowship and then have been here for five years as a practicing attending.

Bethany Jennings (01:11):

Hi, I'm Bethany Jennings. I'm one of the nurse practitioners in our vascular neurology service here at Ochsner Medical Center. I also do administrative work and I help manage the stroke system of care throughout the Ochsner System.

Arianna Hebert (01:24):

Good morning. My name's Arianna Hebert. I have been with Ochsner since 2008. I started out in the emergency department as an ED tech, right out of nursing school, and immediately went into staffing. I originally started at one of our other campuses, the West Bank Campus. I was there for eight and a half years, worked as a staff nurse, and eventually became a supervisor there. And then transferred over to the Baptist Campus where I worked as a staff nurse supervisor. I've currently been in my current role for about two and a half years as the director of the department.

David Wheeler (01:59):

Thank you, Dr. Ciccotto, Bethany, and Arianna. Very pleased to have you this morning. So we're hoping to learn more about the system of care that you two are involved with. I understand that Dr. Ciccotto, you work at the Hub, and Arianna, you represent one of the spokes in your system. We'd love to hear more about the community that your hospitals serve. How many referral hospitals and how do the EMS agencies work together, and what is your service rating? So what kind of population are you serving there?

Arianna Hebert (02:29):

At Baptist, we work primarily with New Orleans EMS, but we do have other services that will come to us. We probably have another three to four that we can get patients from, but we primarily get from New Orleans. Our radius is probably about anywhere from 10 to 15, to 20 mile radius, just depending on if it's an Ochsner patient, a Baptist patient.

Where we're located at New Orleans, there are plenty of hospitals around us. So within five miles in any direction there are other hospitals. Baptist specific patient population, our core patient is

very, very unique. If you go two to three blocks in one direction you have a homeless shelter. If you go a few blocks in the opposite direction and you have upper class patients. And then you go a few blocks over and it's patients that are living on government funding, government housing.

And so it does add to some of the needs that our patients face. Some of them don't have transport. Some of them utilize the ED as their primary care. They can't get their basic medications that you would normally expect to get from a primary care doctor. So we definitely have that uniqueness. And then we are located less than 10 miles away from the Hub hospital.

David Wheeler (03:57):

Doctor Ciccotto, can you give us an overview of the various spokes that your system is serving?

Giuseppe Ciccotto (04:03):

Sure. So coming out of the Hub, our telestroke community involves hospitals all over the state of Louisiana and into Southern Mississippi, with over at least 50 spoke hospitals that feed into our Hub. Our radius is probably about 250 to 300 miles that we cover. So any type of patient, any type of nerve patient, will be encompassed in that.

Each different region here is Louisiana, as well as in Mississippi, is going to have a different amount of EMS providers, with the more rural areas having maybe one or two, with the largest cities having up to maybe seven or eight. So it's a very big catchment area with a lot of patients coming in.

David Wheeler (04:52):

Thank you for that. So this sounds like a very diverse catchment with a lot of different types of settings from which your patients are being drawn in, the types of hospitals that you're working with. Do you guys have a standard approach to educating the providers within that network? And if so, how do you disseminate that information, Dr. Ciccotto?

Giuseppe Ciccotto (05:14):

Yeah. So, the education provided mainly focuses on stroke science and symptoms that will be either hemorrhagic versus ischemic, as there's no real way to delineate those when you first come across a patient. The first part of how these other spokes or these other hospitals get trained or educated, comes from the LERN Network, or the Louisiana Emergency Response Network here, which is a state agency that has taken up the task of improving our pre-hospital stroke care.

So the first set of guidelines in education comes from there state-wide. And then with our spokes and other hospitals that we are connected with, it varies depending on how far away they are or how we're interacting with them. Since COVID it's been through Zoom meetings. But usually it can be anywhere from weekly to maybe monthly meetings that would involve education, sending education packets over there, travel to some of these spoke sites to do hands-on education with the staff there.

So every area has a different approach, but there's contact with all of these spokes to have whatever education is needed specifically for there. And we're able to change as quickly as we need to to adapt to what is needed at these spokes.

David Wheeler (06:46):

And Arianna, so the Hub and the system in general, are rolling out education, and presumably encouraging the various spoke sites to adopt standards of care. Have you found any challenges within your own organization in getting buy-in and adoption of these standardized protocols?

