Hi, this is Pat Iyer with Legal Nurse Podcast and today we're going to be talking about an issue that drives a lot of concerns, a lot of medical malpractice suits, and a lot of medical damages associated with taking care of catastrophically injured fetuses who become infants and require a lot of support from our medical system. Because this is such a hot area, I wanted to bring into Legal Nurse Podcast Matthew Sappern who's the CEO of PeriGen, which is a global leader in applying artificial intelligence to obstetrics. His management experience includes being part of WebMD and Allscripts, which is a computer software program, which is now...It's now out of business Matthew, is that correct?

No, Allscripts is going strong. Actually, I started with Eclipsys which was acquired by Allscripts. So, Eclipsys is no longer a corporate entity.

Okay, wonderful. We're going to be talking about how technology can help reduce adverse events in the events surrounding childbirth, and I wanted to welcome you to the show, Matthew. First, I'm pleased that you can take some time out of your busy schedule to be part of Legal Nurse Podcast.

Pat, I'm thrilled to be here. Thank you very much for having me on and to all your listeners. You know you deal with some very tough issues and if there's any way I can help, I'm more than willing to do it.

Perfect. I'm sure that our listeners know that maternal and fetal outcomes in the United States are lagging behind where they should be. We have listeners, Matthew, in 72 countries and their fetal outcomes may be very different than the ones that we have in the United States. But one thing is probably very true, is that we've got a much more litigious society than many places on earth. And I know also that medical malpractice awards are skyrocketing. So, can you give us a little perspective on what you see or what you've been...
hearing about the number of cases that are being brought for specifically poor outcomes in the labor and delivery suite?

**Matthew:** Certainly, Pat, it's a great question and even before I get there, your point about you know so many countries on this podcast. Yes, America is very litigious. That sets up a certain set of circumstances, but I think it's safe to assume everyone listening to your podcast ultimately wants to reduce adverse events in childbirth, those that are avoidable. And so, whether or not medical malpractice is the driver for you and whatever nation you're practicing, you know there is a whole new generation of technology that we think is going to drive… that we know and actually have seen drive better outcomes or help drive better outcomes and reduction in those adverse events.

Now in the U.S., it happens that medical malpractice is so critical. And Pat, my take on the fact that many of these cases are leveling off in number, I would caution everyone on this podcast to not take a whole lot of comfort in that. It's my contention that that's a very temporary plateau of the fact that case filings have leveled off. The sheer number of some of these settlements and indemnities getting paid are staggering. And it's my feeling, and I know attorneys who feel that some plaintiff attorney groups are building a war chest from these fairly substantial awards that will subsidize and attempt to operationalize an approach to litigating the more marginal cases. So, I would look at the current leveling off frequency as a very temporary plateau. And frankly, I would start preparing for a resurgence of more marginal cases being brought to trial.

**Pat:** Okay. Well, that's an interesting perspective in terms of looking at the trends. Since you've mentioned, I in my introduction referred to the fact that your company's involved in applying artificial intelligence. Can you give our listener an overview of what your product does so that some of the other questions that we go back and forth on will make sense?

**Matthew:** Yes Pat, thanks. I think that's a great idea. What we do at PeriGen, and we really are the global leader in doing this, is we apply artificial intelligence to create algorithms by which we interpret fetal strips. It's really pattern recognition and we've become very adept at identifying troubling patterns. And identifying them with enough objective data that a bedside nurse can see that something's going on usually hours in
advance before they would normally maybe notice it. And be able to articulate up the chain of command that something's wrong here and do it based on objective computer-driven data as opposed to subjective data.

The benefit of these computer systems, Pat, is that they're always on. They're always watching. They don't get tired. They don't get distracted. We all know that a nurse is living a pretty hectic life these days. The labor and delivery floor is quite crazy, very dynamic. And that's the root cause we believe of a lot of the bad outcomes, is that failure to or delayed recognition and delayed treatment because the nurse is doing so many different things. And this is a tool that just sits there every second in real time and simply raises its hand when something seems amiss and says you know, "Excuse me nurse, can you take a look at this over here and here are the facts that we're seeing."

