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CGM First in Diabetes Care

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Davida Kruger, M.S.N., APN-BC, BC-ADM,
Certified Nurse Practitioner, Henry Ford Health

Webinar Summary, April 28, 2022

"If you have diabetes, it should be a right, not a privilege to be able to use continuous glucose monitoring."

— **Davida Kruger, M.S.N., APN-BC, BC-ADM, Henry Ford Health**

The use of continuous glucose monitoring (CGM) has created new glucose metrics for people with diabetes and their healthcare providers. The traditional A1C measurement only provides information about the average levels of blood glucose over the past three months. It does not tell the whole story. Davida Kruger, a 40-year veteran in treating diabetes, shared how the use of professional CGM has improved the lives of her patients with type 2 diabetes and encouraged others to make greater use of this valuable tool. Kruger is the past chair of the American Diabetes Association's (ADA's) Research Foundation, and past president of Health Care and Education of the ADA. She has served on ADA's Research Policy Committee, as well as been editor of *Diabetes Spectrum* and editor in chief of *Clinical Diabetes*. She has been at Henry Ford Health for 40 years with roles in both clinical practice and research.

The Limits of Historical Methods and Therapeutic Inertia

When Kruger began practicing, A1C was used for research only. It was not used in clinical practice. Although there have been many advances since that time, Kruger says healthcare providers are still not doing all they can for people with diabetes.

Data from the Centers for Disease Control and Prevention National Health and Nutrition Examination Survey reveal that glycemic and blood pressure outcomes in diabetes care declined in 2015-2018 in comparison to 2007-2010. Forty percent of people with diabetes are not on any glucose lowering medication. And, only 7% are using SGLT-2 [sodium-glucose cotransporter-2] inhibitors and GLP-1s [glucagon-like peptide-1 receptor agonists], which, Kruger noted, are the current medications of choice. A1Cs are going up, not down. According to the ADA, less than two-thirds of US patients with type 2 diabetes reached their personal A1C goal, and only 50% achieve an A1C of less than 7%.

Kruger noted diabetes care that relies on quarterly visits with a focus on A1C neglects the reality of life with diabetes, which is that it is continuous (see Figure 1). A patient "can do blood sugars three or four times a day, at times when it's really good. But I don't know what's happening when they're sleeping. I don't know what's happening two after hours after a meal." Moreover, A1C alone does not help patients understand diabetes. It does not impact lifestyle behaviors related to glycemic management. An A1C does not provide any visibility on the response to interventions. As a result,

Figure 1: Existing Models of Care Are Not Sufficient Enough

- Diabetes care that relies on quarterly visits with A1C checks neglects the reality of life with diabetes that is continuous[1]
- Using A1C alone may not be very helpful to patients for understanding their diabetes[2]
  - Impact of health behaviors on glycemic management
  - No visibility on their response to interventions
  - May be reluctant to advance therapy if they don't understand their glycemic pattern
- Blood glucose monitoring (BGM) has notable limitations[3]
  - Measures blood glucose at a single point in time
  - Patient engagement and use is impacted by associated pain and social stigma
- The majority of diabetes care transpires between visits, outside of clinical encounters[1]
  - Not implementing the Chronic Care Model
  - Reactive and not proactive care

1. Corathers S et al. *Diabetes Spectrum*. 2020 Feb; 33(1):22-30. 2. AACE Consensus Guidelines. *Endocr Prac*. 2020;26(1):107-139.
3. Adolfsson P et al. *Eur Endocrinol*. 2018;14(1):24-29.

a patient may be reluctant to advance therapy because they don't really understand glycemic management. Also, the pain and social stigma of finger sticks are burdensome to patients. Not to mention the poor results that can arise from a patient not washing their hands or the use of expired strips.

The focus on A1C, said Kruger, also limits the healthcare provider's ability to find the best approach. "If an A1C is 7% or an A1C is 9%, how do I adjust medication just with that data? And if a patient's A1C is 6.8%, do I say, 'you're doing a magnificent job' or do I say, "ooh, are you having low blood sugars that got you there?' or 'your A1C is in a nice place' so that I don't have to worry?"

