Diabetes is a major worldwide epidemic with >415 million individuals living with the disease. This number is expected to grow to a staggering 642 million by 2040 (1). According to the American Diabetes Association, diabetes affects 29.1 million Americans, or 9.3% of the population. Diabetes management in the United States presents several challenges: 20% of individuals with diabetes remain undiagnosed, 1.4 million new cases are diagnosed annually, and one-third of adults with diabetes are not at the general recommended A1C goal of <7% (2).

In addition to the clinical burden of diabetes, the financial impact is also substantial. The cost of diagnosed diabetes was ~$245 billion in 2013, representing a 41% increase over the previous 5 years. These costs include inpatient care, prescriptions and supplies for the management of the disease and its complications, doctor office visits, and nursing care and facility stays (3).

According to the Centers for Disease Control and Prevention, primary care visits accounted for 52.3% of all medical office visits in the United States in 2013. Diabetes was the fifth ranked primary diagnosis for such visits, accounting for ~3% of primary diagnoses (4). At the heart of diabetes management is the challenge of adequately controlling glucose over the long term to prevent complications such as retinopathy, nephropathy, and neuropathy while avoiding potentially life-threatening hypoglycemia in the short term.

Continuous glucose monitoring (CGM) technology is one advancement that can improve overall glycemic control while minimizing hypoglycemia (5). CGM has been available since the late 1990s. However, its use is not widespread. Clinical inertia is often cited as major barriers to the use of CGM. The introduction of new technology into a clinic requires initiative, awareness of its benefit, and efforts to integrate its use into the routine clinic workflow. This article reviews the use of CGM in the primary care setting and addresses some of the barriers to clinical implementation.

Crucial Role of Primary Care in Diabetes Management

Primary care has become a center point for diabetes management. A 2014 study by the Endocrine Society demonstrated an increasing demand for, compared to the available supply of, endocrinologists and predicted that there would be a shortage of 2,700 endocrinologists in the United States by 2025 (6). Much of that growing demand is driven by the aging population because the prevalence of type 2 diabetes increases with age. A 2012 study using the National Provider Identifier Registry showed that there would be a shortage of 2,700 endocrinologists in the United States by 2025 (6). Much of that growing demand is driven by the aging population because the prevalence of type 2 diabetes increases with age. A 2012 study using the National Provider Identifier Registry showed that the ratio of endocrinologists to adults ≥65 years of age was ~6,194 to 1, and the average wait time to visit such a specialist was 3–4 months (7). Currently, primary care providers
(PCPs) deliver clinical care to ~90% of individuals with type 2 diabetes, and this proportion is likely to increase over time (8).

With a burgeoning diabetes population, the judicious use of time by PCPs is crucial in successfully managing patients. The challenge is that diabetes management has become increasingly complex as a result of multiple medication categories (including combination medicines), the need to avoid hyper- and hypoglycemia, multiple choices of medical devices for managing diabetes, the need to facilitate patients’ lifestyle changes, and other issues. In a study of trends in the complexity of diabetes care in the primary care setting between 1991 and 2000, the number of individuals with diabetes taking at least five medications increased from 18.2 to almost 30%. Despite this ever-increasing complexity, the proportion of medical visits lasting >20 minutes increased only 3.1% during this same time period (9).

**Benefit of CGM**

Self-monitoring of blood glucose (SMBG) (the “fingerstick” method using a glucose meter) and A1C testing are frequently used to monitor patients with diabetes. Such methods, although ubiquitous, do not completely address glycemic control. SMBG is relatively inexpensive and easily learned by patients. However, it provides glucose concentrations at a single point in time, with no information about the trend of the glucose level (i.e., whether glucose is increasing or decreasing). A1C provides information about a patient’s average blood glucose control during the previous 3 months, but it fails to provide data regarding daily glucose excursions or time spent in the target glucose range.