So, we like to think of it as a real nurse augmentation tool and nursing support tool so when she's documenting or talking to the mom or talking to the dad or helping her colleague across the hall or in a huddle or a shift change or when someone walks in with a prolapsed cord or that you know baby bus pulls up because it's a full moon. All of these issues present a lot of risks and we try to create a standard automated, persistent tool that can help nurses manage that and feel a little more comfortable that their patients are being watched for troubling signs like series of fetal heart rate decelerations over a protracted time.

Sorry if that's more than you asked for, but hopefully you get the general gist of it.

Pat: I think that gives us a great context for what we're talking about.

Matthew: And it's important to note, Pat, that the solution itself is it's an FDA-cleared device. It's also a device that has been tested and validated and actually a paper published on it by the National Institutes of Health. It's quite accurate, which it would have to be to be of any real value. So that's the end of my commercial, but these are important things to understand.
What we try to do is put an expert. We… The whole goal of artificial intelligence in any form or function is to be able to take an expert eye, if you will, and give it scale. And that's really what we're trying to do, just to be equivalent to that awesome nurse who everybody knows that whenever there's a question, you always go ask her. We're trying to capture that level of confidence in a computer program so that great nurse on every floor doesn't always have to be answering a million questions.

Pat: You raised a great point because the great nurse who's very experienced may also be the person who's in her or his 50s or 60s and maybe thinking that staff nursing is not the solution any longer. And when experienced people leave the healthcare setting, they take away from that unit that critical thinking process that we as legal nurse consultants know is so important in detecting signs of a problem and taking that concern up the chain of command and bringing the skills to the bedside.

Matthew: That's so true.

Pat: Go ahead.

Matthew: You know, Pat, that's… I'm sorry. That's so true and I think that labor and delivery floors across the country are contending with that right now. The baby boomer generation of super experienced nurses is in fact retiring and moving on to other things.

It does bring up an interesting counterpoint though, because you know not all the preventable adverse events are with the younger, less experienced nurses. Oftentimes we'll find that this concept of normalization of deviance where a very experienced nurse might have seen a problematic, potentially troubling or non-reassuring fetal heart rate pattern over you know 30 or 40 minutes and has a lot of experience where that's essentially worked itself out. And she might take that route and say, "I understand that you know ACOG would suggest this is a problem or AONE would suggest this is problem, but boy I've seen this a bunch. It always works out. It's nothing to get excited about. And I'm going to go off and I'll come back in 30 minutes." And maybe she comes back in 30 minutes and things haven't gotten better. In fact, maybe things have gotten worse. Maybe that 30 minutes turns into 45 minutes.
So, I do think that this concept of, "I've seen these deviations before, they almost always work out" that's almost as dangerous as, "Geez, I feel pretty inexperienced." So, this is why having some sort of a controlled, very consistent and standardized base of reference at the bedside is so important.

**Pat:** And I think the studies from insurance companies would support you in the sense that it is not the only the inexperienced person. But I think you've brought up a good point about how the more experienced nurse can add a layer of interpretation that may not be warranted or perhaps minimize, as you're saying, the significance of the changes that are showing up.

**Matthew:** That's very well said. Clinical bias is a powerful and occasionally dangerous thing.

**Pat:** That's true. That is true. In the setting of OB being such a highly litigated service line, do you see any possibility that computer driven analysis increases exposure?

**Matthew:** Well, and just so everyone understands, I'm not an attorney. But in my opinion and having spoken with several attorneys and nurses, once a strip is already under review in a trial you know the risk is already quite significant. Remember, this nurse has a split second to make a judgment, whereas the plaintiff's attorneys have years of sitting in a nice quiet air-conditioned room and taking their time and looking at each and every second on that strip. I'm sure a number of your listeners have looked at strips in court cases and said, "Good God, how did this happen? You know the most junior nurse in the world could see that this is an issue." The reality is that you know in the heat of the moment with all these distractions going on sometimes this will happen.

