

*Oklahoma Innovations* Radio Show

Air Date: June 13-14, 2015

Guests: **Evelyn Bollenbach** and **Marilyn Escobedo**, Children's Hospital Foundation

>> From the OCAST Radio Network, this is *Oklahoma Innovations*, a weekly science and technology radio magazine, brought to you as a service of OCAST, the Oklahoma Center for the Advancement of Science and Technology. OCAST is the state's only agency whose sole focus is science and technology. The OCAST mission is to identify and fund promising research and technologies that allow Oklahoma to compete in a global market economy from our own backyard. This program features some of Oklahoma's most gifted scientists, inventors, entrepreneurs, manufacturers, educators and business leaders who all have one common goal: developing technology based economic growth for all Oklahomans. Now, here are your hosts Gary Owen and Tessa North.

[ Music ]

>> **Gary Owen:** Thank you for joining us on this week's addition of *Oklahoma Innovations*. Gary Owen and Tessa North. We are going to talk about a very interesting medical subject which I know, Tessa, this will be of interest to you because you've got twin babies.

>> **Tessa North:** That's right, I'm very much looking forward to talking to our guest today.

>> **Gary Owen:** Yeah. And we're going to learn about prenatal care. And there's a lot of interesting things going on at the OU College of Medicine that you will find fascinating. A lot of new things going on and you know when you think about over the history of the last three or four decades medicine has come a long way and research has come a long way.

>> **Tessa North:** That's right. Especially in terms of tiny little newborn babies. So my kids benefited from recent neonatal care that they received so I am excited to learn about the changes that have been made in recent years.

>> **Gary Owen:** How old are your babies now?

>> **Tessa North:** They are 18 months today.

>> **Gary Owen:** Oh, my gosh they are almost not babies.

>> **Tessa North:** I know. It's so sad.

>> **Gary Owen:** Yeah, that time just zips by doesn't it?

>> **Tessa North:** Yes it does.

>> **Gary Owen:** Well, we normally do some pre-show and I want to pass along to you our star's calendar of events. Those of you that have some interest in regards to some of the conferences that may be coming up around the state that are hooked into the OCAST teaching partners or OCAST sponsored events. You can check out the OCAST website and they will have a calendar there where you can check out some of the events. And Tessa has our spotlight company in Oklahoma this week.

>> **Tessa North:** That's right. Although it may seem odd, thinking inside the box is serving one Oklahoma company pretty well right now. Stillwater Startup Max Q is developing a series of multi-use lightweight insulated shipping containers that are garnering support from federal

agencies as well as some of the clients in our area here in Oklahoma City. Made from an innovative composite material Max Q's containers have three major advantages over existing containers that are currently on the market. First, they hold a larger volume, they also have a higher insulation rating and they have higher impact resistance. Currently the Oklahoma Blood Institute and OU's level one trauma center are evaluating the boxes for storing and shipping blood products. And this is pretty important because I attended a presentation by Max Q and millions and millions of dollars or vaccines are wasted every year because they are shipped inappropriately and in boxes that aren't insulated appropriately. So this potentially could save a lot of money. Currently or -- Max Q has found support also from EasyFoam which is an oil field exploration service provider and EasyFoam says that these boxes are some of the best that they've ever tried before. So these innovative containers are currently supported by NSF, SBIR funding and also by OCAST as Max Q seeks to refine their prototype and work on manufacturing.

>> **Gary Owen:** So what are they made of?

>> **Tessa North:** They are made of an innovative foam.

>> **Gary Owen:** So is it like an impact resistant kind of foam?

>> **Tessa North:** It is. It is. And one really neat thing about these containers is that they are very cost effective so I know some people might be familiar with -- I don't want to name any names but in big commercial coolers you can go buy Academy or something like that which can be very, very expensive. So these are comparable in terms of insulation but at a fraction of the price.

>> **Gary Owen:** And they are probably a little lighter weight maybe?

>> **Tessa North:** Very. They are very lightweight and the break down very easily.

