

Latest and Greatest in Management of Pediatric Diabetes

In this episode, listen as Taryn Vaeth, a pediatric nurse practitioner discusses pediatric diabetes, and covers how nutrition, behavior management, and knowledge of the latest medication and technology are one of the many tools used to help patients.



Featured Speaker:

Taryn Vaeth, Pediatric Nurse Practitioner (CPNP-PC)

Taryn Vaeth CPNP, CDCES earned her Bachelor of Science degree from the University of Missouri-St. Louis in 1999, and Master of Science in Nursing in 2005. She holds a certification as a Pediatric Nurse Practitioner (CPNP-PC) from the Pediatric Nurse Certification Board. Taryn has worked in diabetes management since 2006, and started in Pediatric Endocrinology at Children's Mercy in 2011. She holds a certification as a diabetes care and education specialist (CDCES). Taryn is passionate about educating patients and families on how to successfully manage diabetes, and fit it into their daily lives. Taryn is a member of PENS (Pediatric Endocrinology Nursing Society), ADCES (Association of Diabetes Care and Education Specialists), NAPNAP (National Association of Pediatric Nurse Practitioners), and STT (Sigma Theta Tau).

Transcription:

Tricia Williams: Hi, guys! Welcome to the second season of the Advanced Practice perspectives. I'm Tricia Williams.

Tobie O'Brien: And I'm Tobie O'Brien. This is a podcast created by advanced practice providers for advanced practice providers. Our goal is to provide you with education and inspiration. We will be chatting with pediatric experts on timely key topics and giving you an inside look of the various advanced practice role at Children's Mercy.

Tricia Williams: We're so glad that you're joining us today. So sit back, tune in and let's get started. Today, we will be chatting with Taryn Vaeth. She is a pediatric nurse practitioner in the Endocrinology Department at Children's Mercy. Welcome to the podcast, Taryn. We are so happy to have you on with us today. Can you tell our listeners a little bit about yourself and what your background is?

Taryn Vaeth: Yes. Good morning. I'll tell you a little bit about myself. I graduated with my Bachelor's in Nursing and 1999 from the University of Missouri St. Louis. I worked as a pediatric intensive care unit nurse for the first several years of my career, also did some travel nursing. In 2005, I graduated with my Master's in Nursing from the University of Missouri St. Louis as well, obtained a certification as a pediatric nurse practitioner and started working in pediatric diabetes in 2006 initially in Springfield at St. John's and then came to Children's Mercy in 2011 and have been here since then in pediatric endocrine. I also hold a certification as a diabetes care and education specialist.

Tobie O'Brien: Well, welcome. We are so glad to have you on. Tell us a little bit more about that certification and what is involved with getting it and really how you incorporate it into your daily work as a provider.

Taryn Vaeth: Yes. So the Certification for Diabetes Care and Education Specialists was formerly known as the CDE, so some people may have heard that term or certified diabetes educator. It is available to take the exam from multiple disciplines, so physicians, nurse practitioners, nurses, dieticians, pharmacists, psychologist, and social workers. So we have many that can take the exam. To be eligible for the exam, you have to have a thousand hours of diabetes care and education documented over the last five years, in addition, 15 continuing education credits that are diabetes specific. So, those are the requirements to be eligible. Once you apply and take the exam, you know, it's not just about pediatrics and so it's about type 1 diabetes, type 2 diabetes, pediatrics, adults and gestational. Once you pass the exam to uphold your certification, you have to continue to get 75 hours of continuing education every five years to keep your certification.

Tricia Williams: Wow. That's a lot of education on top of all the things that we already have to do for our advanced practice nursing.

Taryn Vaeth: It is. And I think it allows for daily work, it allows you to really be an expert in the field. Having the requirement to have 75 hours of continuing education every five years, it really keeps you up to date on contemporary knowledge and then bringing back those best practices back to clinic for your daily work.

Tricia Williams: Can you shed some light on what that means in your daily work, kind of how you incorporate it in taking care of your patients?

Taryn Vaeth: Yes. So when I'm seeing patients with diabetes, keeping them up to date on what is available in terms of newer technology. Also knowing what's available for them, medications and then just allowing, you know, knowledge sharing best practices with patients.

Tricia Williams: Like in regards to nutritional support, medication management, those types of things?

Taryn Vaeth: Yes, really all of it. From, you know, helping them with behaviors, tasks. Nutrition management. Helping them with technology, updates, data review. So it really encompasses the whole profession with the continuing education and allowing you to bring that expert knowledge back to the patient.

Tobie O'Brien: So Taryn, when I think about diabetes and pediatrics, I think about type 1 mainly, but I know now in pediatrics, there's more type 2 as well. So will you do a little like education for us a little bit about each of those, perhaps?

