Welcome to this episode of Heartbeats from Lifelong Learning from the American Heart Association titled Beyond the Emergency: EMS and Rural Maternal Health. The recommendations and opinions presented by our guest speakers may not represent the official position of the American Heart Association. The materials are for educational purposes only and do not constitute an endorsement or instruction by American Heart Association or American Stroke Association.

The American Heart Association or an American Stroke Association does not endorse any product or device. I'm Kimberly Harper, the perinatal-neonatal outreach coordinator and with UNC's Collaborative Maternal and Infant Health, and today we're talking about

the importance of emergency medicine and, emergency response in rural maternal health. In 2023, 669 women in the United States died from maternal causes. That's about 18.6 deaths per 100,000 live births, and behind every number is a family, a community and a loss that, in many cases, could have been prevented.

So today, we have the opportunity to talk about maternal emergencies. we often picture a hospital setting, but the reality is these emergencies happen in rural settings outside of the hospital, on the side of the road and during transport, and in small communities hours away, from obstetric services. In many rural settings, EMS and first responders are the first and sometimes the only point of contact.

So today, we have the opportunity to have our conversation and discussion with Shelby,

and Allison, and so I'd like to pass it over to them to introduce themselves.

Hello everyone. My name is Shelby Smith Janey. I'm a nurse working in North Carolina. My background is in public health as well as, labor and delivery and a a rural emergency department, where I work currently as a nurse. I also, am employed by the Center for Women's Health Research and collaborate on a study about hypertension recognition and response, which is how I have been connected to our EMS partners most recently.

I'll pass it over to Allison.

Hey everyone. I'm Allison Bissett. I currently serve as a agency PEC, a pediatric emergency care coordinator, in North Carolina along with the EMS for Children's Advisory Council for the state. My day-to-day job is a EMS assistant chief, where I have been in the world of pre-hospital medicine for about 20 years now.

And something that we are really behind on is taking care of mom and baby in the pre-hospital setting across the country. The research proves that. And so, we will really talk about some practical strategies that we can do in the EMS environment when you don't have everything that the hospital has at your fingertips and some ways that you can approach that as an agency.

Thank you both for that introduction. gonna give some background information. So maternal mortality and severe complications during pregnancy are still serious challenges in the United States, especially in rural communities. In many of these areas, EMS professionals play a crucial role in maternal care, especially when emergencies happen, and the reality is that we often have obstetric emergencies that don't happen in the hospital setting.

They happen at home and, in any space. And so Allison, I would love, for you to share, your experiences, especially with your, your EMS crew for pregnancy and postpartum contact.

Thank you. So one of the things, our agency runs around 35,000 calls a year, and that's just to kind of set us up for when I'm talking about things that we have done and things that I've seen across the state. And of those 35,000 calls a year, we only have about 35 what we consider field deliveries.

We have 300 EMS providers and 35 of those, so that's a very low number of those OB calls, but the acuity of them typically is pretty significant. And what we're seeing more often than not is that we're sometimes the only point of contact for OB medicine for these patients

because they haven't had prenatal care, and we'll talk a little bit more about what that means for some patient populations.

And we are not always close to a hospital that's capable of OB care or even has a NICU if we have a, neonate that needs that specialty care. And so a lot of the challenges there is we just don't have the exposure to it as EMS providers, and if you look across the state and even nationally, what you see is, there's a report called the Pediatric Readiness,

Program, and that report showed that there's not a lot of pre-hospital training for OB emergencies that's standardized across the nation, let alone the state. And so even access to that, it can be a very expensive thing for these agencies, especially you're talking about rural communities that maybe the EMS agency is four people, and those are the only people that you have.

And with that, your closest hospital that can provide OB care could be two hours away. Your closest local hospital that maybe has not even an ICU, just a small emergency department, that may even be an hour away depending on where you are. And so we don't have that backup for specialty OB care, and we're it.

We can't call in reinforcements and then trying to safely transport them if there is specialty transport, and those are just some of the things that we face day to day in EMS in the pre-hospital environment just in our area, and we know that that is a common thing for agencies across the country.