>> **Gary Owen:** That's great for shipping and so forth too. All right. Interesting spotlight this week. Our Innovations in History this week. This is an interesting subject. Those of you iPhone owners listen to this. In June of 2007 the first generation Apple iPhone went on sale and revolutionized the world of cellular phones as we knew it. Closer to handheld computer than a telephone one million iPhones were sold in 75 days. It was named the innovation of the year in 2007 by Time Magazine. And you think about all the Apple innovations that have evolved since then they have well beat those sales in fewer days. It's amazing that iWatch for example, I mean, it just overnight those things just sold tons of them.

>> **Tessa North:** I have no idea the numbers on that but I swear everybody I know has one of those now. So they must be doing very well.

>> **Gary Owen:** Wow, that's amazing. We're going to transition now to our guest this week and we're going to be talking about neonatal care. OU College of Medicine is a wonderful facility in Oklahoma if you're familiar with Children's Hospital you'll kind of get the picture here. And we want to talk to our first guest who is actually with the Oklahoma Children's Hospital Foundation and her name is Evelyn Bollenbach and you are the Senior Director of Development, is that right?

>> **Evelyn Bollenbach:** Yes sir and good morning.

>> **Gary Owen:** What is that?

>> **Evelyn Bollenbach:** That means that I let people in Oklahoma know what's going on with Children's Hospital Foundation and the health care of children all over Oklahoma. And encourage generous donors, companies, corporations, individuals, associations to donate to Children's Hospital Foundation so we can support children's health care programs like the one we're going to talk about today.

>> **Gary Owen:** You know, I don't think a lot of people think about it, they just think about hospital care for children, pediatrics and infants and so forth and then obviously the neonatal care for babies. Let's talk a little bit about the research. Just kind of give us an overview. There's a lot of research done at that hospital. Right?

>> **Evelyn Bollenbach:** Sure. It is a research facility and we do bring world class researchers from all over the United States to Oklahoma and to the Children's Hospital to do that research. And the research is what makes the care better. One thing very is that people don't often know about Children's Hospital Foundation is that the work that -- the research, the clinical care, the education. That's provided to children in all 77 counties in Oklahoma. There was over 213,000 patient visits last year. And that's regardless of the family's ability to pay. So it's not just Oklahoma City facility. We serve children in all 77 counties.

>> **Gary Owen:** That's interesting. If you want to contribute to the foundation, how do we do that? Do you have contact information there?

>> **Evelyn Bollenbach:** Certainly. We have a website. Okchf.org. We are a 501 c3 nonprofit. Those donations are tax deductible. Those donations can be in general for the operation of the foundation to do our work. Those can be specific. For example the cancer program, diabetes program, eating disorder problem, and those could be made in memory of someone or in honor of someone. So if you have a family you would like to honor or a parent or a grandparent you can make a donation in honor of them and the will be notified of that donation and the same with memorial donations. It's a great way to support the next generation of children's health care.

>> **Gary Owen:** Tell us about one of the researchers and doctors who specializes in neonatology. Tell us about the guest you brought along with you.

>> **Evelyn Bollenbach:** I brought today Dr. **Marilyn** Escobedo and she is in the neonatology department and this is where it all starts. When we do tours of Children's Hospital this -- sometimes these are the sickest of the sick. You know, we talked to you earlier about your twins and people who have babies born that have compromised health and I myself had a grandchild born yesterday.

>> Congratulation.

>> **Evelyn Bollenbach:** Born yesterday so you know, the importance of that prenatal health and having the right doctors and the right facility, when you think of Oklahoma, how spread out we are. You can't have a facility with specialists in every corner of the state. There is not enough population to support it and there's not enough doctors, physicians, researcher to support it. So instead we have one really great facility right here in the center of Oklahoma and we serve children all over Oklahoma. And often the littlest of the littlest, sickest of the sick start right here at the Children's Hospital in this program.

>> **Gary Owen:** When you think about the premature birth rates around the country, let alone Oklahoma, I mean we don't think about the care that these children get, or these babies that

require very intensive care for survival and that's what we want to talk to Dr. Escobedo about. Welcome to the program. Nice to have you here.