In contrast, CGM provides trending information and data on the percentage of time spent in and out of the target range (whether in hypoglycemia or hyperglycemia), as well as meal and activity markers. Its use has been demonstrated to be effective in detecting and reducing hypoglycemia and improving glycemic control in patients with type 1 or type 2 diabetes (10–15).

Two types of CGM systems are available: professional CGM (P-CGM, also known as “masked” or “retrospective” CGM) and real-time CGM (RT-CGM). Both types of CGM systems measure interstitial glucose levels through a subcutaneous sensor that reports a value every 5 minutes, or 288 times per day. This article focuses on P-CGM because RT-CGM has rarely been used in patients with type 2 diabetes.

P-CGM typically involves monitoring for a 6- to 14-day period in which the patient wears the sensor while conducting normal daily activities. The patient is “masked” to the sensor glucose values while wearing the P-CGM device and is not privy to them until the stored data are downloaded and analyzed at a physician’s office. The goal of P-CGM is to assess glycemic patterns and understand how they are influenced by diet, glucose-lowering medications, and physical activity. In contrast, RT-CGM devices notify the patient of glycemic highs and lows, which usually results in the patient taking some action. Thus, the advantage of P-CGM over RT-CGM is that the patient’s behavior is not influenced by the continuous feedback of glucose results. Therefore, the health care provider (HCP) can view results that have not been influenced by a patient’s decisions in real-time, which can improve understanding of the various factors influencing the patient’s glycemic control. This helps the HCP make appropriate therapeutic treatment recommendations, including changes in diet, activity, and medication. In addition, a strong educational effect occurs when the HCP shares the report with the patient that can enhance patient engagement and motivation. The combination of these factors leads to improved glucose control (16–18).

### Commercially Available CGM Devices

CGM technology generally uses a glucose oxidase enzyme that converts glucose to hydrogen peroxide, which reacts with platinum inside the sensor located in the interstitial fluid. This generates a signal that is converted via an algorithm to a glucose reading. The wearable sensor is typically slightly larger than a quarter. Patients also log meals, medications, and activities, either on paper or via a mobile app. In the United States, there are currently three major manufacturers of Food and Drug Administration (FDA)-approved P-CGM devices: Medtronic, Dexcom, and Abbott. The systems are briefly described in Table 1.

#### Medtronic

The first P-CGM device was the MiniMed physician-use glucose monitoring system (CGMS Gold), approved by the FDA in 1999. Medtronic launched the HCP-owned iPro2 system in 2009 and received FDA approval for the 6-day Enlite sensor wear in 2016. Data from the iPro2 system are uploaded into an Internet-based software system (CareLink) that calculates sensor glucose values using transmitted signals and requires at least four fingerstick calibrations per day. The sensor is disposable, whereas the recorder can be reused.

#### Dexcom

Dexcom G4 PLATINUM is a practice-owned P-CGM device. It displays glucose readings every 5 minutes for up to 7 days. It is a two-in-one P-CGM designed so that it can either provide real-time feedback and insights that can be used to make therapeutic treatment adjustments by the patient or can be masked by installing additional software so that it operates in a way similar to the Medtronic iPro2 system. The sensor is disposable, whereas the transmitter and receiver can be reused. This system requires at least two calibrations per day.
Abbott
Abbott recently received FDA approval for the Freestyle Libre Pro system. This system does not require fingerstick calibration, so patients do not need to be trained in performing SMBG for calibration. An HCP applies a small, round sensor on the back of the patient’s upper arm. The sensor is held in place with a self-adhesive pad and remains on the back of the arm for up to 14 days.