Arianna Hebert (07:12):

There have definitely been times, especially when you are first trying to get some of these processes in place and you're starting to create a change process, that you get a lot of resistance. But one thing I have found, we do a really good job of collaborating across the system for specialties. So we work with the System Stroke Committee, but then we also work as a system for service lines.

So we'll coordinate with Bethany and Terry and we meet with them and work really close with them to set the standards and the goals. But we also meet as a service line and all the EDs meet and say, "Okay, these are our goals. What are you doing? What are your challenges?" And we work together because some of the rural sites have different challenges than others. Some people, "Look, this is what's working really well for us. Why don't you guys try this?"

And so we're able to bounce ideas off of each other. And getting that ED provider actively engaged and your Stroke Committee on your side, is the key to that. Once you have the provider buy-in it's so much easier to get everyone else to be a part of that. I found when we didn't have an ED position that sat on the Stroke Committee for our campus, it was a lot harder to get everybody on board with constant changes.

David Wheeler (08:26):

Absolutely. The physician champions within each of our hospitals is clearly an important part of success as we build out a system of care. Another really important aspect to this, and really the glue that ties everything together, in my experience, is the participation and active involvement of EMS providers. Especially given the real diversity of communities that you're sharing within your organization. I'd love to hear more about what kind of challenges you've run up against, and more importantly, what kinds of solutions you found to bring EMS along with you on this journey to build out an excellent system of care. Dr. Ciccotto, would you like to start.

Giuseppe Ciccotto (09:08):

Sure. So I guess the first part would be the education to the EMS departments that we have out there. And like I mentioned, some regions will have a very small EMS system, one or two ambulances, and some other systems will be more robust, like the New Orleans system or the largest cities out there.

We try to get our education out to them as well. Each region will be slightly different but, like I said, as far as within Louisiana, they're all following the LERN guidelines for pre-hospital stroke activations. Meaning, they've got their time windows, they're doing their scales, the Cincinnati stoke scale, FAST scale, Van score, pretty early on. Activating the stroke activation, getting to the nearest appropriate stroke hospital.

As far as addressing any discrepancies or onsite learning with EMS, we try to do that at least on a monthly basis with EMS leaders if we're seeing things that can be addressed. But oftentimes, if a patient comes in to the emergency department, at least the main campus here at the Hub, and I see something that could have been done a little better, I'll speak to the paramedic directly to do some onsite learning.

Arianna Hebert (10:28):

I definitely agree. It's one, working with the LERN Network. They do set the precedent and they actually have taken over determining where patients go. So it's no longer the paramedic that's at the wheel that's saying, "Okay, we're going to Baptist, or we're going to this campus." They call into LERN if it's a possible stoke and they look for what is the nearest hospital that has the specific... Essentially, do you have CT and do you have staff that are certified and can take care of a stroke patient? And they're going to get it to the nearest facility.

And it's working with them to say, "Look, we can do early identification, recognize, and this is our plan of care." If it is a hemorrhagic, this is what we do. If it's ischemic, this is what we do. And so they know what's going on. And then having that close communication with the medical leads for EMS and getting them on board. And if you do have those fall outs, just following up with them really quickly so that they can speak to it.

If it's something that we're on site and we can address with the paramedic, real time is the best way to do that. If not, reaching out to their medical director and saying, "Hey, we just want to make you aware of this. This situation happened." So that they can correct it and give those people the feedback of, "Look, these are some opportunities that we had." And then having them call us early on, we can activate a code stroke before EMS is even here and we have CAT scan cleared off and we have the whole team ready to go when they arrive.

David Wheeler (11:57):

That's really great. That real time feedback that was described I think is a critical part of all of our EMS professionals learning experience. And then it sounds like you've developed some really good standardized processes for disseminating education across the various organizations.

What I'm hearing is the LERN Network in your area has been really important for the development of our system of care. And I think our listeners would be interested to know more about how that developed and who the main stakeholders are. Dr. Ciccotto.

Giuseppe Ciccotto (12:28):

Yeah, I feel maybe someone else would be able to answer that question more appropriately. I know that there's state agency, I couldn't really give you the specifics on who's all up there. I don't know if any of you guys know.

Bethany Jennings (12:42):

Yeah, hi. This is Bethany Jennings. I can jump in. So LERN was initiated through the legislation. It was really focused on improving access to care for, not just stroke patients, actually for STEMI, stroke and trauma. Because of the limited resources in the state it was really put together to try to drive hospitals to step up so that they can manage those patients and do it more efficiently and effective.

And you're right. It has been key in our stroke world here in the state for a long time, and it took a good long time for them to really get the ball rolling and for everyone to jump in and really understand why we're doing it. And now it's something that every hospital that takes care of stroke patients has to participate in, in the sense that they will require every stroke hospital to submit data to them. De-identify patient data so that we can better understand what's going on in the region so we know where education needs to be focused, what other barriers might be coming up.

And so it has been a life saver for Terry and I because we really focus on trying to help our Ochsner sites and our partners and try to drive that improved care. It's hard to do when there's no requirements, but with LERN saying you have to do it and you have to do it and you have to get better at

it, or you have to develop action plans and you have to explain why you're not getting better. So that is definitely improved overall the care in the state because people have to monitor what they're doing and they have to review it and they have to make improvements.

David Wheeler (14:20):

Yeah, this level of state oversight seems to be a recurring theme at very successful systems around the country, and really helps to provide an impetus for otherwise competing hospitals to start to work together collaboratively. And again, I wonder if any of the three of you have more insight into how this was born. What was the driving force behind this and whose idea was it?

Bethany Jennings (14:46):

Hi, this is Bethany again. I would probably say it was more the trauma and the STEMI. In fact it was. So trauma and STEMI was really what was leading, and when they saw the improvements that were occurring with trauma and STEMI they said, "Well, stroke's time sensitive as well, and we need to make improvements."So the system that was in place, every stroke kind of piggybacked on that. And so the idea is that anything that's time sensitive being those three major things, and also resource required that we pull them in.

So I can't speak to whether it was one person that said we need to do this, or if it was a collaborative effort across the leadership in the state that said we need to do this. We certainly have the key players that are within our programs here in Louisiana that are stroke leadership. The providers that really have driven where we are today. So I suspect that that's probably where it stemmed from is that they didn't want to see trauma and STEMI getting so much better and stroke not.

So I think that's where it was born, and then it's just grown from there. And like I said earlier, it was a lot of baby steps and a long time to get us where we are today. It's pretty incredible to look back where we were two years ago to where we are today. It's a dramatic difference and it continues to grow and they continue to have higher standards and the bar raising and getting better at stroke care overall.

David Wheeler (16:26):

Thank you, Bethany. Yeah, it sounds like you guys have a very involved system and really could set a good example for the rest of us around the country on how to deliver best care for stroke patients.

I'd like to turn our discussion now towards what happens with patients once they arrive at your facilities. And Arianna, I wonder if you could maybe give us an overview of what happens when a stroke patient arrives in your facility and specifically, once a patient is identified as having had an intracerebral hemorrhage? What kind of management happens within your facility and who's involved in that?

Arianna Hebert (17:01):

Sure. So we have a very coordinated and structured process that is in place, and it took time and effort to get where we are. But whether it's EMS that activates it or if it's the triage nurse, as soon as it's recognized that the patient is considered a potential stroke, we call that overhead and we have our coach stroke team that all respond.

We're fortunate in that our CAT scan machine is actually in the emergency department. So wherever the patient is located they go directly to CAT scan and everybody goes to the patient, rather than going to the room and having to move people around. So the patient goes to CAT scan, an ED provider goes there. A medical scribe goes so that they can start documenting. Someone at the desk,

typically either the charge nurse or the triage nurse, is calling... We have a Regional Referral Center which is how we start the process of getting the patient transferred and assessed by neuro.

We have CAT scan that comes. Respiratory comes so that we can do point of care testing and get labs relatively quickly in case we have to do any intervention. We have lab that comes down to draw the labs. So almost everything that is time sensitive that we need to get done gets done in CAT scan in the first five to ten minutes.

The patient goes through the CAT scan. The physician is usually sitting right there with them when that happens. So if they recognize that it's a bleed early on we call the referral center back and indicate that, because we now know, okay, we need to start working on transferring the patient.

If it's a questionable one they will usually call, let them know and neuro will pull up the CAT scan and they can look at it and determine it. And we'll start planning transfer at that moment. So most of the time with a head bleed we start working on transfer within the first ten to fifteen minutes.