Allison, can you share more, like, what are some unique scenarios that EMS face in those rural, the maternal emergencies that may not shape it exactly?

I would say some of those are your complicated deliveries, so your preterm deliveries where you have a child that is 28 weeks. We don't have equipment capabilities for a child that small, to resuscitate them, let alone to safely transport them. And that's something that we don't talk about in your standard pre-hospital medicine training, in your initial

education, or even your continuing education programs, where people are already certified and are doing that continuing medical education.

And some of the other things are your OB emergencies where you're dealing with hemorrhage, so it's not always necessarily a delivery when we're talking about OB emergencies. It could be severe vaginal hemorrhage, and we're not that's not something we talk about and train on often. It's not thing, it's not something pre-hospital providers are comfortable with.

And those are challenges for us to have the tools to be able to safely take care of these patients so that they do not become a statistic, and their family isn't forever changed.

And Shelby, as we think about rural health and social determinants of health, and access to care,

can you share some of your experiences with labor and delivery and the emergency department?

Absolutely, yeah. Where I work is a critical access hospital, so it is rural. We have a lot of, patients who come in who have limited access to care. They face significant challenges in accessing prenatal care.

many of them do not speak English as their first language and require, assistance with interpretation. many, this may be their first baby or, they may have a large family, but that, when they come in, we need to quickly assess and evaluate, you know, what is the most appropriate place for them to receive care.

Luckily, we have great partners through EMS, and I think one of the things we really have to consider is that there are two patients who are in our care. So we have the mother and the baby. And getting a really good focused history can sometimes be difficult in the heat of the moment.

And so having that good handoff and report, with our partners is, is really critical and something that I think is a great opportunity for improvement. But where I work, we've definitely seen increased access with the labor and delivery unit that was opened in 2020. we take care of low-risk birthing parents,

traditionally. However, we know that anything can happen and that, sometimes we have some surprises or more high risk or lower gestational age, which require quick, transfer and, escalation of care based on their medical needs. So I think, you know, the bottom line is readiness and always being prepared for anything, as well as considering those two patients, the mom and the baby in your plan of care and how you're gonna keep everybody safe.

one term that we hear often is maternity care desert. A maternity care desert refers to a county or a location that doesn't have hospital offering obstetric care or a birth center, and it's without a, an obstetric provider. And one of the major contributors to severe maternal mortality and morbidity is connected to the distance, and that can change, those outcomes.

When you layer on social determinants of health and the transportation barriers and limited resources,

what are some areas that you think, Shelby, are some things that we might consider, for providing those care, that care gap and support?

I think beyond, you know, improving connections to resources in our, in our community that we really need to see, strong relationships between our local hospitals, our EMS providers, and our outpatient clinics. I think a lot, oftentimes the, the patients that are in these rural areas really rely on their providers at these small community health clinics or small, centers that are really working to the best of their ability to provide high quality care.

so we need to kind of make sure that those places are situated and have access to resources around, transportation and financial, assistance for patients who might need that. We know there's a lot of challenges around health literacy and making sure that patients know when to access emergency services during their pregnancy, so really focusing on patient education in those, early on in those pregnancies before, we, we see any challenges.

for example, one of, our project about, severe hypertension, we really try to, work with outpatient clinics to educate all patients about signs of hypertensive disorders of pregnancy early on, between 20 and 34 weeks before they most commonly develop, so that patients might be more prepared or have more of an idea of when they might need to seek more urgent care, so that it's not,

something that's so dire or so dangerous by the time that they are in contact with their healthcare providers.

Allison, from your perspective, when we think about, the impact of social determinants of health and factors that might, lead up to connections and reaching out to EMS, what are some barriers or considerations that you've navigated?

We see a lot of issues with access to OB pre-hospital care for a lot of our patients, especially if they need a specialty provider. If they're already having trouble accessing the clinic, it's hard for them to be able to make and actually go to an appointment for a specialty OB care, because that could be up to 100 miles away, depending on where they're located.

