SOP GEN 01 Blood Glucose Monitoring

Procedure Number	SOP GEN 01
Purpose of Document	To ensure that the correct preparation, procedure & outcome are achieved by implementing a consistent and systematic approach to the procedure of blood glucose monitoring
Target Audience	All Nurses & appropriately trained carers
Version	V3
Author	Karen Matthews-Shard
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Review Frequency	3 yearly or when clinical or operation guidelines change
Next Review Date	October 2025
About Acacium Group	Details of all Acacium Group trading companies that this policy applies to are detailed within Appendix A

Document History			
Version	Date	Changes made/comments	By whom
V1	Dec 2016	Implementation of document history page	KNF/SJ
V2	Nov 2019	3 Yearly Review	Clinical Advisory Group
V2.1	Oct 2020	Update re rebrand	CC
V3	Oct 2022	3 Yearly Review	Clinical Advisory Group

1. Introduction

Diabetes mellitus is a condition that requires regular monitoring so that the correct management of the condition can be given. It can be used to detect high and low levels of glucose in the blood and can therefore dictate subsequent care to be given.

On occasions a direction to monitor blood glucose may be made by a medical team in clients who do not have confirmed diabetes melliitus.

It is important that the blood glucose monitoring machine is calibrated and checked daily to ensure that the monitor works effectively. Inaccurate results may have severe consequences for the client.

Many clients may have Continuous Glucose Monitoring (CGM) and Acacium Group nurses and carers will need to be trained and assessed as competent in this equipment on an individual basis.

2. Aim

To record the blood glucose levels accurately in order to provide effective diabetes management or monitor the clinical condition of the client.

3. Who may undertake this procedure

All Healthcare professionals may undertake this procedure providing they have been assessed as competent in the procedure and use of the relevant equipment/systems.

4. Special considerations

Before taking the client's blood glucose level the following needs to be checked to ensure accuracy of the result:

- That one pack of test strips is open and has not been left exposed to the air and that they are in date (within 30 days of opening)
- That the monitor and the test strips have been calibrated together
- That if a new pack of strips is required, the monitor is recalibrated
- That a high and low internal quality control test is carried out as per manufacturer's guidelines.
- That the result of the internal quality control is recorded in the equipment log book and signed and that the result is within the appropriate ranges. If not the manufacturers or supplier of the equipment need to be contacted for the machine to serviced/replaced

5. Assessment of need

The need for blood glucose monitoring and the frequency with which it is required are determined by the medical team providing the diabetes/medical care. This will be documented in the client's care plan. If the clients blood glucose level (BGL) is abnormal (i.e. too high or low), contact the Dr or Nurse Specialist responsible for the clients care and monitor more frequently as per their instructions. In addition to undertaking blood glucose monitoring at the required intervals Acacium Group

workers should consider undertaking blood glucose monitoring if they are concerned about the health of the client in any way.

6. Consent

Please read Acacium Group on Consent thoroughly and ensure valid consent has been gained.

Please now ensure you understand the Consent Policy and Mental Capacity Act in full.

7. Client and relatives/carers involvement

The Client may wish to undertake their own blood glucose monitoring or may wish a relative or carer to be taught to do them. The nurse or carer should assist them with this requirement as long as it is practical/commissioned for the intervention and in the best interest of the Client.

8. Client information

As part of obtaining valid consent the risks, benefits and alternatives to treatment will have been discussed.

The procedure must be explained fully (in a manner suitable for the Client to have full understanding) in order to gain full cooperation with the procedure.