Further, most diabetes management takes place *between* visits—outside of clinical encounters—and is reactive rather than proactive. Patients are not going to measure when they're low or high, says Kruger. "They don't measure when they're low because they're too busy treating the low blood sugar. If they're high, they're not going to do it because then they have to show me that that's a high blood sugar. And they're just going to say, 'I know how I feel. I'm not going to do it.'"

Then, there is the problem of therapeutic, or clinical, inertia: the failure to initiate or intensify therapy when therapeutic goals are not reached. This is an issue for both the provider and the patient, said Kruger. "An individual comes in to see me. The A1C is 8.6%. I look at that A1C, and we start talking about what could we do better? And the first thing the patient will say to me is, 'You know, it's been a lot. The last two years *have* been horrible.' says Kruger, "but I wouldn't have heard that before the pandemic. 'And, I've gained weight and haven't been very active, and my mother-in-law's been living with me, and the dog ate my log sheets with my glucose values, so I can't bring them to you. And I haven't been able to take my medication on the regular basis, and, and, and, and, and let's wait another three months. Let's not make any changes today. Let me see what I can do about losing weight.' And I'm not talking that they have to lose a lot of weight. When I talk about weight reduction, we're talking 5% of body weight. 'Let me try to lose weight. Let me try to walk a little bit more and I'm going to take all my medications on a regular basis. And then let's see what my A1C is, and I'll be back in three months.'"

That, says Kruger, is a prime setup for clinical inertia. It's easy for the provider to say, "'Yeah, that sounds like a great idea." "But," she notes, "if that patient is not successful today, they're not going to come back in three months. If they haven't been able to do the things that we just talked about, I can guarantee you it will be six months. It will be nine months. It'll be a year before I see that patient." That equals a lot of lost time in terms of the ability to intervene. Research indicates that people with diabetes remain at suboptimal glucose management for 2.9 years. "That's a huge amount of time," said Kruger. "We can't let that happen because we know we have newer medications. We have the ability to lower the A1C. We have the technology, and we are not doing justice to those patients."

The Importance of Timely Treatment

Statistics show that when someone is diagnosed with type 2 diabetes, it's quite likely that person has already had diabetes for 5 to 7 years. Add that to the 2.9 years before optimal management, and the patient is experiencing no or suboptimal treatment for almost 10 years.

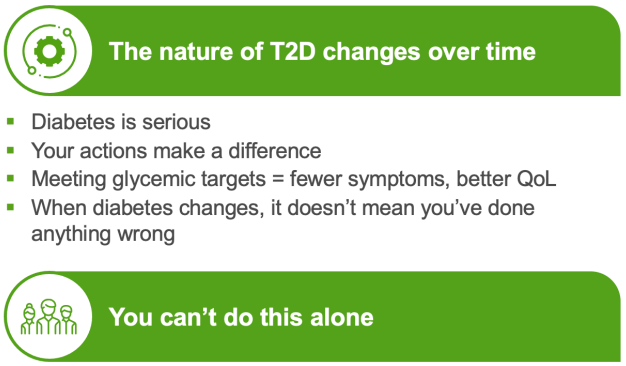
Managing glucose levels early in the diagnosis reduces the chances of complications. People with type 2 diabetes that achieve glucose targets soon after diagnosis are more likely to keep their glucose within a "tighter range." Meeting glucose targets means fewer symptoms, and fewer symptoms mean improved quality of life. Kruger notes that metabolic memory also plays a role. "If we do really, really, really well for our patients at the beginning of the care, the body remembers that. Even if there are some missteps along the way, the patients will benefit from what we do the day we meet them."

So, how do we optimize timely treatment? First, patients must be empowered, and they need to understand their diabetes. Kruger noted many people grow up with the notion that type 2 diabetes isn't the "serious kind" because it's throughout their family. "We need to make them understand that type 2 diabetes is a serious condition, and we need to be aggressive, and we need to provide everything we can to get that patient to treatment optimization the day we meet them."

