Continuous Glucose Monitoring in Practice

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CONTINUING MEDICAL EDUCATION

LEARNING OBJECTIVES

After reading this review article, participants should be able to:

- Prepare the practice for continuous glucose monitoring (CGM).
- Understand options available to the practice for professional (practice-owned) and personal (patient-owned) CGM.
- Locate and interpret CGM data, using the ambulatory glucose profile (AGP), to determine if the patient is achieving targets established by the International Consensus on Time in Range.
- Modify a patient's treatment plan based on CGM data to improve patient outcomes.

KEY TAKEAWAYS

- CGM is a valuable therapeutic tool for shared patient and clinician decision-making about diabetes management.
- CGM allows your patients to see in real time the impacts of behavior and medications on their glucose levels.
- You can take steps now to empower yourself, your practice, and your patients by implementing CGM.
- CGM may be a way to get your patients excited, perhaps for the first time, about their diabetes care.
- The AGP is a useful tool that can help ease patients' burden of managing their disease.

TARGET AUDIENCE

Family physicians and clinicians who wish to gain increased knowledge and greater competency regarding primary care management of diabetes.

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ADDITIONAL RESOURCES

Visit https://www.pcmg-us.org/toolkit/cgm for a resource toolkit and an archived webinar (for additional CME). All the links noted in the article are available from the toolkit webpage.

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INCORPORATING CGM IN YOUR PRIMARY CARE SETTING

Medical technology is rapidly evolving, so it can be challenging for primary care physicians to stay current with every advancement and innovation. This is especially true in the field of diabetes, where the evolution of continuous glucose monitoring (CGM) is having an enormous impact on diabetes management and treatment. Prior to the devel-

opment of CGM, managing diabetes involved making meaningful decisions based on limited self-monitoring data, which provided mere snapshots rather than a big-picture view of patient health. CGM provides healthcare practitioners access to much more comprehensive data on their patients' glycemic control and thus better enables clinicians to evaluate the effect of various lifestyle choices and therapeutic interventions.

The large amount of data provided by CGM, summarized in the ambulatory glucose profile (AGP), has cultivated a better understanding of the individualized nature of diabetes. Access to these data increases patient engagement by illuminating the glycemic effects of lifestyle choices, stress, illness, and medication adherence. The prescriber can benefit immensely from seeing the impacts of these personal individual choices, as well as how a particular medication intervention impacts a patient's glycemic control. As CGM becomes the standard of care for monitoring glycemic control, further clinician and patient education is necessary to effectively implement this technology in clinical practice.

For decades, the sporadic nature of monitoring has limited physicians' ability to manage diabetes care effectively.[1] Glycemic control traditionally has been viewed through the lens of glycated hemoglobin (A1c), which is a 3-month average of glucose levels that does not provide insight into glucose variability, time in range (TIR), or time below and above range.[2] The real-time data provided by CGM empower each person with diabetes to personally engage in monitoring and learn about their own disease. For the prescriber, CGM reveals glycemic control details and the effectiveness of treatment interventions and patient choices, allowing for more individualized treatment.[2] CGM moves diabetes management from a limited understanding of the past via A1c to real-time data in the present and may even predict future glucose levels. CGM is distinctive in that it provides data that are meaningful to both the physician and the patient, which can be used immediately to make decisions to ease patient burden.

Some essential steps must be completed to prepare your practice effectively and create a workflow for initiating CGM. First is becoming aware of CGM devices that are approved by the US Food and Drug Administration (FDA). CGM devices are available for both professional (practice-owned) (**TABLE 1**) and personal (patient-owned) (**TABLE 2**) use.[3] Knowledge of the features of each device will assist in prescribing the right device for each patient.[2,3]

TABLE 1. FDA-approved professional CGM devices[3]

	Abbott FreeStyle Libre PRO	Dexcom G6 Pro[a] (expected G7 in 2023)	Medtronic iPro 2
Blinded or unblinded[a]	Blinded	Either	Blinded
Wear time	14 d	10 d	6 d
Calibration	0	0	3-4 times daily
Care between use	Disposable sensor/transmitter	Disposable sensor/transmitter	Sensor must be cleaned and disinfected
Insertion	Single-step process with auto-inserter	Two-step process includes inserting sensor and attaching transmitter	Multi-step process includes inserting and taping both the sensor and transmitter
Site	Upper arm	Abdomen	Abdomen
Downloading/ data reports	LibreView (download in office)	Blinded: Clarity (download in office) Unblinded: reader/apps	Carelink (download in office)

[a] Blinded devices keep glucose data hidden from the patient.

WHO WILL BENEFIT FROM CGM?