And so, what we're seeing is lack of pre-hospital,

or prenatal care for some of these mothers. And we also deal with bias. I hate, I hate to say that, but in the pre-hospital environment, we get exposed to so many different areas of healthcare and people's homes. You know, we're invited into their home, whatever that may be, and it may not be a home.

It may be a car, it may be a, unhoused person's shelter. And so, we are meeting patients where they are, which is a little bit different than when you think of people getting medical care. You don't necessarily think about meeting them where they are. And so, we see a lot of these social determinants of health when we're going out and seeing these patients when they call 911.

So, maybe they don't have safe housing and they're bringing another generation into that environment that's not safe, or there's huge food insecurity for them, which they need nutrition when they are growing another human. So, we see a lot of that stuff. Language barriers, and we don't necessarily, in our system, have access to quick help for, translation services, because we're not linked to a hospital medical record.

And so, sometimes we're using family members or we're phoning a friend trying to figure out how to best communicate, and that causes issues trying to get that good report, so that we can have that positive handoff when we get to the hospital. And so, what I really urge responders to do is understand the community that you're serving in that bigger picture.

Because just because you go for a 911 call and you're with that patient for an hour, maybe two to three depending on where you are, they may need help beyond that, and you may be the person to help connect them to some of those resources to help with,

issues that they may have farther down the road, because they are growing their family. And part of that is we work with our community paramedic program, and sometimes we go and see some of these families that we wouldn't know about unless we had ran a call. So, I just encourage providers that are in the field to open their eyes and ears to some of this, because you are gonna see it and you can make a difference in that

one thing you mentioned was being able to be open and to have that connection, especially, when there's language barriers, and I think that's often connected to being foundational to building trust. And trust is that bridge to finding, what respectful care looks like and how do we do that. And we know that respectful care is another area that's coming up in several areas of maternity, but often it's difficult to understand

what respectful care actually looks like and what, how do you do that. And so, as a first responder, someone might see someone, during the most vulnerable moments, and some of the things that we found as it relates to respectful care and being culturally responsive, it could be active listening or explaining what you're doing and then finding ways, to be aware of those implicit biases that you mentioned earlier, that are present.

But also being able to support autonomy whenever possible, to have, those conversations with shared decision-making to ensure that,

those pieces are present when we're providing patient-centered and culturally responsive trauma-informed care. and Shelby, as we think about those those considerations, what do you think are some of the priorities for training needs in this setting?

Yeah. I think that you're really speaking to the importance of high-quality communication during high-stress situations, not only between care providers, between EMS responders, between different teams as we arrive and leave the the hospital or in the ambulance, but, really having ways to effectively communicate and do that in a way that's both efficient, but also respects the patient, respects their beliefs, respects their autonomy.

I think that, you know, EMS providers really need to be aware of some of the physiologic changes of pregnancy that can impact assessment and treatment. so there's very specific signs and symptoms to look out for when someone might be having a hypertensive emergency. They may be having a hemorrhage.

I know Alison mentioned that as one emergency scenario earlier. And to be able to communicate those things to the patient in a way that they would understand, especially understanding the severity and, and the potential danger involved, but without creating,

excess fear or, making the patient, you know, extremely nervous and stressed, in a, in a high-stress situation already. So, I think that, while this is sort of built into EMS providers',

work as just, you know, what they do every day, in these maternal health situations, the stakes are so much higher 'cause there's, of course, a baby that's involved.

And so, remembering those ways that we can really communicate and support autonomy while, communicating urgency and seriousness, and, and giving that high-quality care. So, it's definitely a balancing act, but something that I think,

has been done really well in some areas of our, our state.

Alison, what are some of the training gaps as, as it relates to the, the training needs that Shelby just mentioned? What are some of the gaps that are currently present within EMS education, and what are some, opportunities, to kind of bridge that gap?