So, I think you know ultimately the best solution is to use technology to reduce those events from happening because once you find yourself in that trial, you're already in a tough spot. You know, the next best outcome is to show that we noticed the condition because this tool identified the condition. We recognize it, we discussed it, and we followed a course of action. There was still a bad outcome. Bad outcomes happen. They're always going to happen. There's no 100-percent insulation from that. But if you can use a tool that does a
better job of ensuring that you at least recognize that there's an issue and you talk with someone about it, you know ultimately the award will come significantly down.

Now, Pat, if a nurse or a provider sees this warning from this technology and chooses simply to ignore it, doesn't have a basic consultation with a colleague, you know my advice there is you really need to consider how is that staff being trained and whether that clinician or that provider frankly is a good fit for L and D. Because when something is saying, "There's a problem here, please come look at it" and you choose not to do so, you know that's a much bigger issue.

So, ultimately, it's about reducing the number of times that you find yourself in that jury trial and that's really where the technology comes into play. I think by the time it goes to trial, whether the technology was there or not, is likely not such a big deal. And by the way, it hasn't been yet. In 10 years of doing this, we have yet to be enjoined in a lawsuit in any way, shape, or form.

**Pat:** Well, I couldn't imagine your company being a defendant unless there was some defect in the software or some product defect that would prevent it from working reliably. I think the issue comes up more with people who have technology available and either are not trained in it so therefore they ignore it, or they're so stressed that they ignore it and then bad outcomes occur as a result of that behavior.

**Matthew:** I agree. It's a requirement that developers of tools like this pay special attention to the intuitiveness of the tool. It needs to be very, very easy to use. For example, with our tool, it's merely a color change. It's so binary. If there's a color here, if this is orange there's is a problem, if it's not, there's not. So, you know we've tried to make it really you know that simple. If in the heat of the moment a nurse feels overwhelmed that things are going wrong and freezes, and again I kind of get back to my last statement of that might not be someone who's cut out for obstetrics.

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Pat: I wonder about the layers of complexity that we add to the clinical environment. I was talking to a woman just a couple months ago who works three days a week as a medical surgical nurse. And she said, "Every time I leave at the end of my three days, I come back the following week something has changed. There's something new." And she had a lot of complaints about her hospital's electronic medical record system as being in a constant state of flux, which I know is a different set of technology than we're talking about.

One of the concerns that gets raised is are we putting too much technology in health care and are we having people sit in front of computer screens while they are trying to talk to the patient, but their eyes are on the machine and not on the patient? What are your thoughts on how that plays out with tech?

Matthew: I think there's a lot of truth in that. And I come from a world where I worked on EMRs and implemented EMRs at hundreds of hospitals. And I think there's a place for EMRs, absolutely, but they have had that side effect where they're taking attention away from the patient. And I think the only way to survive that is to, and it sounds a little bit counterintuitive, but it's to create technologies that don't really require
a whole lot of handholding, don't really require a lot of input and are 
very discernible. Have a real understanding of what matters. In our 
service line, in OB, we shied away from threshold-oriented alerts 
where if there's one fetal heart rate deceleration the machine starts 
blaring. No one's really too concerned about one, right, but if there's a 
long term trend, because our tool is looking over four and you know 
even 12 hours, if there's a long term trend where you see patterns of 
progressive fetal heart rate decelerations or patterns of uterine 
tachysystole, that's when our machine speaks up.

So, it's a great day for our machine to be completely quiet, frankly. 
We don't really want to be invasive. We don't want to be another thing 
that this poor nurse has to contend with. She is already contending 
with a lot as you say. So, I think that level of being highly discernible 
and you know when we say look at something, there's a reason. There 
really is a reason to look at it. You know one time out of 10 you might 
say, "I'm not too concerned," but when we tell you there's something 
to look at, please go look at it.

As for EMRs, I think that unfortunately they're not going away. 
They've become a necessary evil. As you and everybody on this 
podcast knows, if it's not documented, it didn't happen. And so, as 
technology companies on the fringe of the EMR, it's inherent on 
Paragon and other companies like the Paragon in every service line to 
figure out ways that technology can make nurses, frankly, more 
productive and less at risk. Because the nurses are going to have to 
keep contending with these EMRs.

**Pat:** Yes, it's an interesting dilemma. We've gotten rid of the problems with 
interpreting handwritten records, and we've introduced another set of 
problems with the electronic medical records. I don't think we've 
come up with a perfect system yet, but it continues to evolve as long 
as the vendors are listening to the users and the system is made as 
clinically effective as possible.

**Matthew:** I agree. And not only listening to the users, the vendors, but the 
hospital IT organizations really need to spend a lot of time listening to 
the users as well. We've had some implementations of our solutions 
that have gone so beautifully, just start to finish have gone excellently 
and the users love them. And we've had others that were a little rocky, 
the users sort of don't really appreciate the workflow.
And my advice to everybody listening is that the IT team needs to work very closely with the clinicians early on and say, "Help me understand today's workflow. What you like about it, what you don't, how we can make it better?" Really enlist a partner and a participant in the IT team and the clinical team to work together. And by our record, you're going to have a perfect go-live if you do that. The clinicians are going to love the system. The IT team is going to understand and be able to maintain the level of service that it needs to, to keep those clinicians happy. But if an IT team simply operates on their own without spending time with the clinicians, it's destined to a rocky start and sometimes to failure.

Pat: You make me think of what happened when my son went to MIT for his doctorate in computer science. He came home after the first year and he said, "You know, Mom, there really is a thing called a computer nerd. The people in my class would rather deal with a computer than they would with the other kids who are in this program."

Matthew: And there are great places for those people too. Research is filled with folks like that. But if you're delivering care and you're in workflow where nurses are talking to docs and patients, you need to make sure that everybody gets to.... Not everyone gets a say and this stuff doesn't really work all that well as a democracy, but you need to be cognizant and respectful of what the clinicians are trying to do and how, and what makes their life miserable versus better.

Pat: Yes, exactly. Well now we've got a situation, for example, where we've in health care, we are struggling with breaking down the hierarchy and functioning more as a team with respect for everybody, the IT person, the labor and delivery nurse, the obstetrician. What have you seen in terms of how teams are improving their communication and how the technology that you're describing impacts that communication?

Matthew: I'm so glad you asked. That is one of our proudest moments whenever we see an organization roll our system out. You're right, there are deeply seated, traditional hierarchal roles. You know physicians and other providers are sometimes not as a willing to listen to the bedside nurse who really is, frankly, serving as the eyes and ears of the doctor and labor. It's a very fragile trust. It takes a long time to build. The
technology that we have, and I'm sure that other vendors have as well, helps by giving that nurse objective data.

So, there was a time, and I'm sure you remember and I'm sure others on the podcast do, where you would call up the doctor and say, "Hey Doc look, I think I've got a situation here" or "Doc, we've got an unhappy baby down here." And that's really presenting a physician with a problem. Whereas now they can call up and say, "Hey Doc look, in the last hour we've had four variable fetal heart rate decelerations, 60 beats per minute, this depth…" It becomes a much more productive phone call. And when you're having communication like that, that's fact-based, data-driven Pat, it tends to go much better. And I think the level of trust and respect because you're having those conversations based on fact really accelerates it.

We've got systems now where the language is courage and vigilance. Well, what's the system saying? And by the way, occasionally they both disagree with the system, and we love that. We love when you are yelling at your computer versus yelling at each other. In my mind, that's a win too. So just having an objective reference point that never wavers, quite consistent all the time, is such a help. It creates a common language in communication, common trust and common faith in each other, so the communication gets much better very quickly.

Pat: I know all for the benefit of the patient and the baby.