>> **Marilyn Escobedo:** I'm glad to be here.

>> **Gary Owen:** You're an interesting lady. I've read a lot about you and I and Tessa found your bio fascinating and of course, she being a mom you have, I'm sure some questions because your twins are beyond that baby stage. But did you have some complications with your babies?

>> **Tessa North:** We had definitely some experience in the NICU so the people that work in NICUs I'm pretty sure are angels so I'm very excited to talk to Dr. Escobedo today.

>> **Gary Owen:** Give us a little about your background and how you came to the OU College of Medicine.

>> **Marilyn Escobedo:** Well, I was recruited here by Dr. Terry Stall who is the chairman of pediatrics and has really been a visionary leader in Oklahoma. And so he enticed me here from the University of Texas in San Antonio about 15 years ago and it's been a tremendous 15 years here in Oklahoma developing our neonatal services. So that's how I got to Oklahoma. I was -- and part of the reason I came was that Dr. Stall invited me to have the Reba Macintyre endowed chair in neonatology. So Children's Hospital Foundation certainly provided a lot of the attraction of coming here to this academic center.

>> **Gary Owen:** Now this is a fascinating background about the neonatal prenatal medicine at Children's Hospital because we don't hear a lot about this in the news and you don't get a lot of news coverage on this and Debbie Cox, our producer and Tessa felt this was really important to get the word out. Because we know a lot of people don't know about the wonderful care that premies get and I found some of your research interesting. But give us just kind of an overview of the department because you guys do some remarkable work there.

>> **Marilyn Escobedo:** Well, neonatology is a relatively new specialty. I mean it's only been about 40 years, 30, 40 years since anybody did anything to really intervene in the care of babies. You know, when I was born people said let nature take its course, you know. So you were lucky if you were born normal. But when I started out in neonatology a baby who was two pounds had almost no chance of survival and if that baby survived it had a 50 percent chance of being abnormal in development over the years. And today a baby that's two pounds has a 90 percent chance of survival. So the statistics are absolutely reversed and about an 85 percent chance of being perfectly normal. So that doesn't come at -- without a lot of intervention and a lot of care. Usually a lot of time in the hospital. Neonates, newborns with problems stay in the hospital longer than any other patient in the hospital.

>> **Gary Owen:** Sure. I'm going to stop you right there because we're coming up on a break. But you -- I would think for you, and we're going to talk more about this, the rewards of watching a baby become healthy and you're changing the life of not only the baby but the parents. I mean that's got to be a rewarding experience and so you're doing some wonderful stuff. We're talking with Dr. **Marilyn** Escobedo. She is with the OU College of Medicine. We're talking about neonatology and it's a very interesting subject. We've got more to talk about when we return on *Oklahoma Innovations*.

[ Music ]

>> Pancreatic cancer is the fourth leading cause of cancer deaths. With the median survival rates of only six months. As an oncologist I see far too many families suffer from the effects of this terrible disease. We need better treatment options for patients.

>> With the support of the Oklahoma Center for the Advancement of Science and Technology the researchers at CORE Biotechnology have what they hope will eventually be a treatment. Even a cure for pancreatic cancer. They have identified a protein that if blocked may prevent tumors or keep them from growing. With help from OCAST and ITE the team at CORE was recently awarded and SBIR research grant to enable them to continue their research and move closer to a treatment for pancreatic cancer. If you are a researcher or a small business in Oklahoma and are considering applying for federal SBIR funding contact OCAST toll free at 866-265-2215 or visit us on Facebook or our website at [ocast.ok.gov](http://ocast.ok.gov).

>> Now back to *Oklahoma Innovations* with Gary and Tessa on the OCAST radio network.

[ Music ]

>> **Gary Owen:** On our program this week we're talking to Dr. **Marilyn Escobedo**. She is with the OU College of Medicine. We're talking about the neonatology division and some of the research and some of the care that she does with infants. Let's talk a little bit about the background of the facility because now, if I understand, you didn't have that big of a staff over there in the early days, right?

>> **Marilyn Escobedo:** No. When I came here in January the first in 2001 drove into Oklahoma City, we had only about five neonatologists and a very small staff. And now we have 25 physicians, neonatologists. We have PhD's, a couple of one and a half PhDs and about 100 staff entirely including our neonatal nurse practitioners and our neo flight nurses. We have a dozen neo flight nurses who fly all over the state bringing babies in on the helicopter and sometimes by ground ambulance. So we've grown a lot in the clinical arena. We have almost 100 beds now where we take care of babies. Every day we have about 75 babies in the intensive care unit.

>> **Gary Owen:** Oh my.

>> **Tessa North:** And this is the biggest NICU in the state, is that correct?

>> **Marilyn Escobedo:** Absolutely. And it's the only level four which means that all the services are offered. So we have cardiovascular surgery, extra caporial membrane oxygenation, that's bypass machine for oxygenating the baby and all of the sophisticated services that can be offered anywhere in the country are offered here.

>> **Tessa North:** That's excellent. What an excellent resource to have. I know when my baby was in the NICU, you can't imagine turning over your brand new baby that you haven't even gotten to hold yet, to a, you know, a facility where you've never met the doctors. So that's an outstanding resource to have right here in Oklahoma City. Can we talk a little bit about some of the resources that are available within the NICU? You mentioned the extra -- I can't pronounce those words, but what are the typical things that you see kid's most often needing treatment for when they come to the NICU? Are there breathing issues or feeding issues or temperature issues or is there a wide variety of problems that you treat?

>> **Marilyn Escobedo:** Well, I think you can put them into three categories. The prematurity is a big one. Babies born as early as 17 weeks prior to term are in our NICU. So prematurity is a big one. Then birth defects, like babies with heart defects or spina bifida, all these kinds of

congenital malformations that, unfortunately, occur. Those babies come here for treatment. And then the third category is the babies who have trouble at delivery. So the mother has a fever, there's a cord problem, there's a -- the baby doesn't breathe it has some problem in making the transition, has an infection. So those we call those transitional problems because at birth problems. So those are the three big categories. Prematurity, birth defects and the problems of birth itself.

>> **Gary Owen:** Are you seeing an increase in the number of deliveries of sick babies and premature babies like this? Are you seeing an increase over the last couple of years and if so what's causing that?

>> **Marilyn Escobedo:** Well, actually the prematurity rate went up to about 12 and a half percent and it's actually fallen in the last year or so. Largely because the number of elective deliveries that were early, you know, a few weeks, just a few weeks before term have been decreased because of big effort across the state and across the country. So the prematurity rate has run, you know, somewhere around 10 to 12 percent for years and years and years. So I think we're getting more aware of problems prior to birth. So the obstetricians are pretty good about identifying babies who are at risk and are going to need intensive care and they get the mothers here as well. So that's the future, really, is to transport the baby inside mom to be born where they can have all these services available rather than having to pick them up. On the other hand, I mean, there are things you can't predict and the helicopter is there to go get them.

>> **Tessa North:** So what are some of the things that one can do to help prevent any chance of prematurity? I mean I would assume things like not smoking and eating healthy and getting all of your prenatal checks done on time. Those are some of the key things that expectant mothers should be taking care of but are there other things that we should be looking at as expectant mothers to help give our kids the greatest chance of survival and being born healthy?

>> **Marilyn Escobedo:** Well, I think you named most of them so you are very educated.

>> **Gary Owen:** Experienced mom is what she is.

>> **Marilyn Escobedo:** Exactly. So yes, prenatal care allows obstetricians to identify problems before they grow and get worse and are uncontrollable. Things like diabetes is increasing because, largely because the obesity epidemic. And the diabetic, woman who are diabetic when they're pregnant require quite careful monitoring. So there are things like that that do help. But generally you're right. Get your prenatal care, eat well, sleep well, take good care of yourself and you'll take good care of your unborn baby.