That includes education (see Figure 2). Only 5% of newly diagnosed patients are referred for diabetes self-management education. "This is a crime because so many health insurers understand the importance of education and pay for diabetes education and medical nutrition therapy," said Kruger. She also noted that education should be repeated annually and that family members should be involved, noting, "Why would I send somebody to see a dietitian if I don't send the family member who cooks the meals?"

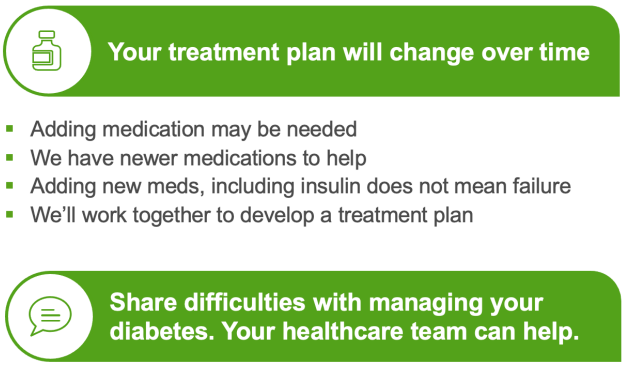
Education is also key for appropriate use of medication. Within one year of diabetes diagnosis, less than 50% of people with type 2 diabetes are still taking prescribed medications. *Why?* Because, says Kruger, healthcare providers haven't made clear the importance of staying on medications. She described a patient who stopped taking her blood pressure medication because the patient didn't understand that the medication would not make her feel different and because at her most recent primary care visit her blood pressure showed improvement. The patient believed the medication had done its job and it was not necessary to keep taking it. Kruger lamented, "I really thought I did a good job in explaining why these medications were important." Patients should know that if they are having side effects or can't get medication, they should notify their healthcare provider. Different health insurers may prefer certain medications. "Sometimes when I write a prescription, I don't know that that's not going to be covered by the patient's pharmacy or I don't know what their co-pay is, or I don't know that they have a huge deductible at the beginning of the year."

Figure 2: Critical Conversations to Overcome Therapeutic Inertia



The nature of T2D changes over time

- Diabetes is serious
- Your actions make a difference
- Meeting glycemic targets = fewer symptoms, better QoL
- When diabetes changes, it doesn't mean you've done anything wrong



Your treatment plan will change over time

- Adding medication may be needed
- We have newer medications to help
- Adding new meds, including insulin does not mean failure
- We'll work together to develop a treatment plan

You can't do this alone

- Work with your care team
- Use community resources
- DSMES works

Share difficulties with managing your diabetes. Your healthcare team can help.

- *"Tell me when things are getting in the way of diabetes management."*
- *"I'm on your side and will support you in whatever way you need to manage your diabetes."*

1. https://professional.diabetes.org/sites/professional.diabetes.org/files/media/overcoming_therapeutic_inerita_factsheet_final.pdf, accessed February 18, 2021. 2. Khunti K et al. *Diabetes Care.* 2013;36(11):3411–7. doi: 10.2337/dc13-0331. 3. Ziemer DC et al. *Diabetes Educ.* 2005;31(4):564–71. doi: 10.1177/0145721705279050. T2D = type 2 diabetes, DSMES = diabetes self-management education and support.

If patients don't let their healthcare provider know there's a problem, treatment is delayed.

Not only is it important to begin treatment in a timely manner, but changes to treatment must also be timely, and patients must understand them. Type 2 diabetes changes over time, and that means treatment plans much change over time as well. Kruger tells her patients, "When diabetes changes, it doesn't mean you have done anything wrong. It means that we need to re-evaluate your diabetes. We need to rethink the medications you are taking, add on what's best for your care."

Of course, patient buy-in is of primary importance at every stage of the process. Patients must be full participants in the development of their treatment plan. Kruger once had a patient who appeared to agree to Kruger's plan with nods and "mm hmms" throughout their conversation. "And I said, 'Well, let's talk in two weeks.' She walked out. I called her in two weeks, and she said, 'I didn't do anything you told me to do.' And that was telling, 'told me to do.' And I said, 'What happened?' And she said, 'You know, you didn't give me a chance to say I didn't like what you had to say. So, when I walked out the door, I threw everything away.' Now, that was an eye opener for me and for me to rethink how I approach my patients."

