Information on Continuous Glucose Monitoring (CGM) in Type 1 Diabetes for Primary Care

INTRODUCTION

The 'BNSSG Clinical Pathway for the use of diabetes technologies in all patients with Type 1 Diabetes' has been updated to accommodate the NICE recommendations for CGM in the following published clinical guidelines:

1. Type 1 diabetes in Adults: diagnosis and management (NG17): https://www.nice.org.uk/guidance/ng17
2. Diabetes (type 1 and type 2) in children and young people: diagnosis and management (NG18): https://www.nice.org.uk/guidance/ng18

TYPES OF CGM

CGM is a device which measures glucose in the interstitial fluid (the fluid between cells), rather than capillary blood glucose levels from finger-prick testing, via a sensor which is inserted under the skin. The information will allow trends in glucose levels to be seen and alarms can alert patients if glucose levels are too high or too low.
There are two types of CGM -

Intermittently scanned CGM (isCGM)
With isCGM or Flash Glucose monitoring the sensor is worn on the upper arm, updating the glucose result every minute and stores up to eight hours of glucose readings in 15-minute intervals. A reader device is scanned over the sensor to read the result. This technology is suitable for all patients over 2 years of age.

Real time CGM (rtCGM)
With Continuous Glucose the sensor is connected to a transmitter that automatically sends continuous glucose results to a receiver device every 5 minutes. If using Flash glucose monitoring with an app and smartphone, this also acts as real time CGM and sends glucose readings directly to a smartphone every minute. These results are presented as continuous values and trends over time, enabling immediate therapeutic adjustments on the basis of 'real time' glucose results.
There are 2 different types of rtCGM:

1. **Prescribed rtCGM**

These devices are the most cost-effective option of rtCGM and should therefore be offered first. The transmitters and sensors are within the Drug Tariff and can therefore be prescribed on an FP10 by primary care.

2. **Procured CGM**

These devices and consumables can only be procured and supplied by hospital specialist diabetes teams in the NHS and have a much higher acquisition cost than prescribed rtCGM. They cannot be prescribed on an FP10.

EDUCATION & TRAINING

isCGM and prescribed rtCGM
Initiation should not be limited to case setting and can occur via Primary Care, Secondary Care or Community Teams.
It is expected that patients' complete education on their CGM either online where available or in person to ensure they are obtaining maximal benefit from the technology. Ongoing review of the CGM should be undertaken as part of the routine diabetes reviews and, where that review is not undertaken by the Primary care team, clearly documented, and communicated to **primary care for ongoing repeat prescribing of the sensors and transmitters, if required.**

Procured rtCGM
This is all managed by the specialist diabetes teams.

PRIMARY CARE REPEAT PRESCRIBING OF SENSORS FOR isCGM & prescribed rtCGM

The initiating team will provide the patient with a device, if required (reader and/or transmitter) and at least 2 weeks supply of sensors on initiation.

The following table lists the current prescribed CGM devices and details of how patients access replacement transmitters for prescribed rtCGM.

	Type of CGM	Licensed age of use	Wearable site	Sensor duration	Sensor Cost (Calculated for 30 day supply July 24 Drug Tariff)	Transmitter duration and cost	Reader available	App needed	Platform for sharing with HCP
GlucoRx Aidex	rtCGM	≥ 14 years	**Abdomen Upper arm**	14 days	£63.77	Up to 4 years £19.95	No	GlucoRx AIDEX	GlucoRx Voyager
Dexcom One+	rtCGM	≥ 2 years	**Upper buttocks (2-6 years) Abdomen Upper arm**	10 days	£74.91	No transmitter	Yes	Dexcom ONE+	Clarity
FreeStyle Libre 2+*	isCGM/ rtCGM(if used with reader)	≥ 2 years	**Upper arm**	15 days	£75.00	No transmitter	Yes	LibreLink	LibreView

* When used in combination with insulin pumps patients should maintain adequate supplies of sensors including a spare sensor in case of sensor failure to ensure they can continue to use their pump. An additional pack of sensors may be provided with the initial prescription to support this. Issues with sensor reliability should be highlighted to the manufacturer using the Abbott Online sensor support form. Clinicians may wish to document on patient notes if FreeStyle Libre 2+ is being used in combination with a pump.

BLOOD GLUCOSE TESTING STRIPS AND METER

The choice of meter and test strips should be based on the BNSSG Blood Glucose Monitoring Guidance – Type 1 Diabetes. Patients with type 1 diabetes who are using CGM will still need to take capillary blood glucose measurements although they can do this less often: to check accuracy of their CGM device and as a back-up e.g., when blood glucose levels are changing quickly or if the device stops working. Reduce blood glucose testing strip quantity to 1 box every 3 months or on request.

Please also note that the prescribing of adhesive remover wipes is not recommended, patients should be directed to use warm, soapy water to remove any remaining adhesive following removal of the sensor.

DRIVING AND DVLA REQUIREMENTS

The DVLA (Driver and Vehicle Licensing Agency) requires all patients who use insulin to monitor their blood glucose levels before driving and every two hours on long journeys. Group 2 drivers must continue to use finger prick testing for the purposes of driving. rt-CGM and flash glucose monitoring systems are not legally permitted for the purposes of Group 2 driving. For full self-monitoring requirements, please contact the DVLA directly or visit their website https://www.gov.uk/diabetes-driving

SELF-FUNDING PATIENTS WITH TYPE 1 DIABETES

Assessment for NHS funding of CGM will be undertaken at the next follow-up appointment. NICE criteria must be met, and device choices should be within the guidance of the technology pathway. In a joint discussion about the needs and preferences of the patient, the device with the lowest cost should be offered and may result in a change of device that offers a lower acquisition cost to the NHS but the same outcomes for the patient.