>> **Tessa North:** Excellent.

>> **Gary Owen:** Complicated cases. Are you seeing more of those?

>> **Marilyn Escobedo:** Oh yes. We definitely see more complicated cases. Again, largely because they are identified prior to birth. And so we get all prepared for them. So a lot of our babies who have complications, particularly with birth defects, come in with their moms anticipating all these sub-specialty care that they need. So if we have a baby with like a spina bifida problem the parents before the birth will see the neurosurgeon and the pediatric urologist and the neonatologist and all these people. And be prepared so that we can take care of the more complicated patients successfully.

>> **Gary Owen:** We have, we are talking with Dr. **Marilyn** Escobedo, she's with the OU College of Medicine and we're talking about neonatology. It's a very fascinating subject and maybe you know someone out there that may have a need for their services and care. We encourage you to stay tuned to the program; we're going to give you information to learn more at Children's Hospital. When we return on your Oklahoma Science Radio Magazine *Oklahoma Innovations*.

[ Music ]

>> Don't go away, there's a lot more to learn on *Oklahoma Innovations* with Gary and Tessa on the Oklahoma Radio Network.

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>> As a police officer one of the most dangerous parts of my job is arriving on a scene where an armed suspect has barricaded himself or where we suspect some type of booby-trap. We're most vulnerable when we don't know what kind of explosives or weapons are on the other side. It can be deadly.

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>> Research and development, technology transfer and commercialization. Creating high paying jobs in Oklahoma is what OCAST is all about. This is *Oklahoma Innovations* on the OCAST radio network.

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>> **Gary Owen:** If you've just joined us we're talking about neonatal care this week on *Oklahoma Innovations* from the OU College of Medicine. 30 years ago half of the babies under three pounds died and of those who survived half were abnormal. Now 90 percent of them live and 85 percent of them are normal. To quote Dr. **Marilyn** Escobedo, one of our guests. Neonatology is giving these little patients the chance to participate in the human experience. Our other guest who joined us early in the program, Evelyn Bollenbach, she is with the Oklahoma Children's Foundation. Now you obviously as you mentioned in the early part of the program,

part of the mission of the Foundation is to attract researchers and doctors here and one of the things we look at is the future doctors and some of the training that these students are getting at OU College of Medicine, particularly in this division. Obviously it is growing, isn't it, growing interest?

>> **Marilyn Escobedo:** Yes it is. And the important thing, one of the things that Children's Hospital Foundation emphasizes is supporting the education of the next generation of providers and before the show we had talked about that maybe when we grew up in rural Oklahoma we just went to a general practitioner and maybe a pediatrician wasn't available outside of the large metro areas. But it is so important that these providers that are educated here become doctors, pediatricians, specialists, they stay in Oklahoma and have programs that support them so that children, once again, going back to children in all 77 counties have access to high quality medical care throughout the state.

>> **Tessa North:** So there's a new fellowship, relatively new fellowship that has been started at the Health Sciences Center, is that correct? To help aid in training these new doctors?

>> **Marilyn Escobedo:** There are several fellowship programs supported by Children's Hospital Foundation. That's another program that donations can support and we have very generous donors whether provide the money to have these fellowships to support these up and coming physicians and once again, a very important program that the average person can support. It doesn't take, you know, hundreds of thousands or millions of dollars. People can contribute by doing employee payroll programs or getting their civic group together and having a car show or a race or some kind of fundraiser. And all that money is compiled and put together to form these fabulous programs like fellowships that do just that. Educate that next generation of doctors.

>> **Gary Owen:** You can tell she is compassionate about her work?

>> **Tessa North:** Definitely. So speaking about training new young doctors that are going to be entering the field soon. We've heard a lot, not only in Oklahoma but across the nation of there is, seems like a widening gap in between the number of people that require general care from like a family practice doctor or a pediatrician and the number of pediatricians and family practice doctors that are actually graduating. It seems like people are going more toward specialties. Is that a correct assumption? Are we starting to see a dearth of pediatricians and family practice doctors?