Kruger now takes a different approach. For example, if patients are overwhelmed by the number of pills they are taking, she may suggest removing vitamins that are not beneficial to make room for the medication. If they are afraid of adverse side effects, she takes the time to explain the risks and the importance of the medication for the patient, such as the use of medications not only for glucose lowering, but for cardiovascular benefit and kidney benefit, which are the greatest diabetes related risk. "I always say, 'Why are you here today? What's the most difficult thing for you in your diabetes care? Let's work as a team. Let's bring in your family members. And I'm here to support you.' She also advises them to work with

their healthcare team, use community resources, use diabetes self-management education, and seek information online at the American Diabetes Association website. Davida recommends to "go to all kinds of places that will give you support and energy to do what you need to do for your diabetes."

CGM as a Key Technology for Improving Patient Care

Continuous glucose monitoring can help overcome therapeutic inertia and support patient buy-in. Kruger's experience in the field has proven that. More than 15 years ago, she wanted to use CGM for professional use. Personal CGM was slowly evolving, more and more patients were using it, but Kruger wanted a professional, or Pro version. She noted, "10 or 15 years ago, it was harder to get personal, and we didn't have the coverage we now have for basal insulin and other therapies. And there were patients that didn't need to own it, but I needed to see what was going on with their glucose, whether I needed to take them from orals to insulin, whether I needed to take them from basal insulin to multiple daily doses of insulin, whether they would be a good candidate to own a personal CGM. I could come up with a thousand reasons, but we only have an hour today."

She developed a proposal and took it to her boss saying, "I really think we should be doing this in the clinic. I've already talked to the diabetes educators, and I've talked to other people who will help me put this together and make this happen." The reaction was less than positive. "No, no, no, no, no, no, no, no, no, no. You're going to lose money. You're going to spin your wheels. It may not be of value." After much perseverance, Kruger got approval for up to six devices!

At the time, the Dexcom G4 Pro version required multi-use transmitters, receivers, and sensors, all of which had to be purchased. The devices had to be charged, and they had to be sanitized after use. In addition, the clinic had to work with billing to get codes for use in Epic. Then, there was the careful process of patient selection. "We didn't do all comers at that time," said Kruger. "We wanted to make sure we got reimbursed, that this made sense, that patients would bring back our transmitters and receivers, etc., etc., etc. And I'm trying to show leadership that we won't lose money. I said, 'I'm doing this for clinical improvement.' I wasn't even thinking about the cost, the value in terms of making money, but I was thinking about improving the outcome."

It took several months to get all the players in place, get the product, and get everyone trained. "So, there was a little bit of work, but we were so excited about the possibility and we were happy to do it. We started small and as our confidence grew, we had more healthcare providers, sites, and support." Soon, leadership who had told Kruger she was going to lose money told her, "You are actually making some money for the clinic and we are having better outcomes." He said, "How many more devices would you want?"

Henry Ford now has three sites, all providers engaged, and has an average of 2,000 professional CGM interpretations annually. They expect to add a fourth site, with staff increasing to 10 endocrinologists and seven NPs, as well as several PAs. They've also started talking with high-risk OBs for gestational diabetes as well as primary care providers.

Using Dexcom G6 Pro

The Henry Ford team now uses the Dexcom G6 Pro, which, Kruger noted, is much simpler than the Dexcom G4 (see Figure 3).

First the healthcare provider or medical assistants (MAs) in the case of Henry Ford, starts the CGM session and trains the patient. The device has

Figure 3: Dexcom G6 Pro: Process at Henry Ford Health

1. Identify the patient
2. MA to place sensor
3. Return of sensor by mail or face to face
4. Getting the data into charts
5. Interpretation
6. Billing

the sensor and the transmitter, which are both disposable. So, washing them is no longer a concern. The healthcare provider inserts the sensor into the patient's abdomen, the transmitter is snapped into the holder, and the device auto starts. Then, the healthcare provider selects the appropriate mode, blinded or unblinded.