David Wheeler (18:56):

So in other words, once the CT scan demonstrates that intracerebral hemorrhage the care plan is straightforward. All these patients are going to be transferred to a higher level of care?

Arianna Hebert (19:06):

I would say 98% of the time, unless it's someone who's DNR, that it's not going to change their course of treatment, that we're not going to do any other interventions for them. And if it's a small bleed we'll sometimes leave them here, but pretty much everyone else gets transferred out.

David Wheeler (19:22):

And Arianna, do you receive telestroke coverage in your ERs? Is that how neurology is involved?

Arianna Hebert (19:28):

Yes. And we do that for both ischemic and hemorrhagic.

David Wheeler (19:32):

Very good. And Dr. Ciccotto, are you involved in the provision of telestroke services?

Giuseppe Ciccotto (19:38):

Yeah, I also cover telestroke as well.

David Wheeler (19:41):

I'd be interested to learn a little bit more about how that coverage occurs. Which of your neurologists or stroke specialists are involved and what kind of call structure that involves. In other words when you're on the telestroke service is that a full- time job for a period of time and what kind of call structure is involved in that?

Giuseppe Ciccotto (20:00):

I think Bethany can answer that question better than me. I'm not sure how the vascular neurology team covers that, but as far as the neuro critical care doc that are neurology trained, we will cross cover. We will pick up shifts on the telestroke service. We're not necessarily part of the scheduling every month.

David Wheeler (20:27):

Understood. We'll get to the admission of the patients to your neuro critical care units. Bethany, can you give us some insights into how the telestroke call system works?

Bethany Jennings (20:36):

Sure. Absolutely. So, many telemedicine systems in the country will have a third party vendor that provides their telemedicine coverage. And then their vascular neurology team will focus on those patients that are in their facility. We actually have a different model that we've stuck with since the beginning that we started this probably ten or so years ago.

Our vascular neurologists will cover and typically now, because of the number of sites that we have, it is a full-time job. And so they will, if they're on telemedicine, that is pretty much what they're doing all day. And then we usually try to separate it into a day and a night, because again, the volume has definitely changed throughout the years. We used to have it where they were doing say, acute stroke that come into the front door here at our Hub, and then doing telemedicine. And it quickly became very, very challenging to be in two places at the same time.

So we really have transitioned into, this is what you do when you're on that day. So if you're covering telemedicine, that's the only thing that you're doing. And then they also have a back-up system. So if they do get multiple consults within that same period of time, they can call their back-up and have that person take over and keep the flow going so that we're not having delays in the, what we call Tier 1, those acute stroke patients that need the vascular neurologist involved pretty quickly.

David Wheeler (22:07):

And Bethany, with intracerebral hemorrhage patients that are identified at spoke facilities, I'm assuming that there's a standardized approach to the care that's developed and disseminated system-wide. Is that accurate?

Bethany Jennings (22:22):

Yeah. So the process for the ICH patient is a little bit different. It's a little challenging in the sense that with an ischemic stroke it's very same. The patient comes in, they get their CT scan and they get that work-up. The way that ICH presents, because there are so many vague symptoms, a lot of times hemorrhage is identified before the actual consult is even thought of. So they weren't thinking that. They get the CT scan and they realize, oh, gosh, this is a bleed. And so then, in those cases it actually turns into more of a neuro critical care, neurosurgical direction, versus getting the vascular neurologist to do the consult, and then proceed from there.

But if a patient comes through with those obvious neurologic symptoms that really prompt a consult, then yes, there is the same process that we have for an ischemic patient, just when we identify that hemorrhage, that's when we're then going to get our partners involved. So either it happens from the emergency department, the providers there recognizing that the bleed exists on scan, or that they're recognizing symptoms that indicate that this could be a potential stroke and then it's identified on the scan at that point.

And then you ask from there the neuro critical care, neurosurgical teams and the vascular neurologists, will all help that spoke site determine what is best for that patient. How to manage the blood pressure? What's the best goal for that particular patient? If they need to have any kind of reversal agents, which ones would be the best? And driving that. And then really expediting those patients that really need to transfer immediately.

We know all of them need to transfer but the ones that are really going to be the ones that are going to go bad in a community hospital are the ones we try to focus the attention on the highest.

Arianna Hebert (24:08):

We haven't really talked about, but we're all talking about it without really... We also have a third party that plays a [inaudible 00:24:15]. It's not just neuro and the ED. We have a Regional Referral Center that this is all that they do. They sit in a room and it's help connect to the appropriate consults, help coordinate the transfers.

So these are people in the back room that are getting the correct provider in charge with the ED provider. You have somebody on the side of them that's starting to coordinate EMS. So you're taking a lot of that workload off of what used to part of the ED's responsibility of getting a bed assignment, getting in touch with the consulting provider, making sure it's the correct consulting provider. ED is no longer doing that. It's the Regional Referral Center that is coordinating all of that.

David Wheeler (25:00):

That's really great, and I'm sure that that helps to standardize the approach and facilitate more rapid communication amongst various team members. Dr. Ciccotto, I'd like to hear a little bit more about how you typically get involved in these cases, at what point, and specifically what mechanisms of communication are you most often using? Is it strictly telephone or do you use some digital resources to help coordinate the care of these patients before they arrive in your unit?

Giuseppe Ciccotto (25:27):

Sure. So, like Bethany and Arianna mentioned, there are several ways. The most common way would be the patient out at the spoke or the outside hospital, that we are being called, once they realize that there's a head bleed on the scan through the Regional Referral Center. This would be a phone call that I would get if I was on call that day here in the neuro ICU.

They would tell me that they have a patient at another hospital in Louisiana or Southern Mississippi. If I'm able to, if they are connected to our system where I'm able to see their images directly through the Ochsner Epic, then I would log on and take a look at their images here. We also have some hospitals that are not through the Epic system but I can still see their images through something called EasyViz.

So I would log on. I would take a look at the images. I would talk to the ED doctor over the phone through the Regional Referral Center about what's happening with the patient there. Their exam, their past medical history, any medications they're on. And at that point we would manage the patient together. Like Bethany mentioned, I would, based on the imaging, give them blood pressure goals. We would talk about the appropriate medications to use to lower the blood pressure. Whether the patient should be intubated at this point or not. Whether any reversals needs to be done for anti- coagulation or anti-platelet. And then we'll make the decision on the fastest way or the most appropriate way to get the patient here to main campus. On their way here then the neurosurgery team would be notified as well. We would all be waiting for the patient when they get here.

The other way is for the patient to come in through our ED locally here at the Hub. It pretty much works the same way, just not through the Regional Referral Center. Once they realize there's a head bleed, we will get called the same time neurosurgery gets called. We're usually down there first and we do the same process. It really just eliminates the emergency department. Once neuro critical

care or neurosurgery come down into the ED, we tend to own the patient and we'll take over from there, and then try to get them up to the ICU as fast as possible.

David Wheeler (27:44):

Great. Another really important part of a system of care that sometimes gets short shrift in these conversations is, what happens with the patient once they've been treated in the facility, and how the Hub hospital collaborates back to the spoke system? So I'd like to understand better how you provide feedback to your community hospitals and what form that takes, and who's responsible for developing that information? And I'm betting, you, Bethany, play a pretty big role in that.

Bethany Jennings (28:16):

Actually, both Terry and myself. Because the system is set up, obviously a very large system, we have different groups in the sense that we have our Ochsner named hospitals, we have our Ochsner partners, then we have our Ochsner sites that are strictly just spoke sites with telemedicine. Terry and I try to own the ones that are either Ochsner or Ochsner partners, just because we're all on Epic medical record. The workflows are going to be exactly the same because of the Epic workflows built in. So we will focus heavily on them.

For the Ochsner named sites we actually have a data system set up so that we have a shared drive. They complete their acute stroke log and then we actually can look at their log and help drive change in that respect. For our partners, they have a similar process but it's more on a verbal. And then our telemedicine partners, we actually have an entire department that handles telemedicine. And they actually have a relationship with each of the spokes, including the Ochsner system spokes and our partners. But then they focus heavily on those non-Ochsner, non-Epic sites, because their workflows are going to be a little bit different.

So they are giving feedback. They do it on a monthly basis. They give them their monthly telestroke with all of the data points that are around that particular patient that we did consults on, so that they can have the missing pieces that they weren't able to have from their system and their process. So then they can look at the big picture overall from beginning until end.