>> **Marilyn Escobedo:** Well, we're training a lot of pediatricians in Oklahoma and we need to train more. So it really is a matter of we've never had the supply that we need for the demand. And I think that pediatrics has always been paid a little bit less and some of the access to care has been an issue. But I think we're doing a good job in training new pediatricians here in Oklahoma City and Oklahoma for the state. It is true that when people train in the state they are more likely to stay here. So when I came here 15 years ago we started a fellowship program right off the bat. And we've trained 15 people now to be neonatologists. And you see this requires 14 years of training past high school. So you're talking about a huge investment in time and effort for talented people. So you take a pediatrician and then the pediatrician has to commit to three more years of training for fellowship in neonatology for instance. So we've trained about 15 people and they and about half of them, no actually 10 of them are in Oklahoma. Some of them are in Tulsa, here and many have stayed on our staff. And we have been able then to actually start another NICU in Lawton at the Comanche County Hospital by using telemedicine which is another innovation that we've done to provide care. And this has been made possible because we

have grown our own sub-specialists so that we can -- we able to do this to provide care in the state. We've also trained nurse practitioners in neonatology and our flight nurses. So it's not just the doctors but also these other health care providers and we need everybody to provide the level of care that Oklahomans deserve and especially Oklahoma's children.

>> **Tessa North:** Telemedicine NICU. That sounds very interesting. Obviously the health center in OU medicine is at the forefront of some really cool innovation here that's going on. Can you talk a little bit about some of the research that might be going on at the health sciences center. I know you have some interesting research related to bronchial pulmonary dysplasia. Did I say that correctly?

>> **Marilyn Escobedo:** Yes you did. Actually the bronchial pulmonary dysplasia is a consequence of being on a ventilator which many of the premature babies require for some time. So if the baby is born prematurely requires surfactant to breathe and then, which is a substance you put down through the windpipe. But also a mechanical ventilation to support the breathing. That sometimes that becomes a chronic problem so bronchial pulmonary dysplasia became an issue when we became successful at ventilating. So we didn't have a good model for studying that because human beings are complex, right? So early in my career I developed a baboon model, a baby baboon model for a bronchial pulmonary dysplasia and that model has produced about 200 papers of innovations and understanding for bronchial pulmonary dysplasia. But we do research in very different areas. We do some education -- we do education research. We do application research and we do basic science research. So for education we did a study on trying to train people to intubate a baby. That was because we need to have the techniques to provide this kind of care. For clinical application we're doing a study with the telemedicine to find out if that is equivalent or better, and cheaper than transporting babies that don't need the highest level of care. And then in basic science we're doing a number of things in the laboratory. So we do research at all different levels.

>> **Tessa North:** You guys really do everything over there. Research, teaching, clinical practice obviously saving lives. It's pretty awesome facility we have across the street from us.

>> **Marilyn Escobedo:** What makes it certainly interesting, I've said I've never had a boring day at work.

>> **Tessa North:** I believe it.

>> **Gary Owen:** I guess not. Wow. We talk about some of the new technologies and led advancements in medical care because obviously one of the things I'm sure that you deal with, like every hospital, and with premature babies, one of the concerns is always the risk of infection. How are you dealing with that today because these little guys and gals, they don't have a lot to fight with at such, you know, a level of infancy, the best way I could describe it. So how do you deal with that. I'm sure that's a high risk issue.

>> **Marilyn Escobedo:** It certainly is. We actually did some research a few years ago on giving babies' antibodies to the common organisms that -- the common microbes that cause problems. But actually what we do is good practice. Which is trying -- washing hands, keeping things clean and managing every time we enter the baby's body like with an iv or one of these little catheters that we are extremely careful and we have very strict techniques for doing that. So we have an extraordinarily low infection rate in the neonatal intensive care unit. But it requires tremendous amount of effort all the time. Surveillance, surveillance. If there is a uptick than we reexamine

everything again so that we keep the infection rate very low because you're right. These babies are born without many defenses.