Determining the blinded or unblinded mode is a key step, as it affects other actions. In both cases, the device is used for up to 10 days, and Kruger noted both are very successful.

In the unblinded mode, patients receive real-time glucose data alerts and the alarm, which can be customized. Patients get insights during the 10-day period, showing the impact of their medications and providing trend arrows so they can see the direction their glucose is moving. The unblinded mode requires use of a compatible smart device, such as a phone or tablet. If this mode is selected, the patient is directed to download two apps. The first app is Dexcom G6 app, which shows the patient their glucose data. The second app is Clarity, which allows the glucose data to be sent seamlessly into the cloud, where it can be viewed by the healthcare provider.

In the blinded mode, patients do not see the real-time glucose data. They do not get alerts or an alarm. They are only able to view the CGM data retrospectively with their healthcare provider. With the blinded mode, the healthcare team uses a separate reader that transmits glucose information to the cloud for download by their healthcare provider. It is very useful for patients who don't have smartphones. The blinded mode can also help a healthcare provider see what is going on without the device affecting the patient's behavior.

"People say that all the time that it might not influence behavior," said Kruger, "but if a patient looks at this glucose data for two days and they say, 'When I eat pie, look at what happens to my glucose? I'm not going to eat that pie. Or when I walk, I'm not going to do it. I'm okay.' That's okay. If it's unblinded and they can make changes, that's okay. That means they've learned from the data, and the data has become more important to them."

At the end of the 10-day period, the healthcare provider interprets the glucose data and meets with the patient, in person or by phone, to develop a plan of action. Whether in the blinded or unblinded mode, the data is extremely helpful for both patients and

healthcare providers. Kruger said, "Knowledge is power! It provides guidance for adding, changing, or titrating medications. Persons wearing CGM are better able to see how health behaviors and medications affect glucose. They may help remove barriers of not intensifying medication by viewing trends, patterns, and time in range. We always talk about time in range between 70mg/dL and 180mg/dL. I want 70 mg/dL to 180 mg/dL. If your patients are 70% of the time between 70 mg/dL and 180 mg/dL, with less than 5% lows, they'll have an A1C of 7%. It puts patients in the driver's seat to try new activities, foods, and medications. It's for them to own their own diabetes. And it really is a right, not a privilege to own their own diabetes and to have the tools to do so."

Asked how often data obtained from CGM affects therapy decisions as compared to just A1C and a glucose log book, Kruger said "all the time." "If a patient gives me four finger sticks a day and they check when they wake up, before lunch, before dinner, and before bed, but they're missing the postprandial. How do I know that I need to add mealtime insulin? And if a patient's A1C is 8%, you know, some of the literature from the old days will tell us, well, if it's less than 8%, you have to think about postprandial, but it is greater than 8.4%, you have to think basal. That doesn't apply anymore. So, if the A1C is 8%, how do I know how to advance and how do I know if they're having hypoglycemia, if they have no symptoms? Can I do it? I did it for 40 years before CGM. I did it. Is it as effective? No. It really makes a difference if I can see CGM versus finger sticks and A1C," stated Kruger.

Kruger also noted she used to be a little hesitant about pushing people to less than 7%. "But once you use CGM and the patient has an alarm and alerts and knows the direction that their glucose is going, you should be able to feel more confident that you can push them to lower A1C goals." Harkening back to the idea of optimizing timely treatment, Kruger argued that providers should utilize a professional CGM at a patient's first visit. "I don't really know what's going on with the patient because they're new to me. So, if I could do it right then and there, it really helps guide what I want to do. If I wasn't doing CGM in the earlier days, we would say, 'Could you do 2 to 4 finger sticks a day?' So why wouldn't I start CGM right away?"