P-CGM Reports
P-CGM reports facilitate an evidence-based dialog between the HCP and the patient. In recent years, there has been significant effort by manufacturers to make reports simple and easy to read, given PCPs’ busy workdays. P-CGM reports typically show 1–14 days of glucose data. The reports are created in a PDF format, so they can be easily stored electronically or printed. Typical features of P-CGM reports include:

- **Daily overlay.** Provides an overlay of the sensor traces for each day on a single 24-hour graph that facilitates identification of trends or excursions that occur around the same time each day, including a summary of high and low glucose excursions and pie charts showing what percentage of each day the patient spent above, below, and within the target range.
- **Overlay by meal.** Provides an overlay of the sensor traces from each day of the study, broken down into meals and overnight periods, according to the meal recordings from the patient’s logbook or smartphone app. The sensor traces for each day are overlaid so HCPs can look for trends at certain times related to meals or overnight periods. This report lines up glucose sensor traces before and after each meal and is especially useful if patients eat meals at varying times each day.
- **Daily summary.** Provides a summary of each full or partial 24-hour period of the study, including both the sensor trace and events such as meals, medications, and exercise.
- **Pattern snapshot report (Medtronic).** Provides a summary of daily glucose information and identifies up to three observed patterns based on rule-based algorithms. This report has three sections consisting of general statistics, observed patterns, and potential causes of these patterns.
- **Ambulatory glucose profile (AGP; Abbott).** A user-friendly chart providing HCPs a complete glycemic view of the patient’s glucose trends for up to 14 days.

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**TABLE 1. Comparison of P-CGM Systems by Manufacturer (7,8)**

<table>
<thead>
<tr>
<th></th>
<th>Medtronic iPro2</th>
<th>Dexcom G4 Platinum</th>
<th>Abbott FreeStyle Libre Pro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of use (days)</td>
<td>6</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Insertion site</td>
<td>Abdomen</td>
<td>Abdomen</td>
<td>Upper arm</td>
</tr>
<tr>
<td>Number of components</td>
<td>2 (sensor and recorder)</td>
<td>3 (transmitter, sensor, and receiver)</td>
<td>2 (sensor and reader)</td>
</tr>
<tr>
<td>Minimum number of calibrations per day</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Reading frequency (min)</td>
<td>5</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Operational temperature (°F)</td>
<td>36–86</td>
<td>36–77</td>
<td>50–86</td>
</tr>
</tbody>
</table>

**TABLE 2. Reasons for P-CGM Use in Primary Care**

- Mitigation of hypoglycemia unawareness
- Mitigation of nocturnal hypoglycemia unawareness
- Provision of insight into nocturnal blood glucose patterns
- Initiation of basal insulin (when necessary)
- Understanding of when to initiate mealtime (prandial) insulin
- Aid in adjusting the insulin-to-carbohydrate ratio for people with insulin-dependent diabetes
- Understanding of how food affects blood glucose (i.e., how meals with various macronutrient ratios affect blood glucose profiles over the course of 24 hours)
- Understand of how high-fat foods increase blood glucose over the course of 4–24 hours after ingestion
- Increased patient accountability, which in turn improves patient self-care behaviors
- Evaluation of the magnitude of the dawn phenomenon (i.e., early morning increase in blood glucose) and how it changes over time with lifestyle intervention
- Reduction of medication and insulin use as patient’s insulin resistance or sensitivity changes
The AGP helps identify when a patient is out of glucose range and provides hypoglycemia and hyperglycemia trends and patterns.

P-CGM reports may also include some key parameters, such as:
- **Average sensor glucose (SG).** Provides an average of all SG values during the current study.
- **Area under the curve (AUC).** Indicates the time spent in high and low excursions as above or below preset values.
- **Percentage high or low and time-in-range.** Excursion data indicating the frequency of high or low glucose levels.
- **Standard deviation (SD).** Measures variability in SG readings around the mean. The larger the standard deviation, the greater the variability.
- **Estimated A1C (eA1C).** A value based on the A1C-Derived Average Glucose study (19) that defines a relationship between A1C and estimated average glucose.

**Recommendations for P-CGM**

A P-CGM evaluation can benefit a broad range of patients with type 1 or type 2 diabetes (Table 2). An American Association of Clinical Endocrinologists task force published a CGM consensus statement (20) that stated CGM improves glycemic control, reduces the prevalence of hypoglycemia, and may reduce costs related to diabetes management. The American Diabetes Association has also provided the following recommendations and suggestions for use of CGM in diabetes (21):
- When used properly, CGM in conjunction with an intensive insulin regimen is a useful tool to lower A1C in type 1 diabetes
- CGM may be a supplemental tool to SMBG for people with hypoglycemia unawareness or frequent hypoglycemic episodes

**P-CGM Case Studies**

Glucose trend data are useful for informing discussions with patients and coaching from PCPs. These dialogs can be focused on postprandial glycemic control (e.g., meal planning or optimal timing of medications), exercise adjustments, stress and illness management, detection of asymptomatic hypoglycemia, management of hyperglycemia in general, and other topics, as listed in Table 2.

P-CGM has been used effectively in primary care settings such as the Diabetes Assessment and Management Center (DiAMC) in Shreveport, LA. The DiAMC program combined education, nutrition therapy, and medical technology via P-CGM. Through this approach, DiAMC patients routinely experience an absolute reduction in A1C of 2–4% within 90 days of following the program’s treatment algorithm. Patients often reduce and sometimes are able to discontinue medications for diabetes, blood pressure, and cholesterol. The following case studies from DiAMC highlight the potential benefits of P-CGM with regard to glycemic control.

**Case 1. Greater Than 10% Absolute Reduction in A1C**

Patient 1 is a 64-year-old African-American man who is a retired auto
worker. He weighs 182 lb and has a BMI of 25.2 kg/m². He was referred to DiAMC in June 2015 with typical symptoms of hyperglycemia, including polyuria, polydipsia, and blurred vision. No other cardiovascular, respiratory, abdominal, neurologic, or musculoskeletal symptoms were present. His blood pressure was 133/70 mmHg. On exam, there was no evidence of retinopathy or neuropathy. Respiratory, abdominal, and cardiovascular systems showed no abnormalities. Laboratory test results showed normal renal function and no microalbuminuria. His A1C was 16.1%. He was diagnosed with type 2 diabetes and started on treatment with basal-bolus insulin and metformin.

Per the DiAMC treatment algorithm, he began a program of nine visits in 90 days to reverse his insulin resistance. In week 2, a 72-hour P-CGM study identified post-breakfast hyperglycemia, allowing for more efficient adjustment of his insulin regimen. As shown in Figure 1A, the highest values reached 392 mg/dL during the day, and his glucose was >140 mg/dL 53% of the time. The breakfast overlay is shown in Figure 1B. His rapid response to a diabetes self-management education program and the treatment protocol was evidenced by his A1C of 5.5% and the elimination of all medications by the completion of the 90-day program.

Approximately 18 months after his initial evaluation, his A1C was 5.2%. For comparison, Figure 1C, his most recent P-CGM report (February 2017) shows that he was in the glucose target range (70–120 mg/dL) 88% of the time, and his average SG was 108 mg/dL.

Case 2. Lifestyle Adjustments After CGM
Patient 2 is a 46-year-old, unemployed African-American woman who was diagnosed with type 2 diabetes, hypertension, and morbid obesity in 2003. In October 2014, her weight was 277.7 lb, and her BMI was 42.22 kg/m². Her A1C was 13.7%. She also had a history of hypertension, chronic obstructive pulmonary disease, and cardiovascular disease. Her diabetes-related medications were insulin glargine 50 units twice daily and insulin lispro 15 units twice daily. She had no hypoglycemia symptoms and was adherent to her medication regimen. Her symptoms included polyphagia and polydipsia. On exam, she had no cardiovascular, respiratory, abdominal, or neurologic abnormalities. She had no microalbuminuria. Her initial P-CGM overlay report (Figure 2A), shows that her glucose was >140 mg/dL 60% of the time and that she was in her target glucose range 40% of the time.

