

Transcript Details

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www.reachmd.com
info@reachmd.com
(866) 423-7849

Managing Diabetes During the COVID-19 Pandemic

Dr. Wysham:

The widespread adoption of telehealth is one of the few benefits to come out of the COVID-19 pandemic, but it is far from the only technology we have for diabetes care. So what are some of the other emerging technologies that can not only help us manage diabetes, but perhaps also help us in the event of another pandemic that might be looming out there?

Welcome to *Diabetes Discourse* on ReachMD. I'm Dr. Carol Wysham, and joining me to discuss the management of diabetes in a pandemic and in the future is Dr. Alexis McKee. She's a practicing endocrinologist and an assistant professor of medicine at Washington School of Medicine in St. Louis, Missouri. Dr. McKee, welcome to the program.

Dr. McKee:

Thank you so much for having me. I'm delighted to be here.

Dr. Wysham:

And we're delighted to have you. So let's get right into it. Now, I understand that you're an inpatient diabetes hospitalist and that you have been working directly with COVID-19 patients with diabetes. Having had that firsthand experience in dealing with a pandemic, have you seen an acceleration in the use of diabetes technology?

Dr. McKee:

So that's a great question. We have. And while St. Louis wasn't necessarily an epicenter for one of the major outbreaks in the United States, certainly where I work at Barnes Jewish Hospital - Barnes Jewish Hospital is part of Washington University, which has over 1,200 patient beds, we certainly took care of a bulk of the city's patients who were admitted with COVID. And one of the challenges really facing our institution, along with other hospitals across the nation, was how do you keep your healthcare workers safe while caring for these patients? So the adoption of continuous glucose monitoring was pretty huge and actually started with Dr. Shivani Agarwal out of Albert Einstein. And these are devices that you can easily insert on the arm, the abdomen, various places, and they'll monitor the interstitial glucose levels every one to five minutes depending on the device. So this was approved in March by the FDA as an emergency measure to try to protect doctors, nurses, other healthcare staff from having to go so frequently into patients who are isolated with COVID.

Dr. Wysham:

Can you actually describe for the audience how that might look? How are they monitoring the blood sugar from afar?

Dr. McKee:

So it is actually really, really fascinating. And so what you can envision is you have this small device, you know, maybe a little bit bigger than the size of a quarter on a patient that Bluetooths to, sometimes it was a phone or an iPad outside of the patient door or at the nursing station, depending on how far that was away from the patient room. And it feeds the glucose levels from the patient over via Bluetooth to the cloud-based software from the device company. So if you can imagine, you know, when you put telemetry on one of your cardiac patients and you go and, especially the residents and interns are responsible for looking if there are any events overnight, we're now seeing glucose telemetry, and that's what's being developed as glucose being really the sixth vital sign and something that you are going to be able to visualize in real time.

Dr. Wysham:

So do you see this extending to use outside of the pandemic once we're on the other side of this? Do you see that this technology will continue to grow and become important for hospital management of diabetes?

Dr. McKee:

Absolutely. We have been studying inpatient CGM since around 2016, and the continuous glucose monitoring devices have only improved in their accuracy, and they have really, really worked hard to decrease the number of interfering substances, various medicines that patients might be on that could affect the value. So the data that's most compelling is the decrease in hypoglycemia that you see when patients are on these devices, as well as the data around, for instance, patients with DK in the ICU; it decreased how many times the nurses had to put on PPE and go in and out. And so that decreased exposure risk, which was pretty important. So I think once you give someone this technology and they've figured out a way to integrate it and it has such benefit, I don't see it going away post-pandemic. If anything, if you go on clinicaltrials.gov, there are so many studies going on right now with inpatient CGM that I think they're just going to prove where it is scientifically beneficial and how to navigate incorporating it if your institution is appropriate for this and which patients are appropriate for this and it will stay. I definitely think it will stay.

Dr. Wysham:

Great. Are there any other technologies currently available whose use is increasing related to the pandemic?

Dr. McKee:

So what I have seen is our patients with type 1 diabetes, CGM has become standard of care, personal CGM, and then most of them have moved to hybrid closed loop systems where you have an insulin pump that communicates with the continuous glucose monitor and that constantly feeds information from the sensor to the pump and adjust the insulin rates. So the nice thing about those devices are now a lot of them have gone Bluetooth to the cloud. So what you can do is have your patient link to your clinic by way of these cloud-based software platforms to the company. So, you know, while I couldn't see everybody face to face in my office, I could download their pump CGM data from the cloud and be able to help them. And it was this very reassuring feeling. And we have been moving that way anyway in diabetes. But I just think more patients who might be on multiple daily injections of insulin, for whatever reason, moving them to systems where you can more closely monitor them safely and without exposing them to risk, you know, they're immunosuppressed and you don't need to have them come to the office, but you can look at their information and do telemedicine visit. All of that is becoming possible. And I think it's really exciting.