Taryn Vaeth: Yes. So in pediatrics, you're absolutely correct. The primary diagnosis is type 1 diabetes. Just to review, type 1 diabetes is the autoimmune destruction of the insulin-producing beta cells. And in kids, especially less than age 10, that is the primary diagnosis. Type 2, we are seeing an increase. It would be very, very uncommon to see that prior to age 10 or, I say, pubertal kids. And, you know, just to look at the numbers here at Children's Mercy, so we do have a little bit of a skewed view because we do work with kids. But over the course of the last few years, we've averaged an estimated 300 new diagnoses of type 1 diabetes per year and, type 2, we average about 50 new diagnoses per year.

Tricia Williams: So it sounds like your current patient load is typically type 1 diabetic patients, but you will have some type 2, correct?

Taryn Vaeth: Correct. In kids, different than adults, like I said, the primary diagnosis is type 1 and that is a majority of the population of kids. = I see with diabetes. We do have kids diagnosed yearly with type 2, but that is far less than type 1.

Tobie O'Brien: You mentioned also talking with these kids and their families about the latest technologies and such. So tell us more about what a visit would entail with, say, a family with a child that has been newly diagnosed. And do you pretty much see them for their initial diagnosis or how does that work when a child is newly diagnosed with type 1 diabetes?

Taryn Vaeth: Yes. So we've transitioned most of our new-onset diabetes education outpatient which has been great for families. So we call it LAND, Learning About New-onset Diabetes. So initially, we do a LAND 1 class where we are teaching them kind of just basics, how to use insulin, how to, you know, check a blood sugar. And then, they come back about two weeks later for LAND 2 class. So that is class. And then at that visit, they also see a provider. So LAND 2 is the part of the diabetes education that I am involved with by seeing them at that visit. And we're going through their nuance at labs, talking about their diagnosis. And then, they come back for a one-month followup where we're then talking about, you know, technologies they are interested in, you know, an insulin pump, glucose sensor. And so that's the process of new-onset diabetes education with the patient.

Tricia Williams: I feel like every time in the news or commercial there's new technology that's popping up in regards to diabetic management. Would you be able to kind of shed some light on the technology that we are currently using for our patients? I heard you mentioned a couple of them.

Taryn Vaeth: Yes. So very exciting. I think back to when I started in diabetes management in 2006, the first glucose sensor had just been approved by the FDA in 2004. And we really didn't know what to do with the information. You know, people could potentially get them depending on insurance, but there was this thought of do we trust the data? Do we not? Do we use it for daily decision-making? Well, kind of fast forward, over the last few years, there's been some exciting advancements specifically with insulin pumps. So, we now treat patients with either multi-daily injections. And so what that is is they get a background or a basal insulin that keeps their blood sugar nice and steady. And then when they eat, we give them insulin to cover carbohydrates. So we term that insulin-to-carbohydrate ratio. So for example, let's say their ratio is one unit for every 15 grams of carbohydrate, and just to make it easy for math purposes, let's say the child's eating 60 grams of carbohydrates. So we would take 60 divided by 15 and they would get four units before they eat.

Insulin pumps will also mimic the same basal bolus type of regimen. And what is new and exciting is that now glucose sensors are communicating with insulin pumps to have a closed loop system. And what that means is that the glucose sensor will give not only a blood sugar continuously, but a prediction of where the blood sugar will be going. So for example, if it's predicting that the blood sugar will be going low, the pump will actually decrease insulin or potentially suspend insulin to prevent that hypoglycemia. Additionally, if it's predicting the blood sugar to go higher, it will then start to increase insulin to prevent the blood sugar from going out of upper side of normal.

Tricia Williams: Technology is amazing. The ability to be able to care for our patients with the advancement of technology is-- I'm in awe. So that is crazy.

Taryn Vaeth: It is very exciting. And, you know, I always think of teens and how hard it is to be a teen and then insert diabetes and all of the burdens and tasks that teens, any kid really, has to do. So, I think overall improving outcomes while decreasing burden is very exciting.

Tobie O'Brien: Absolutely. So it sounds to me as if before they can move on to the closed loop system, that sort of kind of self-manages it without like a human input. I think that's what I'm hearing from you. Is that correct? That before they move on to that, they they have a really good basis of education before they get that closed loop system?