Matthew: Oh my God, remarkable. And let's also think about shift changes. When you're using a tool like ours that shows, and again I'm sorry if that's promotional, but if you're using a tool that shows a four or even a 12-hour labor progression and shows those rocky spots with clinical decision support markings made by the AI system, that you can blow up on screen and look at it and really understand it. You know when you're doing handoffs or shift changes or huddles, you have an objective set of data by which you're running that discussion. It just takes so much of the variability out of that conversation that the communication is concise and just so much more productive.

Pat: Another question that I wanted to ask was funding the technology because budgets are tight. We know that hospitals are working on very small profit margins and out of that profit margin must come
investments in technology and a variety of other important elements within the acute care setting. Can you give us a sense of how other healthcare systems help to secure financing?

Matthew: Absolutely. Some of our customers have been quite successful by engaging their risk management organization. Pretty much every U.S.-based hospital on your podcast I'm sure is running their own captive in handling their own medical malpractice for at least the first bit of risk, whether that's $5 million, $10 million, $50 million, depending on the size. The hospital is owning some of that and there is an organization of very prevention-minded folks who see every claim and must service every claim. And typically, these organizations have some discretionary budgeting capacity to invest in patient safety and care quality initiatives. And so, we've seen several our customers tap into that to partially pay.

Other groups have had fundraising, specifically fundraising events specifically foundation events for this tool. And the third path, which is quite interesting, is now several medical malpractice reinsurers. Those insurance companies that are owning risk above that captive I mentioned. Firms like Ironshore and firms like Beazley. They're now offering incentives to hospitals to install PeriGen technology and likely other technologies as well in other services if you can prove that the use of them is actually improving outcomes. And we've got very documented proof towards that.

So, there's a lot of money out there if you're creative. It's important to remember that OB is such a critical part of a hospital systems lifeblood. Most of the time the largest number of patients are coming over the course of the year, are coming to OB, and you're starting the relationship with that patient's family. If things go well in OB, you've probably got a family coming through your system for life. If things go poorly, you can rest assured you have lost that business, that pediatrics business, that adult business. It's all gone. So, you can't overlook the importance of that first experience with a health system. It happens in OB. If you talk to the right people, you can find alternate sources of funding.

And by the way, this is not really expensive stuff. I mean we developed this tool and typically it's $35 a birth. I mean, we're not
talking about buying a raft of MRI machines here. So, it's a very cost-effective way to keep yourselves out of the courtroom

**Pat:** And we love to keep people out of the courtroom because it means that patients and babies are healthy and none of us want to see people get injured.

**Matthew:** That is the ultimate truth.

**Pat:** I appreciate your time, Matthew. How can our listeners find out more about your company and the services that you offer?

**Matthew:** Pat, I would direct all your listeners to go to our website. It's www.perigen.com. PeriGen is P-E-R-I-G-E-N dot com. We've got several resources up there. We have demonstrations, we have white papers. We have been published over 50 times in peer review journals, nursing journals, the *Gray Journal*, some technology journals. So, it's a fun site to spend some time on and there's ample information, and ample ways to get more information from us.

We're always hosting a webinar. We've got some webinars coming up on the Joint Commissions performance metrics. Not so much about our product, as much as it's more about here's what you as a nurse need to be thinking about and here's what you as a nurse administrator or chief nursing officer might want to be considering relative to TJC and what you have to be reporting on now. So, it's full of information. Again, www.perigen.com, P-E-R-I-G-E-N. Please visit, we would love to have you.

**Pat:** Thank you, Matthew, and I appreciate your time. This has been…

**Matthew:** It was a ton of fun, Pat, and you know I'm always here for you. Have me back as much as your audience will take.

**Pat:** Okay, that sounds like a deal. This has been Pat Iyer and Matthew Sappern talking about the use of artificial intelligence in obstetrics to improve patient outcomes. Thank you for being part of this show and be sure to come back next week. We'll be having a new interview. We appreciate also you downloading our new app, which is Biz Edu. You can get it from legalnursebusiness.com/bizedu, where you can obtain podcasts, reports, videos, courses, and webinars all in the palm of your hand.
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