Many clinicians assume that only those with type 1 diabetes (T1D) or those who receive multiple daily injections will benefit from CGM.[4] Other clinicians primarily consider the patient's insurance coverage. The American Diabetes Association (ADA) clarified the directive with its *Standards of Medical Care in Diabetes*: CGM is recommended for all patients with T1D, patients with type 2 diabetes (T2D) on multiple daily doses of insulin, and/or those at risk for hypoglycemia.[5] On October 6, 2022, the Centers for Medicaid & Medicare Services proposed a local coverage determination that modifies the current criteria for CGM to include those with diabetes who have a history of problematic hypoglycemia.[6] These individuals tend to have other chronic diseases, experience hypoglycemic events that result in emergency care, and/or are subject to interventional therapies that can increase the risk of hypoglycemia. However, this author believes that every person with diabetes could benefit in some way from the information provided by CGM. Any individual with diabetes who desires to be more engaged in the management of their disease and wants to see how lifestyle, stress, diet, exercise, and medication affect their glucose levels should be provided with an opportunity for CGM.

Once the question of utility has been answered, clinicians should consider accessibility and affordability. First, determine if your patient has insurance coverage for CGM or is able to afford it by other means (such as cash payment and/or intermittent use). For patients who must pay for their own CGM, a recent examination of the cost of the various devices found the least expensive option is provided by Abbott, followed by Medtronic, Dexcom, and Senseonics.[7] Discounts and giveaways may also be available. Professional CGM should be considered for patients with limited

TABLE 2. FDA-approved personal CGM devices

	Abbott FreeStyle Libre 14-day/2/3	Dexcom G6 G7 approved by FDA 12/8/22	Medtronic Guardian Sensor 3 (pump integrated) and Guardian Connect (stand-alone)	Senseonics Eversense
Approved labeling	Replaces fingersticks for treatment decisions; no fingerstick calibration required	Replaces fingersticks for treatment decisions; no fingerstick calibration required	Requires ≥2 fingerstick calibrations/d	Replaces fingersticks for treatment decisions; requires ≥2 fingerstick calibrations/d
Age	≥18 y/≥2 y/≥2 y	≥2 y	≥14y	≥18 y
Medicare coverage	Yes/Yes/No	Yes	Sensor 3: Yes; Connect: No	Yes
Wear length	14 d/2 & 3: Up to 15 days	10 d	7 d	90/180 d
Alarms	No/Yes/Yes	Yes	Yes	Yes
Data display/ Integration	Reader; Android/iPhone apps; 2 & 3 approved for integration with automatic insulin delivery systems	Reader; Android/iPhone apps; smartphone; Tandem T: slim X2 pump	630G, 670G or 770G pump; Guardian Connect	
Form	Disposable transmitter integrated with sensor patch	G6:Transmitter (3-month use) separate from sensor/G7: integrated	Transmitter (rechargeable) separate from sensor	Transmitter (rechargeable) separate from sensor
Accuracy[a]	11.4%/9.3%/7.9%	9%/8.2%	9.6%/9-11%	8.5-9.5%

[a] Accuracy figures provided by manufacturers. Accuracy is measured by mean absolute relative difference (MARD) relative to venous glucose. Lower numbers indicate greater accuracy.

financial resources, as all payors cover the application of this service and data interpretation without prior authorization. Keep checking for coverage: CGM coverage continues to expand in commercial, federal, and state insurance programs and is becoming easier to qualify for.

Medicare recently indicated that in 2023, patients on basal insulin would be considered for CGM coverage. Medicare has also removed the requirement for documentation of multiple finger sticks and added other approval indications for those with problematic hypoglycemia or at risk for hypoglycemia or chronic diseases that lead to complications when hypoglycemia occurs.[6] Finally, discuss with your patient whether they are willing to wear the sensor and engage with the data that are provided.