Taryn Vaeth: Correct. So most insurances will require, you know, a few weeks of blood sugars. We like to provide education LAND 1, LAND 2 in that one-month followup to get them comfortable with taking shots, checking blood sugars and then adding in that technology at a pace that is comfortable for them. So, most kids start with the glucose sensor piece and then add an insulin pump and then those potentially will communicate together. There are currently now just with a new FDA approval within the last couple of weeks, there are three pump options that communicate with a glucose sensor and autoregulate that insulin. We do still ask them to enter carbohydrates. So it's all set up to what their settings are, but we do still ask the child to insert the amount of carbohydrates they're eating to allow it to be proactive. The pump will adjust later for a high blood sugar if for some reason they forget to do that. It just doesn't do it as perfectly as if they were to do it before they eat.

Tobie O'Brien: That makes sense. Okay. Taryn, tell us what research is sort of in progress regarding pediatric diabetes.

Taryn Vaeth: Yes. Our diabetes team at Children's Mercy has a very robust research program. And so when I'm thinking of diabetes research, I break it down into a few different groups. And so goals of research number one is to identify. So if we can identify people at risk for developing diabetes, whether that's family history, genetics, illness, exposure, then we can potentially then prevent, so that's the second piece. If we can identify who is at risk, can we prevent the autoimmune destruction of those insulin-producing beta cells?

And then the third piece of research is if someone has type one diabetes, how can we improve lives and outcomes for those living with diabetes? You know, thinking back to the hemoglobin A1c, following the Diabetes Control and Complications Trial, there was this knowledge that the hemoglobin A1c in good control would prevent long-term complications of diabetes. Now with sensors, we're learning so much more. There's a lot of talk now about time and range. So that means time your blood sugars are in range and the goal with the new technology is to be in range at least 70% of the time and then decreasing variability. So we know that if your blood sugar goes from 40 to 400, you can still potentially have a good average blood sugar and a good hemoglobin A1c. However, that variability has been proven to also lead to complications of diabetes.

So those are the three subsets and Children's Mercy is involved in many studies too numerous to mention. And then also, we participate in studies outside or with other organizations as well.

Tricia Williams: It's definitely an exciting time to be a part of this particular medical field with the technology advancements and the research that is taking place. It's very exciting.

Taryn Vaeth: It's very exciting. I mean, even, like I said, since 2006, when I started in diabetes management, you know, the, the new development of glucose sensors, now these closed loop system pumps as they call them. And then looking forward into newer technology that will be available in the coming months to year is very exciting.

Tricia Williams: Yeah, and I think it's important for all advanced practice providers to kind of just be a little bit up to date on what's going on due to, you know, any subspecialty can come in contact with patients with this, you know, medical history. You know, just to be able to keep up to date on the technology that's happening to be able to provide that support for our patients when we do see them in our own particular clinic.

Tobie O'Brien: I agree, Tricia. Well, thank you, Taryn, so much for visiting with us today. For those of you that's been listening and, Taryn, you said that you've been listening as well. You know we end each episode by asking our guests the same question. So, for this season, we are asking what is a piece of advice that you've heard or read lately that has impacted you?

Taryn Vaeth: So my advice is actually from a patient. I had a patient very early in my diabetes management career. And, you know, when a kid comes in, we're downloading their data, giving them all of this objective information, it's kind of like a report card to them. And so I said to this particular patient, "Your A1c is awesome. Your numbers are perfect. You're doing great." And he just seemed very discouraged. And I said, "What's going on? You seem discouraged." And he said, "Well, I can't play football." And I said, "Well, what do you mean you can't play football?" He said, "Well, my coach said I can't play football because I have diabetes. And he doesn't know how to help me manage my diabetes during practice or games, or what if I have a low." And I said, "Wait a minute. You most certainly can play football" and helped him find a regimen that worked and fit into football. He had a very successful high school career, very successful college career. But I think the piece that impacted me is very early I learned that it is very important to find how diabetes can fit into the daily lives of patients and not have the patient's life revolve around diabetes care tasks.

Tricia Williams: That is a fantastic piece of advice and can go for so many things like don't let it happen. You know, don't focus your life around it. You make it fit into your life.

Taryn Vaeth: Exactly. And I think kind of back to what I was saying, it's really hard to be a kid and a teen, and then add in diabetes and add in all of the tasks and socializing with friends and activities. So really, it's very important and I learned very early on to be inspired by that. But it's so important to find a way to get that diabetes to fit in.

Tobie O'Brien: And I love hearing how you were paying attention and reading his cues. Like, you know, you knew to kind of say, "Well, what, what else is going on?" Because everything looked good, but you could tell something was off and I love how you kind of dug into that a little bit.

Taryn Vaeth: Yeah, you know, I was in the habit of just going through my task list of "Your numbers are great. Your A1c is great. Everything's great." Assuming that then, well, my patients should be happy,