And then they also do a quarterly overview review of the entire population that they managed during that quarter. And they work heavily helping to drive... And then I spend a little bit of time with them, as well. We do a system-wide call. We have key people on that call and we share best practices. We do education. And that's how we get that feedback back to the sites.

David Wheeler (30:17):

And Arianna, so do you find that these are effective means of communication? And then can you tell us a little bit about how once that information is received you disseminate that back within your care organization?

Arianna Hebert (30:33):

It absolutely is helpful. Our stroke committee, I co-chair it with our manager for the med surg unit, and so we will sit in on the system stroke committee. And then we bring any information that is a part of that conversation, we bring it back to our campus. And if it's things that we need we bring it back directly to the executive team. If it's unit specific we disseminate the information to those specific areas.

But it's also a good opportunity to see what other people are doing. What's working well? What doesn't work well? And it gives everybody an idea of other things we can try to keep improving, because

you'll see certain campuses, they're excelling in one area but they're struggling in another area. That's a good opportunity to say... And because Bethany and Terry work so closely with each campus they start putting us together and saying, "Hey, look, I know this campus is having some trouble with CT times. This campus has done a lot of work with it and they've really improved the process. Why don't you guys talk?" And so they help us network and put the people together.

And then they also sit in on our personal stroke committees, and so they're able to give us feedback. And Bethany has been a huge part of our campus getting our guidelines together, getting all our evidence together. Once Terry joined us, she's been so helpful on really digging into the detailed part of the data, and where are we falling down, and why are we struggling, and how do we fix it. So they're that extra set of eyes that really helps connect of where we have opportunity to improve and who are good resources for that improvement?

David Wheeler (32:23):

That's terrific. Thank you for that. So turning our attention now to the patients themselves, I wonder if you guys could give me an overview of the types of stroke education that's provided to patients and family members who are recovering from intracerebral hemorrhages? And then maybe an idea of what rehabilitation services are available. Do most patients stay close to the Hub site or is there a strong effort to get people back to their home communities?

Bethany Jennings (32:55):

I can speak and then I think Dr. Ciccotto can probably speak as well. As far as the education, the majority of the patients are going to come to the main campus here at Ochsner as the Hub. As a comprehensive center, of course, we have to meet all of those guidelines for education and making sure it's individualized. We use the Epic system to try to help with that.

It has been a little bit of a challenge, so we did create a booklet, a stroke booklet, it's individualized to that patient. So it's actually like a workbook in the sense that there's areas that need to be filled in to help the patient better understand what type of stroke they've had, what are their specific risk factors? And then in there, there's education about each one of those risk factors. The more common risk factors that a patient would have. And then there's a box that helps them check this does not apply to me or this applies to me. So they know exactly what information they need to know when they leave the hospital.

And then if they did have any procedures while they were here in the hospital we check those as well so that they understand if they did get an EVD, because typically the patient's not going to remember that. But this is something that gets to go home with the patient and they can better understand the kind of care that they got. Their family can better understand.

And then we have, of course, resources between our social workers, our case managers. We have our dieticians. So, depending on the individual patient needs, while they're here in the hospital we will get that team involved. So it is definitely a multi-disciplinary approach.

The nursing staff, especially in the neuro critical care unit are remarkable in how much they educate and how they bring the families and the patients together, especially when the patient isn't able to participate. They do a really great job at providing that education. I don't know if Dr. Ciccotto wants to jump in on anything else on that.

Giuseppe Ciccotto (34:50):

Yeah. As far as the education that we do, that all comes from the work that Bethany has done and the rest of the stroke department.

To answer more about your question, post-acute care transition. After the stabilization and treatment of the patient, the next goal is to try to get them out of the hospital and on to the next phase of care as soon as possible, so they can begin their rehabilitation services and get back to as close to normal as they can, if not totally normal.

We will always do our best to try to get the patients closer to home. There's clearly a benefit to having family nearby when you're going through your rehab services, versus being alone somewhere in the middle of nowhere. So our case managers and our social workers work very hard to try to get the patients close to home where they have more family support.

If for whatever reason we're unable to do that, Ochsner does have a new state-of-the-art facility near the Hub here that offers inpatient rehab, skilled nursing and LTAC services. So for the patients that can't go back home for whatever reason, then we do try to get them into our own facility to continue their care. It also allows them to be closer to us here, should there be any issues they can come right back.