Upon induction into the DiAMC program, the patient kept a food, activity, and glucose log for 1 week. With the help of her physician, she was able to visualize the effect of her meals and activity on her glucose profile and make dietary and fitness lifestyle modifications. Within 6 months, she demonstrated remarkable improvement, although she was hypoglycemic (asymptomatic) on 2 days at around midnight, revealing a need to adjust her insulin regimen. Her A1C value in March 2015 was 7.0%. Her mealtime glycemic variability decreased significantly, and she was in the target range 58% of the time. Her average SG was 124 mg/dL, and her AUC for glycemic excursions >140 mg/dL decreased from 31.6 to 7.4 mg/dL. Her P-CGM overlay is shown in Figure 2B. The patient did not experience significant weight loss during the program. Her most recent A1C, in March 2017, was 7.0%.

Case 3. Twenty Years With Poorly Controlled Type 2 Diabetes, Now in Control
Patient 3 is a 54-year-old African-American woman who is employed...
as a recreational specialist by her municipality. She has been living with type 2 diabetes for 20 years, and hypertension is her only comorbidity. In October 2014, when she presented to her PCP with symptoms of polydipsia and polyuria, her weight was 141.2 lb, her BMI was 26.7 kg/m², and her A1C was 13.7%. She was prescribed combination sitagliptin and metformin 50/1,000 mg twice daily and amlodipine 10 mg once daily. Her P-CGM (Figure 3A) revealed an SD of 65 mg/dL, and 96% of her glucose readings were above target. Her average SG during 6 days of wearing the P-CGM device was 251 mg/dL.

Over the course of 1 month, the patient underwent lifestyle modification to reduce her fat intake and increase her physical activity to at least 150 min/week with resistance training. Her PCP initiated insulin glargine 12 units daily and used P-CGM technology combined with a treatment algorithm to increase her basal insulin to 18 units daily and initiate insulin aspart before meals. The follow-up CGM report ~30 days later (Figure 3B) demonstrated much better glycemic control. Her mean glucose decreased from 251 to 134 mg/dL, her time in range increased from 2 to 58%, and her SD was 30 mg/dL. Her A1C in November 2014 was 7%.

Case 4. Remission of Diabetes With CGM

Patient 4 is a 75-year-old African-American man who is a retired bartender and food service worker. He had a history of hypertension and hyperlipidemia, for which he was taking lisinopril 20 mg daily, hydrochlorothiazide 25 mg daily, and lovastatin 20 mg daily. He was diagnosed with new-onset type 2 diabetes in October 2016. At that time, he weighed 210 lb and had a BMI of 31 kg/m². His initial P-CGM report (October 2016; Figure 4A), revealed six high glycemic excursions, no episodes of hypoglycemia, and an average SG of 154 mg/dL over a 4-day period of wearing the P-CGM device. His average glucose was greater than the 140-mg/dL limit for euglycemia 66% of the time. Furthermore, the timing of his periods of hyperglycemia suggested that the excursions were related to his meals. He was admitted to the DiAMC program in October 2016 and prescribed metformin 1,000 mg twice daily. His A1C was 10.5% at intake.

Through coaching in the program supplemented by P-CGM feedback and lifestyle changes, he was able to completely reverse his dysglycemia. By program completion in January 2017, his A1C was 6.2%, and he had lost 16.9 lb. His P-CGM report in February 2017 (Figure 4B) showed an average SG of 86 mg/dL. By March 2017, his A1C was 5.9%. He is on no prescribed medication and has maintained a healthy weight and glucose level.

Integration of P-CGM Into Primary Care

The Diabetes Control and Complications Trial (22) and the T1D Exchange data of >25,000 patients (23) demonstrate that patients who check their blood glucose frequently have improved health outcomes. However, for some patients, SMBG alone may not provide enough data to adequately inform efforts to control the disease. PCPs, who already treat the vast majority of patients with diabetes and will likely provide care for even more as the epidemic grows, have an opportunity to introduce P-CGM into their practice as a means of better controlling the disease.