>> **Gary Owen:** That's amazing stuff. We could spend another hour talking about all this because we -- and I wish this was, this is one of those times I wish it was television because we could see some of the cases and show some of the research they're doing on camera. We're talking with Dr. **Marilyn Escobedo** with the OU College of Medicine specializing in neonatology and Evelyn Bollenbach. She's with the Oklahoma Children's Hospital Foundation at Children's Hospital both of you, great partnerships here in offering Oklahoma some great services here. And we're going to give you some information if you would like to find out more about the foundation and how you can perhaps make some donations when we return on *Oklahoma Innovations*.

[ Music ]

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[ Music ]

>> **Gary Owen:** Every day of the year 60 to some 75 infants in desperate need of special care receive it from Dr. Escobedo. Our guest who is on the team of neonatal prenatal experts at children's hospital on the OU College of Medicine Campus. And you've been hearing a lot of information of everything from the special care these babies get to some of the research going on at the hospital to educating our future in neonatal specialists. Now Dr. Escobedo, you have a personal touch on this. You got a personal story to share with the audience because, it's my understanding you have a grandchild who was born premature. Is that right?

>> **Marilyn Escobedo:** Yes I did. So after all these years of taking care of other people's children and the families I really had a personal experience of my own when my daughter, who was traveling for business out of town developed severe abdominal pain and she called me and I said where is the pain? You know, because I thought, is it appendicitis or is it preeclampsia. And she said, oh, it is right below my chest. And so I knew immediately that this was probability preeclampsia and so I called a friend of mine in that city and said could you go get my daughter and take her to the hospital because I think she needs care. So they took her, she was taken to the Tertiary Care Hospital and she was delivered that night of a 780 gram, that's about a pound and 10 ounce baby at 29 weeks. And of course, this is a nightmare for a neonatologist because I knew all the terrible things that could happen. And I also knew that premature babies have a much

better chance of survival and doing well if the mother is treated with cortical steroids before the delivery. And my daughter didn't have that chance because she was delivered as an emergency. Her blood pressure was 200 over 120 and she was in danger. So they delivered the baby for my daughter's sake but here we have this little premature baby who was resuscitated by neonatologists and the baby was intubated and put surfactant down into his lungs. He was put on a ventilator. Meanwhile I'm driving. So to get there. And so the little baby's name is Julian. And Julian responded to all the treatment but he was in an incubator and his parents of course were out of town and for 10 weeks in the intensive care unit. So I really saw firsthand the terrible difficulties of a prolonged hospitalization on the family and how difficult it is to deal with all the uncertainties that occur every day to say, is this going to be a complicated day? Is this going to be the day where something occurs that will compromise his future? Now, we were very fortunate in that Julian came through without what I call the bad three letter words. And these are all the abbreviations that we doctors use. Like BPD, for bronchial pulmonary dysplasia and NEC for Necrotizing colitis and IVH for bleeding in the brain. And all the terrible complications that can occur. He escaped. And so after 10 weeks he was released from the hospital but he spent those 10 weeks in an incubator with a canula with oxygen and so forth and so I was really very much personally involved in the uncertainty and the--scary time. But you know one thing that really -- that really got me in the heart was the incredible hope of parents and whereas I seem to - I always was thinking about all the bad things that could happen because my daughter and my son in law, the parents of Julian, were continuously hopeful. They always identified with that little guy as what he could be and what could -- what good could come. And so I really hung on to their hope as my own.

>> **Gary Owen:** Well, as I was going to use as a lead in earlier, what we might call medical miracles, those in your field call it preventive intensive care and obviously you had a lot of faith in the doctors and your colleagues even though they were out of the area, you had a lot of faith in their expertise and training and staffing and so that I'm sure put some -- because if you were just a normal grandmother you would just be freaking out over this. But because of your knowledge and knowing that with the kind of care that your grandson was going to get, that probably helped to relieve a lot of your fears, right?