SETTING UP CLINICAL WORKFLOW

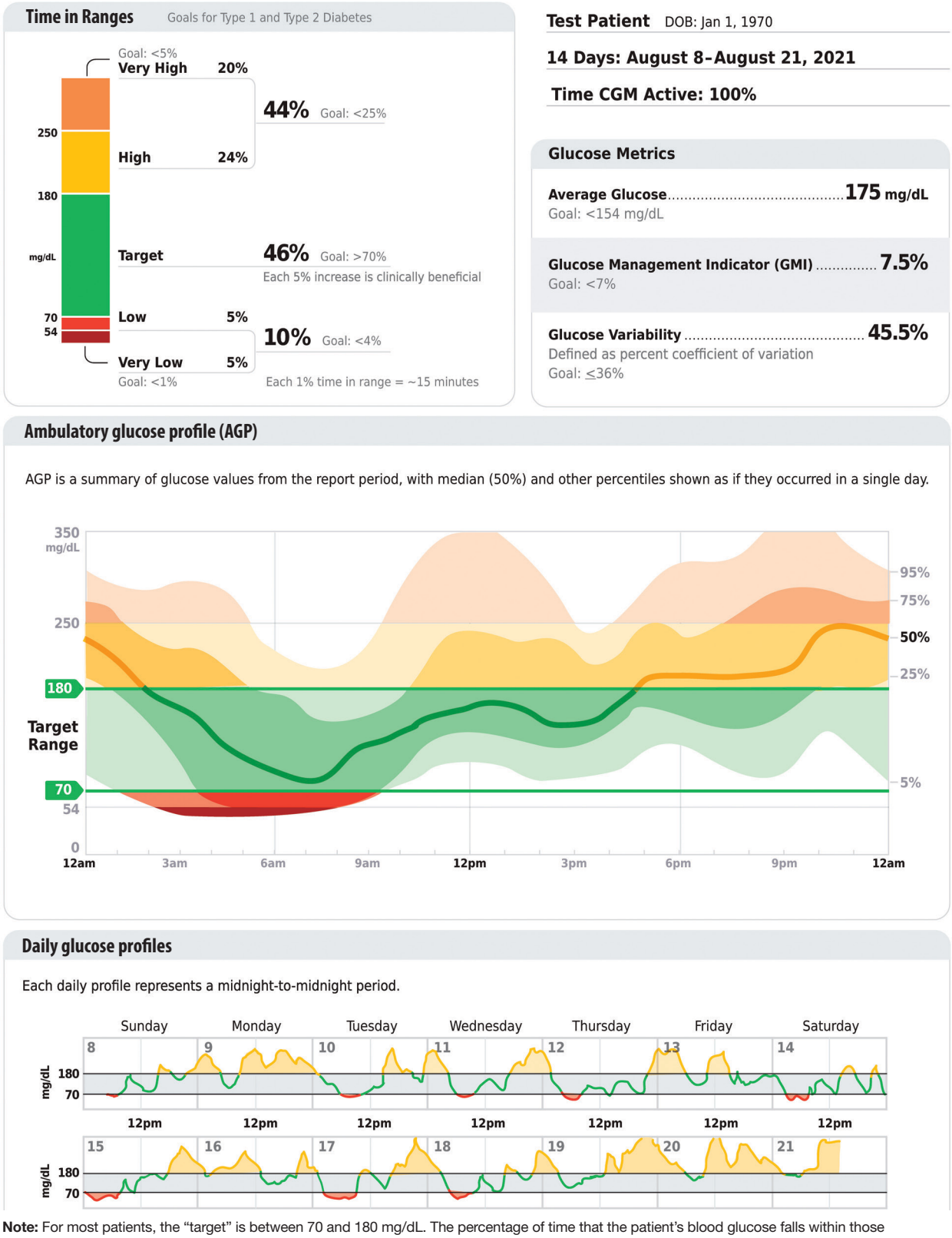
At the practice level, the physician must decide whether offering all CGM devices or only a selection works best with the clinic workflow and the needs of their patients.[3] Within the practice, the most essential and challenging aspect of CGM utilization is the creation of a clinical workflow that allows the physician to effectively identify and prescribe the appropriate device for each patient, provide training and support for the patient, download and interpret data, use that data to guide shared treatment decision-making, and bill for these services.

Multiple staff in the clinic will have a responsibility in the CGM workflow. The front office will need to make reminder calls prior to appointments, gain access to CGM data, or, for patients who only provide data at the time of their visit, encourage individuals to bring their diabetes-related technology to their visit. They must then collect those devices at check-in and start the process of data acquisition. In the back office, medically trained personnel who are familiar with the devices will download the data and prepare it for the physician.[3] Each clinic will accomplish this uniquely, depending on the responsibilities and capabilities of individual employees.

The medical assistant responsible for the AGP data download will need access to each relevant CGM manufacturer's data platform and should have a working knowledge of how to download the data. In many cases, when the patient is using a cell phone app for CGM readings, the AGP PDF can be downloaded ahead of the appointment, allowing for pre-appointment review. This is necessary for virtual/telemedicine visits.[3] Only individuals who use CGM readers will require an in-person appointment, as the data must be manually downloaded from the reader. Most devices offer online access to data without the need for manual downloading.

Each device's AGP report is slightly different, but all contain standardized, essential components, much like those

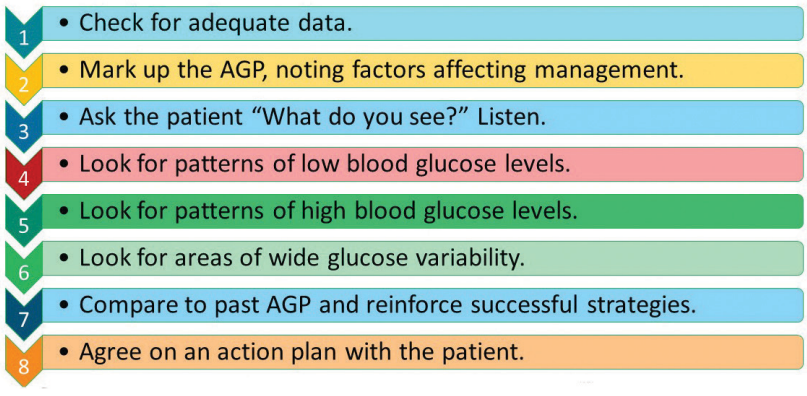
FIGURE 1. Sample ambulatory glucose profile[1]



