Worcestershire NHS
Acute Hospitals NHS Trust

Guidelines for the use of the continuous blood glucose monitoring system (CGMS Medtronic)

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

INTRODUCTION
Patients with type 1 diabetes and erratic glycaemic control and/or hypoglycaemia unawareness.

THIS GUIDELINE IS FOR USE BY THE FOLLOWING STAFF GROUPS :

Consultant Diabetologists and Diabetes Specialist Nurses.

Lead Clinician(s)

Dr Karen Tait	Consultant Diabetologist
Approved by Accountable Director on:	30th June 2015
Extension approved on:	10th March 2020
Review Date: This is the most current document and is to be used until a revised version is available	10th September 2020

Key amendments to this guideline

Date	Amendment	By:
May 2009	Guideline approved	Medicines Safety Committee
May 2013	Reviewed with no amendments made	Dr Karen Tait
May 2015	Reviewed with no amendments made	Dr Karen Tait
August 2017	Document extended for 6 months in line with TMC approval	TMC
December 2017	Sentence added in at the request of the Coroner	
December 2017	Document extended for 3 months as per TLG recommendation	TLG
March 2018	Document extended for 3 months as approved by TLG	TLG
June 2018	Document extended for 3 months as approved by TLG	TLG
June 2019	Document extended for 6 months whilst review and approval process	Alison Hall
March 2020	Document extended for 6 months whilst under review	Jane Wilson

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INTRODUCTION

Continuous blood glucose monitoring is an expensive process both in terms of cost (approx £40 per patient) and the time required to set up the procedure, download the data collected and review the results (approximately 2-3 hours per patient). The waiting time for CGMS to be performed from referral is approximately 4 to 6 weeks.

Once the sensor is inserted into subcutaneous tissue and attached to the monitoring device the patient will need to wear the device continuously for 48 to 72 hours. The patient will be requested to keep a detailed diary with dietary intake, exercise or activity undertaken, capillary blood glucose profile, insulin doses and hypoglycaemic episodes or illness documented.

The data collected is then downloaded onto a computer programme by the Diabetes Specialist Nurse and the patient's diary entries are then correlated with this information.

All the information gathered is reviewed by the Consultant Diabetologist and Diabetes Specialist Nurse to look for any patterns or significant events which will assist in understanding the reasons for erratic glycaemic control.

CGMS may be useful in the following situations:

1. Unexpected episodes of hyperglycaemia and hypoglycaemia after all other issues have been addressed for example - injection sites/technique, appropriate insulin regime; diabetes education update has taken place with the diabetes specialist nurse /dietician within the previous six months. After considering coexisting autoimmune conditions such as coeliac disease or adrenal insufficiency.

2. Severe hypoglycaemia and/or hypoglycaemia unawareness. To demonstrate to the patient that they have hypoglycaemia unawareness.

3. Nocturnal hypoglycaemia is suspected and difficult to confirm using capillary blood glucose readings.

4. Prior to the initiation of insulin pump therapy to assess fluctuations in blood glucose, response to insulin treatment, affects of food and activity on blood glucose levels. To assist in optimizing their current treatment with MDI and support the application for pump therapy.

5. HbA1c indicates poor control with home blood glucose recordings that do not correspond i.e. home blood glucose levels demonstrate consistently good glycaemic control.

6. Where unstable diabetes control is having a detrimental effect on social/psychological well being and the above considerations do not apply.

7. To demonstrate to patient that current treatment/insulin regime is not achieving optimal control or if the patient has firm belief that they have recurrent hypoglycaemia with no objective supporting information.

CLEANING THE MONITOR: to prevent **CROSS INFECTION** please follow the Medtronic company guidelines: see Guide for Healthcare Professionals Handbook.

Monitoring Tool

This should include realistic goals, timeframes and measurable outcomes.

How will monitoring be carried out?

Who will monitor compliance with the guideline?

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)*	Frequency of reporting:
	WHAT?	**HOW?**	**WHEN?**	**WHO?**	**WHERE?**	**WHEN?**
Page 2	Data is collected for at least 48 hours	Audit	Annually	Diabetes Directorate	Diabetes Directorate members 3-monthly meetings & Diabetes Consultants (trustwide	Annually
Page 2	Used according to the indications in the guideline	Audit	Annually		Diabetes Directorate members 3-monthly meetings & Diabetes Consultants (trustwide	Annually
Page 2	Results are analysed and management plan created.	Audit	Annually		Diabetes Directorate members 3-monthly meetings & Diabetes Consultants (trustwide	Annually

REFERENCES

Tanenberg R et al. 2004. Use of the Continuous Glucose Monitoring System to guide therapy in patients with insulin treated diabetes: a randomized controlled trial. *Mayo Clin Proc* **79 (12),** pp 1521-6

Streja D. 2005. Can continuous glucose monitoring provide objective documentation of hypoglycaemia unawareness? *Endocr Pract* **11(2),** pp 83-90

CONTRIBUTION LIST

Key individuals involved in developing the document

Name	Designation
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Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy/guidance affect one group less or more favourably than another on the basis of:**		
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Transgender	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
	• Disability – Learning disabilities, physical disability, sensory impairment and mental health problems	No	
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	No	
4.	**Is the impact of the policy/guidance likely to be negative?**	No	
5.	**If so can the impact be avoided?**	N/A	
6.	**What alternatives are there to achieving the policy/guidance without the impact?**	N/A	
7.	**Can we reduce the impact by taking different action?**	N/A	

If you have identified a potential discriminatory impact of this key document, please refer it to Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact Human Resources.

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	**Yes/No**
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval.