FEBRUARY 2025

CARDI·OH
Ohio Cardiovascular and Diabetes Health Collaborative

Supporting Patient Success with Continuous Glucose Monitors

Contributing authors on behalf of Team Best Practices:
Bree Meinzer, PharmD, BCACP, University of Toledo
Marilee Clemons, PharmD, BCACP, University of Toledo
Amber Healy, DO, Ohio University

Continuous glucose monitors (CGMs) provide real-time blood glucose readings to patients, reducing the need for multiple daily finger sticks.

CGM use in people with diabetes has many demonstrated benefits including lowered hemoglobin A1C (HbA1C), prevention of hypoglycemia, and increased knowledge about how various foods, medications, and activities impact glucose levels, resulting in improved patient satisfaction and quality of life. Additionally, CGM use enables providers to monitor glucose trends remotely for improved patient care.[1]

Choosing the right CGM for each patient is best done in consultation with a health care provider. Table 1 outlines the characteristics of a variety of CGMs and can support informed decision making between patients and providers.

Table 1. CGM Features and Characteristics[2-7]

Device	Dexcom		FreeStyle Libre			Medtronic	Senseonics
	G6	*G7*	*2*	*3*	*3 Plus*	*Guardian™ Connect*	*Eversense® E3*
Realtime or intermittently scanned	Realtime	Realtime	Intermittently scanned	Realtime	Realtime	Realtime	Realtime
Reader/receiver	Receiver	Receiver	Reader	Reader	Reader	Receiver	Requires smartphone for receiver
Transmitter	Yes	No	No	No	No	Yes	Yes
Wear duration *(days)*	Sensor: 10 Transmitter: 90	10	14	14	15	Sensor: 7 Transmitter: 360	180
Compatible mobile app*	Dexcom G6	Dexcom G7	FreeStyle Libre 2	FreeStyle Libre 3	FreeStyle Libre 3	Guardian Connect	Eversense
Provider data sharing	Yes, via Dexcom Clarity	Yes, via Dexcom Clarity or G7 app	Yes, via LibreView	Yes, via LibreView	Yes, via LibreView	Yes, via Carelink	Yes, via Eversense DMS Pro
Compatibility with insulin pump**	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Calibration	No	No	No	No	No	Yes	Yes
Age recommendation *(years)*	≥2	≥2+	≥4+	≥4+	≥2+	14-75	≥18+
Other notes		Indicated pregnancy		Indicated pregnancy			Implantable

*Smartphone compatibility varies by device.
**Products may not be compatible with all insulin pumps.

Choosing a CGM

Before initiating the use of a CGM, it is essential for patients and providers to discuss device expectations, technological requirements, and available resources. Each CGM has its own technology and support system, making it crucial for providers to assess compatibility and accessibility for the patient.

CGMs have two primary components: the sensor, which adheres to the skin and detects glucose levels, and the receiver, which displays readings. Some systems also use a reusable transmitter to send data from the sensor to the receiver. Many CGMs are compatible with smartphones, allowing the phone to serve as the receiver via a specific app for each CGM model. It is necessary to both verify smartphone compatibility and ensure the patient can download and use the required application.

Sharing CGM data with health care providers is helpful for optimized diabetes management. Each prescription CGM platform supports data transmission to provider offices, often through linked patient-provider accounts. Alternatively, patients may bring their CGM to clinic visits for direct data download and review.

Obtaining a CGM

A significant barrier to CGM use, irrespective of socioeconomic status, is restricted insurance coverage. Insurance policies may cover CGMs through medical or pharmacy benefits, and may require documentation from providers to justify medical necessity (e.g., clinical chart notes, a certificate of medical necessity or prior authorization) or require patients to be on insulin) before approving coverage.

Depending on insurance coverage, patients may need to obtain devices through either a pharmacy or a durable medical equipment (DME) supplier. These variations can introduce coverage complexities and delays in initiating or refilling CGM prescriptions.[8] Electronic platforms such as Parachute can streamline CGM prescribing for DME suppliers by eliminating paper prescriptions and the need to fax forms, and improving patient access by ensuring all required forms are completed.