Integration of P-CGM into clinical practice is a straightforward process (Table 3). In the DiAMC program, the PCP informs the patient about the program and the information it can provide. Typical discussion points include the need for the patient’s commitment to keep accurate food, glucose, medication, and activity records on a paper log or via an app during the P-CMG wear period. Other topics include how the sensor is inserted, possible site complications that may arise,
Serious adverse events are rare with P-CGM; in a study of 22 volunteers who wore a device for 184 sensor days total, there were no serious adverse events and no problems that resulted in sensor withdrawal (24).

Patients who agree to enter the program, they receive a complete instruction sheet, provide informed consent, and have a sensor is inserted. Patients are typically sent home with a glucose meter to calibrate the sensor and supplies (i.e., extra tape and wipes) for maintaining sensor wear. Patients typically wear the sensor for up to 6–7 days, but meaningful data may be obtained in the 72-hour window required to bill under Current Procedural Terminology (CPT) code 95250 (see billing discussion below).

At the end of the evaluation period, patients return to the clinic, where their sensor data are uploaded and all glucose readings, food, medication, and activity logs are entered into the P-CGM software (or synchronized, if they used a logging app). The HCP notes any trends and habits that may be affecting glucose control and medication regimens.

In some cases, when a diabetes educator is the primary data reviewer, he or she will discuss observations in the reports and areas for improvement, including medication management or lifestyle modifications, with the PCP. Once an appropriate plan is created between the educator and provider, the reports are reviewed in detail with the patient, explaining salient points and discussing suggested modifications. Receiving patient feedback on the plan is important to ensure adherence.

In some health care systems, P-CGM is a service that is facilitated mainly by the diabetes educator, who does initial patient education, handles data entry, and meets with patients to review results. In other cases, P-CGM may be handled by a registered nurse, medical assistant, or physician’s assistant. Limiting the number of people who are involved keeps the process consistent and limits the chance of errors that could negate the entire P-CGM study.

Cost and Reimbursement for P-CGM

P-CGM devices are traditionally owned or leased by HCPs and then provided to patients for successive days of data collection. The costs of

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**TABLE 3. Two-Visit P-CGM Workflow for PCP Clinic**

<table>
<thead>
<tr>
<th>Visit 1: P-CGM Initiation</th>
<th>Visit 2: P-CGM Report Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Discuss CGM basics with the patient.</td>
<td>1. Remove the sensor from the P-CGM recorder and download data.</td>
</tr>
<tr>
<td>2. Set up and deploy P-CGM device on patient.</td>
<td>2. Set preferences for individual target values and generate reports.</td>
</tr>
<tr>
<td>3. Describe requirements for calibrating the device using a blood glucose meter.</td>
<td>3. Interpret reports and provide recommendations to the patient.</td>
</tr>
<tr>
<td>4. Reinforce the need for log-keeping (food, medication, and activity) and provide a log sheet or explain how to use a mobile app log (patient’s choice).</td>
<td>4. Inform the patient about the effects of food, activity, and medications on blood glucose levels.</td>
</tr>
<tr>
<td>5. Schedule a return visit to maximize device utility (typically 7–14 days of P-CGM wear, depending on the specific device’s approved duration of use).</td>
<td>5. Provide the patient with a take-home copy of reports as an educational tool.</td>
</tr>
</tbody>
</table>

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**FIGURE 4.** Case 4 P-CGM reports: A) initial P-CGM overlay (October 2016) and B) recent P-CGM report (February 2017).
the device and its supplies vary depending on the device manufacturer and model. The device data recorder is reusable, whereas sensors are per-patient disposable products.

Two CPT codes can be used for P-CGM procedures: 95250 and 95251. Details for the use of these codes are provided in Table 4.

CPT code 95250 covers all services relating to P-CGM initiation (i.e., sensor insertion, hookup of a recorder, and patient training), as well as sensor removal and data downloading.