David Wheeler (36:14):

Arianna, any thoughts about post-acute care? Do patients returning to your community enroll in any of the facilities that you're overseeing?

Arianna Hebert (36:26):

I'm primarily over the emergency department, so not typically going to see them unless it's patients who have been discharged, just back at their home and presenting back to the hospital.

David Wheeler (36:37):

Terrific. I'd like to thank you all for such a terrific overview of what sounds like an amazing program that's grown up with the Ochsner Health System. I'd like to invite any of the three of you to provide any closing thoughts or anything you'd like to share about your system of care that you think the rest of us would learn from?

Giuseppe Ciccotto (36:57):

I can go. I've traveled this country. I've seen a lot of other programs, and I've never seen anything set up the way it's set up here with Ochsner main campus as a Hub and all of these spokes. And the way the spokes work, and the offset hospitals and our Regional Referral Center. Everything just seems to go extremely smoothly here, from EMS, all the way up to the main campus. It takes, I don't even want to say an army, because it's more than an army of people that have put this together that continuously work to tweak and better the system. And every day that I am here just impresses at the scale of how we're able to help patients, as well as how quickly everyone's able to adapt to get things done.

Arianna Hebert (37:47):

And I'll just echo that. I think that it's so much more than just coming up with a plan. It's the coordinated efforts by so many different teams that have really helped to streamline the process and get it to where it's, not only did we get it right, but we get it right all the time. And when we don't get it right everybody stops and is open to the feedback of what went wrong and how do we fix it?

It's that immediate feedback and close communication with every party. So if it was EMS, we know who to call and we actually have one of the supervisors for EMS that sits at the Regional Referral Center. And so we're giving them that real time feedback. If we had issues with telemedicine, it's getting in touch with telemedicine and saying, "Hey, look, the machine, it wasn't working. Something's going on with it." And somebody's coming out that day to get that fixed. And so having the buy-in of so many different people and everybody having the same goals that really is what makes it successful.

Bethany Jennings (38:53):

I think that we're coming across as this system is so perfect and works so well. I think that we know we have our challenges and I think everybody knows that. The biggest thing, and I echo what Arianna is saying, it's not that we don't have challenges and it's not that things don't work smoothly, it's that we have so many people buying-in to making it better. So that when there is an issue it doesn't feel like an issue because we're finding solutions.

So we definitely have our barriers. We have our EMS barriers of trying to get them here faster. We definitely have barriers of having the sites early recognize and getting CT scans done faster. But it is like she said, a collaborative effort so that when we do have an issue it's a phone call away. It's a collaborative figuring out what's the best approach. Educating when it's an education issue. Addressing it if it's a compliance issue.

If it's a protocol or a process issue that we need to work on and fix, everybody is on board. If we need to change it and we do these PDSAs where let's change it, see how it works, and then rapidly change it a gain if we have to, everyone just seems to be really open to that. And I think that probably is what sets us apart. And the fact that Dr. Ciccotto, on his end, probably doesn't feel a lot of the things because by the time he gets the patient we've figured out all the barriers for him.

But yes, I want to make sure that when people listen to this that they're like, "Sure, you're perfect. Nothing ever goes wrong." That is not what we're saying at all. We have our challenges just like any other program. But the one thing I will say, we have such a collaborative effort between the emergency department, our EMS partners, our patient flow center, our critical care unit, all the critical care providers, the neurosurgical providers, our vascular neurology team.

I, just like Dr. Ciccotto, have been around to different other hospitals and I have to say it is such a unique collaboration between the three major groups that are trying to manage these patients. You have vascular neurology with their focus. You have neurosurgery with theirs, and you have neuro critical care. And somehow we all come together to make sure that the patient really is getting the best care that we can possibly provide.

David Wheeler (41:15):

Well, you've said it beautifully. A successful system of care is one that focuses on helping patients and serving their communities. And what I'm hearing loud and clear is a strong willingness to work together collaboratively toward that end. And for that, I congratulate all of you. Dr. Giuseppe Ciccotto, Nurse Practitioner Bethany Jennings, and Nurse Arianna Hebert, I really appreciate your time and effort and your willingness to share information with us about your hemorrhagic stroke system of care.