Note: For most patients, the "target" is between 70 and 180 mg/dL. The percentage of time that the patient's blood glucose falls within those parameters is defined as TIR. (Figure 1 reprinted with the permission of the American Diabetes Association, Inc., Copyright 2022.)

shown in **FIGURE 1**; the report displays data as if occurring in a single 24-hour period.[8] Clinicians should review the report in the series of steps described in **FIGURE 2**.[9] It is vitally important that the physician become familiar with the AGP review and use the AGP with the goal of increasing the patient's TIR as established by the International Consensus on Time in Range.[10] The online resource toolkit referenced below, accessible through the QR code in **FIGURE 3**, offers a number of additional AGP examples for review as well as a detailed explanation of the components of the AGP.

FIGURE 2. Steps in AGP analysis[9]



The 14 days of data included in the AGP provide clinicians an opportunity to consider glycemic patterns. For example, in **FIGURE 1**, the hypoglycemia occurring between 1 am and 10 am is of immediate concern and should be the first item addressed. The physician may choose to proceed conservatively and wait for subsequent AGP data before suggesting additional treatment changes, keeping in mind the AGP also revealed 3 periods of very high blood sugars and high glucose variability. If those hyperglycemic episodes persist in the second AGP and the hypoglycemia issue has been resolved, the hyperglycemia should be the next priority. The AGP is currently the best tool available for offering insights that inform evidence-based treatment decisions in partnership with the patient to increase the patient's TIR. To optimize use of CGM and provide safe, effective care for patients with diabetes, it is critical that clinicians take time to learn more about the data points included in the AGP and how to interpret them.

BILLING

Billing is the last element needed for successful integration of CGM into clinical practice. Billing codes vary depending upon whether the CGM is personal or professional and which aspects of clinical workflow are being billed; for example, in some instances, device insertion and instruction require different codes than data interpretation. Some codes are device specific (such as Senseonics Eversense),

TABLE 3. Billing codes for CGM[11,12]

CPT® Code and Description
95249: Personal CGM – Startup/Training: Ambulatory continuous glucose monitoring of interstitial 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. (Do not report more than once while patient owns device.)
95250: Ambulatory continuous glucose monitoring of interstitial fluid via a subcutaneous sensor for a minimum of 72 hours; clinician-provided equipment, sensor placement, hook-up, calibration of monitor, patient training removal of sensor, and printout of recording. (Do not report more than once per month.)
95251: Ambulatory continuous glucose monitoring of interstitial fluid via a subcutaneous sensor for a minimum of 72 hours; interpretation and report. (Do not report more than once per month.)
Evaluation and management (E/M) codes 99212-99215: Established patient visit or G0463 (Medicare outpatient clinic visits)
Eversense-only codes 0446T-0448T: 0446T (creation of subcutaneous pocket with insertion of implantable sensor, including system activation and patient education), 0447T (removal of implantable sensor from subcutaneous pocket via incision), 0448T (removal of sensor with creation of new pocket for new sensor at a different location, including system activation)

while most are appropriate for all devices (**TABLE 3**).[11,12] The patient must wear the device for at least 72 hours to be eligible for reimbursement. CGM data should be documented in the encounter note along with any additional time spent in clinical decision-making and analysis.

Face-to-face encounters are not required for Current Procedural Terminology (CPT) coding and can take place in combination with evaluation and management (E/M) or stand alone coding. Ensure that the patient has regular follow-up visits at least every 6 months. Clinical notes should demonstrate that the patient is using the CGM system to monitor their diabetes. Only those who can prescribe CGM can bill for CGM application and interpretation of data.[4]

CGM IN PRACTICE

Integrating CGM into your practice is vital for your patients with diabetes. More information is available; a resource toolkit page can be found at https://www.pcmg-us.org/toolkit/cgm, which offers an array of links to help clinicians establish an effective CGM practice workflow (see **FIGURE 3**). The toolkit also includes a webinar (offering additional CME credit), links to every source cited in this article, additional case studies, and explanations of AGPs, as well as specific information about device insertion, accessing data, and details on each device currently approved by the FDA.

CGM is not only an extremely valuable therapeutic tool for evidence-based, shared decision-making, it is doable. CGM enables patients to see firsthand and in real time the impact of their behaviors on their glucose levels and allows clinicians to treat patients more accurately and effectively. ●

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