One of the things I'm want to mention is go back to the 2024 Pediatric Readiness, survey that was done nationally, and the lowest scoring thing there was family-centered care. And that's a lot of what we're talking about, is family-centered care, and people aren't comfortable with it. It's not part of that initial training, maybe having family by the bedside when you're doing a resuscitation, but day-to-day family centered care, to me, is a huge training gap.

It's not a hands-on skill. It's, it's very much a personality skill, and you have to practice that over and over again. And something I always try to tell the people that I'm teaching when we're talking about OB emergencies is, I can promise you that none of the people who called 911 for an OB emergency were we part of their original birthing plan.

We weren't part of that, and so we need to try to follow it as much as we can for them within our protocols, our skill set, if it's, you know, providing additional resources that maybe we wouldn't typically contact on a 911 call, because we weren't part of that original plan for them.

And so, we want to still keep things as close to that plan as possible, even if we're not in the hospital setting, and I think that's something that is different for people. It is not part of that initial education. It's not something that we train on often, especially, I would say OB hemorrhage and hypertensive crisises in pregnancy.

We talk about it a little bit in initial education, but it's one of those things that

we do not repeatedly train on, and something that I learned during all of this, over the probably past two years, is that they can deal with complications up to a year post-partum. That's not something talked about in our initial education. It's not something that is common knowledge. And so, stuff like that matters, so we're not just dealing with right now you're having a, a baby, but we could come to you in six months, and you have some kind of, type of complication linked to that.

And it's important for us to train everyone that's gonna be a part of this process, not just our providers. It could be family-centered care and training that we could do locally, because we do all we do a lot of the outreach. We meet people in their communities, and so we can help connect a lot of those resources to help improve this access to care.

some things we, we've worked a lot together with simulations

and using that as emergency preparedness process, and Shelby, know that we've had the opportunity to, work on this process together. Can you share more about, evidence-based, EMS obstetrical training?

Absolutely, yeah. I think that we found through our practice and in research that simulation-based learning is especially effective in this space. We need to be prepared to, give hands-on practice to our EMS providers who may not see this very often. we use models that are as realistic as possible to allow them to feel, for example, the tone of a uterus, or, to see the different positions that babies may present in when they're exiting the birth canal.

Those types of visual, spatial, hands-on cues are really needed, as well as practicing, okay, this is a medication I may not give that often. How do I hang magnesium? How do I prepare this drug so that it's the correct dosage and following my specific protocol so that when I have to do this in real life, it's not that big learning curve of, okay, I've never even looked at this before or seen this, this type of situation before?

I think another key point that we've found is that having really strong standardized protocols, especially in rural areas, really eliminate that, that step of, critical thinking of having to decide, okay, what do, what do I do first? Really having in mind exactly what your protocols are and having those easily, able to be referenced in the field or give a quick call to a supervisor or someone else that can really walk you through what to do and making those things very thoughtful and in line with evidence is going to help to improve outcomes of, in maternal mortality and morbidity.

So, our trainings have been the most successful when we have folks, participating actively, engaging in discussion, as well as doing some of that really hands-on practice and,

making sure that they understand specific topics as we move along.

Allison, can you share some about the protocol considerations, that, Shelby highlighted, especially in the EMS setting and some of the, adaptations you've made, to fit specifically for maternal health?

Yes. One of the things that we've worked on as our agency and then with the State of North Carolina is really looking into and taking a deep look into how we handle prehospital OB emergencies. It's something as a state that we are, we have identified as a need for improvement, and a lot of that is some of the positional things.

shoulder dystocia. That's not something we really talked about in initial education, but it's one of those things you may have to figure out how to walk through that, and we actually have added it to our protocol, even with images, and we plan to train on that. Even specialty

treatment protocols as far as, do you do mag, magnesium for, for the seizures, or do you have It just depends on what is available for you.