Integrating CGMs into Clinical Care

CGMs provide platforms that enable data sharing with providers for trend analysis and treatment adjustments without in-person visits. The Dexcom Clarity platform uses an app that allows users to share glucose data to a secure cloud, which is connected to a clinic account. However, this platform is available only for the Dexcom G6 and G7.[2,3] FreeStyle Libre uses the Libre 2 and Libre 3 apps with the LibreView platform to allow users to share data with the health care team.[4,5]

Key considerations for CGM coverage:

- Ohio Medicaid allows CGM prescriptions to be sent directly to the pharmacy. CGMs are also covered by managed care organizations on the medical benefit for Ohio Medicaid beneficiaries without prior authorization. Dexcom and FreeStyle Libre products are covered under pharmacy benefits without a prior authorization.
- Medicare covers one insulin injection per day OR documented case of hypoglycemia. Medicare generally requires that prescriptions be processed through a DME supplier that can adjudicate the prescription through the medical benefit.
- Coverage varies widely among private insurers, with differing requirements and eligibility criteria.
- CGM orders can take time to process, so patients should plan accordingly and maintain a backup blood glucose monitor and testing supplies to avoid interruptions in glucose management.

Using a CGM Effectively

Proper application and maintenance of a CGM is essential for optimal performance. Patients should clean their skin with soap and water and dry thoroughly before applying the sensor to ensure strong adhesion. Adhesive patches, like Tegaderm or device-specific overlay patches, are available. Devices may cause skin irritation; minor irritation can be treated with topical steroids or an over-the-counter fluticasone nasal spray applied topically, but more severe reactions may be mitigated by switching devices.[9]

Each CGM system offers customizable alert settings. Dexcom and FreeStyle Libre users can set high and low glucose alerts via a smartphone or receiver. Data-sharing capabilities also allow for real-time information transfer to providers, families, and caregivers, which supports a comprehensive diabetes management approach.[2-5]

Addressing Disparities in CGM Access and Use

The benefits of CGM use for patients with diabetes are well-documented, yet disparities in CGM use persist. Adoption rates remain low among racially and ethnically diverse populations and individuals from low socioeconomic backgrounds, with similar rates observed among older adults.[10] To ensure equitable access to CGM for improved glycemic control, it is critical that patients with diabetes who require glucose monitoring and meet eligibility requirements are offered this technology. This goal can be supported by systematically providing education on CGM as an option for all patients with diabetes who require blood sugar monitoring as well as identifying candidates for CGM based on clinical practice guidelines. Providers can further promote CGM adoption by expanding support for patients, such as offering ongoing follow-up to assist with device use, increasing visit frequency to reduce discontinuation risk, and integrating team members knowledgeable in CGM technology and access pathways.[8]

CGMs for Patients with Disabilities

Disparities in access to and use of glucose monitors persist for patients with cognitive and physical disabilities, visual or hearing disabilities, and dexterity limitations. CGMs offer significant advantages over traditional fingerstick methods for these populations by simplifying glucose management and enhancing accessibility.

For patients with cognitive and physical disabilities, CGMs reduce the frequency of fingersticks, minimize pain, and make monitoring easier, particularly for those who rely on caregiver support. Additionally, CGMs lower the risk of hypoglycemia by providing real-time alerts for hyper- or hypoglycemic episodes, potentially preventing hospitalizations.[12] Dexcom and FreeStyle provide linked apps that enable caregivers to monitor glucose levels remotely, adding another layer of safety and accessibility.

For patients with visual disabilities, CGMs offer features such as larger display screens and in some models, voice-activated functions. For instance, Dexcom has demonstrated compatability with Apple's Siri, an often underutilized feature among health care providers.[12,13] Conversely, for patients with hearing impairments, tactile alerts via vibration can compensate for missed audio alarms. Some hearing aids can also connect directly to smartphones and CGMs, further improving alert functionality.

Dexterity issues, such as limited shoulder mobility, reduced strength, or impaired fine motor skills, can make fingerstick glucose monitoring challenging. CGMs provide a hands-free alternative, allowing patients to check glucose levels on a smartphone or receiver. While sensor placement may require assistance, CGMs remain a practical option for consistent glucose monitoring, especially when caregivers can support sensor changes.

Addtional Resources

- **Beyond the A1C: Targets for Blood Glucose and Methods for Measurement**
  cardi-oh.org/resources/beyond-the-a1c-targets-for-blood-glucose-and-methods-of-measurement
- **Interpretation of Continuous Glucose Monitoring in Primary Care: A Case-Based Approach**
  cardi-oh.org/resources/interpretation-of-continuous-glucose-monitoring-in-primary-care-a-case-based-approach
- **Podcast 47 - Overcoming Barriers to Continuous Glucose Monitoring Use With Your Patients**
  cardi-oh.org/resources/podcast-47--overcoming-barriers-to-continuous-glucose-monitoring-use-with-your-patients

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The Ohio Cardiovascular & Diabetes Health Collaborative is funded by the Ohio Department of Medicaid and administered by the Ohio Colleges of Medicine Government Resource Center. The views expressed in this document are solely those of the authors and do not represent the views of the state of Ohio or federal Medicaid programs.