>> **Marilyn Escobedo:** Well it was both ways. Because I knew all the bad things that could happen and but I did know that it could -- those things could be -- we could escape. We could be fortunate and good care really helps.

>> **Gary Owen:** Tessa, did you have something there?

>> **Tessa North:** Well, you mentioned these bad three letter words that often go along with prolonged stays in the NICU. Once a child graduates from the NICU after 10 weeks, a month, however.

>> **Gary Owen:** I like the term graduates.

>> **Tessa North:** Yeah. It really is. It's -- I mean I felt like it was a graduation when my son left. I was so delighted I wanted to wear a little cap and gown for him. But there are often complications that follow these children or there can be complications that follow these children. Yeah. Later in life, maybe just a few months. What are some of the typical things that you see? Maybe that aren't necessarily so terrible like, you know, hemorrhages in the brain or things like that. But other things that might go along with preterm birth.

>> **Marilyn Escobedo:** Well, yes, it's very important to follow up and realize that premature babies particularly and others with congenital malformations are at risk for long term complications or sequely or effects of their hospitalization. So actually here and in Oklahoma City at the Children's Hospital we run a follow up clinic. So that we follow all the little tiny premature babies and do develop mental exams and check them out periodically over the first few years afterwards. And because they are at risk for -- babies are at risk for visual difficulties, hearing difficulties, speech abnormalities and developmental delay. They may have motor problems or learning problems. And they can have behavioral problems long term. Now that's the minority of babies that have problems. As I said, 85 percent turn out perfectly fine. On the other hand for those who -- since they are at risk what we want to do is detect those problems real early so that we can get intervention to prevent them. And that's particularly true of the sensory problems like if you have -- need glasses or hearing aids that those things are done early.

>> **Gary Owen:** Wow, that's amazing. I want to give a little time back to Evelyn Bollenbach with the Children's Hospital Foundation because Children's Hospital Foundation because we want to pass along some information for those of you whether you want to be a private donor or a corporate donor. Perhaps you're interested in contributing some dollars to this wonderful foundation to help continue on the wonderful work that's being done at Children's Hospital. Evelyn, give us a little information there.

>> **Evelyn Bollenbach:** You bet. People can certainly make donations through the website as [okchf.org](http://okchf.org). there's a donate now button you just click on and fill out your information. And it's a very safe way to use a credit card or a debit card to donate. On that website is also a mailing address. People can mail a check or just give us a call and we can talk to you about what your area of interest is. We've had something really neat happening lately that some families have been doing. When their kids have birthday parties instead of the parents bringing gifts for kids who may not necessarily need gifts they ask them to bring instead a check for Children's Hospital Foundation. And they do and then the kids get to come, bring the checks to us and present it to us. And it just teaches the children philanthropy and it's just a great way to once again honor a family member. You know, you talked about having kids in the NICU and if you go through that you certainly have a heart for knowing that support is needed, financial support is needed for these programs. But think of all the people who, like myself, I'm so thankful that my kids and my grandkids were born healthy, that that in itself is a reason to give to Children's Hospital Foundation. So that kids who maybe aren't so fortunate could still get that specialized care that they need.

>> **Gary Owen:** I'll tell you. You ladies have been a wealth of information. I can't recall how long it's been since we've done a story on Children's Hospital. Wonderful facility on the OU College Campus of Medicine. And I'll tell you. If you would like to learn more information or to learn more about the services being offered at Children's Hospital of course Children's Hospital has a great website. What is the website address again? [Okchf.org](http://Okchf.org). That's really good. And Tessa you've obviously learned more.

>> **Tessa North:** Absolutely.

>> **Gary Owen:** And you actually got to take advantage I guess of some of this.

>> **Tessa North:** We did and we are very fortunate that we have such resources here.

>> **Gary Owen:** Yeah. Great personal stories here and I hope that our audience has learned a lot more about the wonderful services being offered and the research being done at Children's Hospital. We thank you for listening to us this week and we hope to have you join us next time for another addition of Oklahoma Science Radio Magazine *Oklahoma Innovations*. Have a good week.

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