And one of the biggest things that was a low-hanging fruit for us is, how do we safely transport them after these emergencies? Is baby healthy? Is mom healthy? Can we keep them together, or does mom need specialty care but baby's okay, or vice versa, and so we made sure that we protocolized that and bought appropriate safe transport devices, because we are gonna be going down the road, and that's important.

one of the biggest things that we have noticed is that sometimes we don't have specialty equipment that you really do need that you have access to in the hospital, and so we have to figure out how to work our protocols with the equipment that we do have available in the pre-hospital setting, and that's something that I think we're gonna continue to work on as a system, because you can't carry everything, it's a truck, but we can train really well on how to adapt the things that we do have for these training gaps.

I know that simulations are very helpful in building team commute coordination and, identifying system gaps, and having the ability to do, tabletop exercise and, and low-fidelity drills helps to enhance the collaboration and competence, and competence of our, our professionals. Shelby, can you give examples of, training programs?

Absolutely. Yeah, there are several resources that are already available for, communities to use if they're interested in engaging in more EMS training around maternal emergencies. One of the biggest ones is the American College of Obstetrics and Gynecology's Obstetric Emergencies in Non-Obstetric Settings toolkit, which includes many different, resources that may help to implement this type of change in your community.

There's also another resource from the Alliance for Innovation on Maternal Health, or AIM, called the Obstetric Emergency Readiness Resource Kit. Those are big national resources, but I do think that there have been many that have emerged regionally and locally, so I, I would also offer to Alison to share any resources they've used and engaged in their training.

One of the things that we have done is reach out to the people who do this every day. You know, I said we run maybe 35 field deliveries a year in our system, and we're not a, we're not a small system, but making connections with maternal-fetal medicine programs that are in your state, because they are the ones that do this all the time, and they want to help.

They want to help figure out what protocols you can do or things that you can improve on and how to train, and work with them to help build a training program that you could use regionally or across the state with maybe a toolkit that's free to everyone so those small agencies can even get together and do training.

you know, simulation equipment is not

the cheapest thing that's out there, and you need that simulation equipment to properly train on this stuff. So, maybe get together with different regions and combine and share resources. Get together for that training.

do things online if you have access to short, quick modules. Even listen to things like we're doing today. But the big part about it is you can't just do it one time. You can't do it one time. You have to do it over and over again, perfect it, continue to adapt it for the patient population that you're taking care of, but make sure that you're including everybody where you can.

That includes your first responders, so your fire departments, because a lot of times they run EMS calls, but they may get left out of that training. They may be the first ones there, and so they need that training too. Your law enforcement partners, maybe your health department and your local clinics, include them all so that everybody truly understands what you're dealing with when you're having pre-hospital OB emergencies, and do it over and over again together whenever you can.

Thank you. I know we're getting close to our time and to wrapping up, but when we think about the policy and system-level barriers that could potentially happen, I know, Alison, you mentioned protocols that are different from EMS, and obstetric emergencies and the

liability considerations and transfer policies. I'd like to hear from both of you to, think about, what are some points that could help with, coordinating care and supporting systems of care in this area?

Unless, Shelby, I'll pass it to you first.

I think one major concept in this area is having a regionalized maternal care model, so just having a clear understanding of what resources are available in your area, what hospitals can take which patients, so depending on their gestational age or their complications, and having, again, those standardized protocols of where are you gonna go in this scenario, either from, directly from EMS, or do you need to go to a rural hospital, but then can handle transporting up to a higher level of care?

I think just having more communication between EMS and our hospital leadership so that we can understand barriers or challenges that they're facing and vice versa and making sure that, if there's any more coordination that's needed that that can happen, but I think, you know, at the, at the end of the day, we know not every facility can provide every level of care, but that every community should have access, and we need to make sure that our patients get to the right place at the right time, when, when needed,

One of the things that we often talk about is how do we communicate across all these different things? Because EMS looks different everywhere. It looks different in different regions of our state that we're in, but it also looks very different across the country. And so, one of the things that you really need to work on is getting your partners together to have these conversations.