This approach is consistent with current recommendations. The ADA's 2022 Standards of Care indicate that real-time (RT) or intermittent scanning (IS) CGM should be offered to adults on MDI or CSII insulin, can also be used for adults with diabetes on basal insulin, and may be used periodically where continuous use is not desired or available. The American Association of Clinical Endocrinology (AACE) Clinical Practice Guidelines indicate that professional CGM should be used for patients who meet any one or more of the following:

- Newly diagnosed
- They are not using CGM
- They have problematic hypoglycemia but no access to personal CGM
- Persons with Type 2 diabetes treated with non-insulin therapies who would benefit from episodic use of CGM as an education tool
- Persons who would like to learn more about CGM before committing

The AACE guidelines also indicate that RT-CGM is preferred over IS-CGM for individuals over 65 years old on insulin and those with problematic hypoglycemia who require alerts. It is also suggested for persons with diabetes who are physically active, require uninterrupted monitoring, use advanced insulin delivery technologies, or cannot achieve desired treatment goals with intermittent scanning.

CGM Billing and Reimbursement

When the Chair of Medicine told Kruger, "We need to look at the RVUs on the nurse practitioners." Kruger pointed to a spreadsheet and asked, "You see that little column there?" "The one that says three-fourths of $1 million," he asked. "Yeah," she said, "that would be your NPs and your PAs who are billing for CGM for both the placement and interpretation."

"If you're doing the work, you should be billing and you should be reimbursed," said Kruger, and she shared a number of important billing codes (see Figure 4). They include the CPT code 95249 for startup training. For professional CGM placement, the CPT code is 95250. Data interpretation is CPT code 95251. Kruger noted that Medicare will reimburse for professional CGM. She has not found a commercial insurer that will not allow you to use professional CGM, even if the patient doesn't qualify for personal CGM.

CGM Is a Right

Considering all its benefits, Kruger argued, "If you have diabetes, it should be a right, not a privilege to be able to use continuous glucose monitoring." She recalled when blood glucose monitoring came on the market years ago, looking at patients wondering, "Who gets this? Who gets that?" Coverage for reimbursement was nothing like what is available today, and it wasn't as simple or as accurate. And, patients are grateful to have CGM. "Now with CGM, we've got the reimbursement. We can get it for basal insulin. We can use a professional CGM for every person that has diabetes. We're remiss if we don't use it. And how will this help clinical inertia? If you and the patient can see what's happening and you get 288 continuous glucose readings a day, I can assure you you're going to be able to see what needs to change, and the patient will make changes."

Figure 4: 2022 CGM Coding Reference

Codes / Description	Medicare Physician Office Fee Schedule	Medicare Outpatient Diabetes Center	Private Payer (2021 Averages)	Relative Value Unit (RVU) Non-Facility
CGM Services				
CPT 95249 (Personal CGM - Startup/Training)				
Ambulatory continuous glucose monitoring of interstitial tissue fluid via a subcutaneous sensor for a minimum of 72 hours; patient-provided equipment, sensor placement, hook-up, calibration of monitor, patient training, and printout of recording. *Bill only once during the time period that the patient owns the device.*	$59.87	$56.85 APC 5733	$128	1.73
CPT 95250 (Professional CGM)				
Ambulatory continuous glucose monitoring of interstitial tissue fluid via a subcutaneous sensor for a minimum of 72 hours; physician or other qualified health care professional (office) provided equipment, sensor placement, hook-up, calibration of monitor, patient training, removal of sensor, and printout of recording. *Do not bill more than 1x/month.*	$151.57	$121.35 APC 5012	$309	4.38
CPT 95251 (CGM Interpretation)				
Ambulatory continuous glucose monitoring of interstitial tissue fluid via a subcutaneous sensor for a minimum of 72 hours; analysis, interpretation and report. *Do not bill more than 1x/month.*	$35.30	Paid under physician fee schedule	$97	1.02

The reimbursement information provided is intended to assist you with billing for your services related to continuous glucose monitoring (CGM).
It is intended for informational purposes only and is not a guarantee of coverage and payment. CMS-1751-F Medicare Physician Fee Schedule Final Rule 2022.
CMS-1753-FC; Medicare Outpatient Prospective Payment System Final Rule 2022. Fee schedules are national averages and are not geographically adjusted.
PMIC Medical Fees in the United States 2021. Numbers provided are the median of the Usual and Customary (UCR) charges. Note that these are charges and not actual reimbursed amounts.

One Prince Street
Alexandria, VA 22314-3318

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