- The national average allowable Medicare reimbursement for CPT code 95250 is $159, if billed by a physician paid through the Medicare physician fee schedule. Private payer and Medicaid reimbursement rates vary according to plan and program rules.
- Pursuant to 42 CFR § 410.26, the rules for Medicare reimbursement of services rendered “incident to” a physician's professional services, the services described by CPT code 95250 may also be billed if performed by any qualified staff member (e.g., registered nurses, medical assistants, lab technicians, or registered dietitians) under the direct supervision of the physician or qualified nonphysician HCP (i.e., nurse practitioner or physician’s assistant), subject to state scope-of-practice laws. These services may be billed using the National Provider Identifier of a physician or mid-level practitioner. Medicare payment may be lower if billed by a qualified nonphysician HCP.
- For hospital outpatient clinics, CPT code 95250 is paid under the Medicare Outpatient Prospective Payment System under Ambulatory Payment Classification code 5012, which is currently reimbursed at an average $105 for services offered in these facilities.

CPT code 95251 covers interpreting and analyzing a minimum of 72 hours of CGM data. This code can be used for situations in which the provider has reviewed and analyzed at least 72 hours of CGM data from a patient.

- The national average allowable Medicare reimbursement for CPT code 95251 is $44, if billed by a physician and paid through the Medicare physician fee schedule.
- Only services performed by a physician or a qualified nonphysician provider (i.e., nurse practitioner or physician’s assistant) may be billed using CPT code 95251.
- The analysis does not require a face-to-face visit. Both codes 95250 and 95251 may be billed more than once for a patient in a given year, subject to the patient’s medical policy or coverage criteria.

Based on an analysis of 68 publicly available medical policies, >93% of private payers in the United States have a medical policy for P-CGM (25). Among these payers, coverage criteria for P-CGM may include diagnosis of type 1 diabetes, type 2 diabetes or gestational diabetes. In some cases, additional documentation may be required to substantiate the medical necessity of the P-CGM study.

### Conclusion

The widespread use of P-CGM in the primary care setting would enable more robust care for patients with diabetes because P-CGM technology has created new opportunities to improve glycemic control and reduce the complications of diabetes. The collection of P-CGM data and its reporting in an easily understandable format can aid PCPs’ constructive dialogues with patients regarding behavioral modification and adjustment of the diabetes treatment regimen. Integrating other information such as data from meal and activity trackers with P-CGM data can enhance the value of such conversations. As demonstrated through the case studies included in this article, the intermittent use of P-CGM as an adjunct to lifestyle

### Table 4. Work Breakdown for CGM CPT Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Workflow</th>
<th>May Be Performed by:*</th>
<th>Face-to-Face Meeting Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>95250: CGM placement, training, downloading, and report generation</td>
<td>Sensor insertion</td>
<td>Physician, nurse practitioner, or physician’s assistant or licensed staff within scope of practice or under direct supervision of provider</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Patient training</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Meter instruction</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Removal of transmitter</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Downloading of data</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Entering blood glucose readings</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Generating printed reports</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>95251: interpretation of CGM data</td>
<td>Provider analysis of reports</td>
<td>Physician, nurse practitioner, or physician’s assistant</td>
<td>No</td>
</tr>
</tbody>
</table>

*Staff may provide services if they meet the Medicare “incident to” rules for reimbursement of services rendered incident to a physician’s professional services.
modification, medication, and dietary management can play an important role in creating teachable moments that can lead to better patient engagement and diabetes management.

### Duality of Interest

M.S., R.S., J.A.S., and R.V. are employees of Medtronic Diabetes. No other potential conflicts of interest relevant to this article were reported.

### Author Contributions

M.S. wrote the manuscript, researched the data, contributed to the discussion, and wrote parts of the manuscript. R.S. and R.V. contributed to the discussion, wrote parts of the manuscript, and reviewed and edited the manuscript. K.E., C.K., and R.S. contributed to the discussion and wrote parts of the manuscript. M.S. is the guarantor of this work and, as such, had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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