Like you said, have everybody at the table and figure out what resources are available, and if you have a small, local community hospital-What can they help do? Can they bridge that gap to maybe stabilize to get to more definitive care, or are they not capable of that? And so really just sitting with these people, getting everyone together in the room, or virtually in the world that we're in now,

and get support from them to help make some of these decisions and changes as far as making the protocols very clear. Have standing orders so that you can just make decisions and not have to, maybe make that phone call to medical direction every time you deal with an OB emergency.

And if we really have clear established protocols across the state, or whatever state that you're in, it helps really cut down on that liability issue. And the other part of that is, think about ways that you can improve OB care in your communities, and part of that is maybe getting special partners at the table to fund a maternal-fetal community medicine program so that they can take care of mom who's high risk before pregnancy and post-birth, because we know emergencies also happen post-birth.

And so those are some things that you really could do as a system.

Mm-hmm. Thank you both. if I think about kind of the wrap-up, the talking points, we wanna make sure that every provider has access to training and tools, and Shelby's mentioned like the ACOG and AIM bundles, and then practicing these scenarios using drills and reviewing the protocols in, in emergency settings, and making adaptations to ensure they fit the needs of the individuals we're serving.

then agencies have the opportunity to do quality improvement and assess those gaps to find out what training is missing, what's needed, how we can best support and serve our communities, and ensure that everyone's at the table that's, that needs to be there. Shelby, are there any other partnership considerations we should add?

Yeah, I think Allison did a great job of pointing out, you know, involving everybody in your community and really trying to make those connections. I think one of the biggest things is just reaching out. find somebody, and that might be the person that is, is gonna connect you to, to another partner.

And those, those collaborations, you never know when they'll come in handy, and just that, we found that our EMS partners have been extremely open to our support and that, you

know, while it, it may not be their main priority or area of focus, they're extremely excited to hear from maternity,

specialists or maternal health,

consultants in their community that want to reach out and want to help with them. So, I do think, I, I do think that, using your, your mutual connections and, and just bringing everybody to the table is sort of the first step.

Thank you. So, kind of wrapping it up and, and kind of a key recap. We know that rural maternal emergencies require specialized preparation, and that our EMS and first responders are critical to having the opportunity to bridge the difference, in maternal mortality and morbidity and having, better outcomes. Training and simulations and system-level support all are very essential in ensuring that we have the best care that's provided.

we know that every maternal death is a tragedy, and many are preventable, and so as emergency responders, you have the capability of helping to save lives, but, but also ensuring that we we provide support and care that you need to walk through this process. as we transition to close, Shelby or Allison, do you have any final points?

would say, just from a paramedic perspective, someone that's always be in been in EMS my my entire career, has been set in the pre-hospital environment, my one of my final thoughts is, be open to doing things differently than you ever have before, and bringing partners to the table that maybe you've never had conversations with that can help improve what you're doing, because at the end of the day, we are, we are invited in to very private moments for people, and part of this is bringing life into the world in some of these situations.

And so we need to recognize that and realize what a privilege that is and really work to improve that so that those statistics look better than they ever have. And one of the easiest ways that you can start that is do an analysis of your agency. If you wanna begin a change, figure out where you're starting.

Figure out the OB emergencies that you have in your area and pick one low-hanging fruit, one thing that's a simple change you can do, start there and then grow. Start small.

Thank you, Allison. I think my piece of advice would be that I want to empower my EMS colleagues, that they are so knowledgeable and skillful. Think many times when they hear the word maternity, they hear even pregnancy, it's an immediate kind of deer in the headlights fear reaction, and I think that, while that may be the first reaction, how do we move past that and recognize that you already are so, so experienced in in how to provide this type of care and that,

you got this. There, there are things that you can do and ways that you can help our patients before they ever reach the hospital, and I hope that many more of you will become more open to the, the, the type of caring that is used in, in the maternity world, because you're more than capable of it.

Thank you both for sharing those final insights. And thank you for everyone that's taken the minute to listen to this, HeartBeats podcast. to learn more, go to learn.heart.org for additional resources. We'd love to hear your feedback and have your engagement. Thank you for listening today.