Dr. Wysham:

Yeah, that is very exciting. Can you speak perhaps to some of the technologies that you might be researching for our use in the upcoming years?

Dr. McKee:

So Washington University is part of the bionic pancreas trial, which is pretty exciting. So anyone who's worked with insulin pumps, you know, you have to devise rates of insulin infusion and carbohydrate ratios and sensitivities. And once you get the hang of it, it's less complicated than it sounds. But the bionic pancreas is really innovative in that it's weight based and you can let the device know whether you're going to eat and maybe the size of the meal. And it kind of just runs itself based on your weight and that information. It also has, there are, I think, two arms to the trial; one where just insulin is infusing and there's also an option for insulin plus glucagon. But the idea with diabetes, both type 1, type 2, and other forms of diabetes is how can we decrease the burden for these patients? They're going to make in a day so many decisions, it's literally like a full-time job for these people. And how can we help our patients navigate that so that it's easier for them and they can do all the things that they want to do, whether it's go run a marathon or jump in the pool, you know, with their water-resistant sensor. It's just letting them be as normal as they can be, whatever the definition of normal is, but we really want our patients to be able to do what they want to do.

Dr. Wysham:

For those of you just tuning in, you're listening to *Diabetes Discourse* on ReachMD. I'm Dr. Carol Wysham, and I'm speaking with Dr. Alexis McKee about emerging technologies for the management of diabetes. So, Dr. McKee, we're obviously in the midst of the pandemic right now, but do you foresee another pandemic looming on the horizon, especially as it relates to our aging population and our increased numbers of patients with diabetes?

Dr. McKee:

So that's another really pertinent question. I was listening to one of my good friends, Dr. Angela Sanford, who's a geriatrician at St. Louis University, and she pulled up some recent data showing that in 2035, which is really not that far away, for the first time ever in U.S. history, we will have more older adults age 65 and above than we will have children under 18. So 23.5 percent of the U.S. population will be over 65, 19.8 percent under 18. And that trend will continue to go in divergent directions. And I think it's a huge time to kind of pause and realize we don't have enough geriatricians and we don't have enough endocrinologists. But how are we all going to work together to best take care of this aging population and –our aging-friendly healthcare systems? And how are we going to navigate that? And I certainly don't have all the answers, but I try my best to think, you know, with my futuristic hat on. And I think one of the things we've realized from this pandemic is we have to look at trends and patterns and try to make predictions and get ahead of things before they

overwhelm us and we're trying to react to things as opposed to having forethought.

Dr. Wysham:

Well, you know, this has been a great conversation today. perhaps you can share some key takeaways that you would like them to have today?

Dr. McKee:

Sure. So I think we have to adapt and as specialists, as consultants, help our primary care colleagues with how we can integrate things like continuous glucose monitoring into our lexicon and into our practice. And I really try to collaborate and have good relationships with primary care in Washington University. And I think it's inspiring for the residents and the trainees. And it's something new and it really is the future, and it will replace fingerstick glucoses moving forward. So that's something that we all have to sort of prepare for. COVID-19 is just one of, you know, many probably future novel viruses that we'll encounter. And I think we just need to put procedures and plans in place going forward so that we don't have to be so reactive to things. Many institutions were slow to adopt telemedicine. But just putting all of those pieces in place so when we get the next novel virus, we're more prepared. And then moving forward, we are definitely facing an aging population. And that aging population will also have a higher prevalence of diabetes. And we need to be able to navigate what that looks like and keep people as healthy and in their homes and active and doing all the things that they want to do as best we can. So I really think that exercise and eating correctly and having technology that decreases the burden of your disease will help keep our aging patients with diabetes safe and at home longer with fewer adverse events.

Dr. Wysham:

Well, that's a great way to round out our discussion on the future of diabetes care. And I want to thank my guest, Dr. Alexis McKee, for joining me in this discussion. Dr. McKee, it was great having you on the program.

Dr. McKee:

Oh, my gosh. It was a pleasure. Thank you so much.

Dr. Wysham:

I'm Dr. Carol Wysham. To access this and other episodes in our series, visit ReachMD.com/diabetesdiscourse, where you can Be Part of the Knowledge. Thanks for listening.