Clients should be made aware of the signs and symptoms of hyperglycaemia and hypoglycaemia to look out for. The Client will have been given contact details of who to contact if they are concerned about any aspect of their diabetes. (Written in care plan for staff to follow)

9. Equipment

- Calibrated blood glucose monitor
- Test strips
- Control solution
- Single-use safety lancets
- Appropriate PEE
- Sharps container

10. Procedure For Blood Glucose Meters

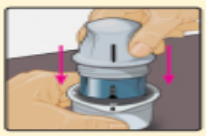
	Action	Rationale
1.	Explain procedure to the client. Some clients may want to look away at the sight of a needle.	The client should be aware of the procedure in order to allay some of his/her anxieties, to be able to co-operate in the procedure (NMC 2018) and give valid consent.
2.	The client should be advised to wash their hands with soap and water or supported to wash prior to blood sampling. The use of alcohol rub should be avoided. Encourage the	To ensure a non-contaminated result. To encourage good blood flow (https://www.diabetes.org.uk/guide-to-diabetes/managing-your-diabetes/testing)

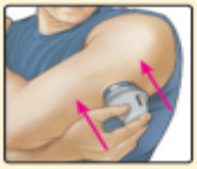
	client to keep their hands warm until sampling has been performed. Support to keep warm.	
3.	Ask the client to sit or lie down. Support them if unable.	To ensure the client's safety as some may feel faint when blood is taken (Roche Diagnostics 2004).
4.	Wash your hands and put on gloves.	To minimise the risk of cross-infection. To minimise the risk of contamination Refer to Standard infections control and precautions, national hand hygiene and personal protective equipment policy (March 2019) and Health & Social Care Act 2018.
5.	Single use Lancet should be set as per the manufacturer's recommendations.	To minimise the risk of cross-infection and accidental needle stick injury. Disposable lancets are advised following an outbreak of hepatitis B in French and US hospital (DH 1996; Roche Diagnostics 2004).
6.	Take a blood sample from the side of the finger using the lancet, ensuring that the site of piercing is rotated. Avoid frequent use of the index finger and thumb. Assessment should be made prior to commencing the procedure whether 2 people are required i.e. child clients The finger may bleed without assistance or may need assistance by 'milking' to form a droplet of blood which is large enough to cover the test pad.	The side of the finger is used as it is less painful and easier to obtain a hanging droplet of blood. The site is rotated to reduce the risk of infection from multiple stabbing, the areas becoming toughened and to reduce pain. Health and Safety (sharp Instruments in Healthcare) Regulations 2013.
7.	Apply the blood to the testing strip. Some test strips are hydrophilic and are dosed/filled from the side and are not dropped directly onto the strip.	The window on the test strip allows verification of a correctly dosed strip Health and Safety (sharp Instruments in Healthcare) Regulations 2013.
8.	Dispose of lancet in a container designed for sharps. Ask the client to dispose of lancet if they are carrying out the finger prick test themselves	To reduce the risk of needle stick injury Health and Safety (sharp Instruments in Healthcare) Regulations 2013.
9.	Once the result is obtained, record immediately. Report any abnormal results to GP, Nurse Specialist or Community Nurse	To ensure the accuracy of the result Health and Safety (sharp Instruments in Healthcare) Regulations 2013
10.	Dispose of waste appropriately. Remove gloves and dispose.	To reduce the risk of cross-infection Refer to Standard infections control and precautions, national hand hygiene and personal protective equipment policy (March 2019) and Health & Social Care Act 2018.

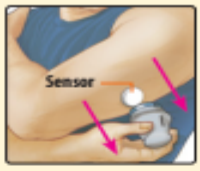
11.	Make the client comfortable and observe site of test for bleeding.	To ensure the client's comfort.
12.	Wash and dry hands.	To prevent cross-infection Health and Safety (sharp Instruments in Healthcare) Regulations 2013.

Applying Your Sensor

Step	Action	
1		Apply Sensors only on the back of your upper arm. Avoid areas with scars, moles, stretch marks or lumps. Select an area of skin that generally stays flat during your normal daily activities (no bending or folding). Choose a site that is at least 2.5 cm (1 inch) away from an insulin injection site. To prevent discomfort or skin irritation, you should select a different site to the one most recently used.
2		Wash application site using a plain soap, dry and then clean with an alcohol wipe. This will help remove any oily residue that may prevent the Sensor from sticking properly. Allow site to air dry before proceeding. **Note:** The area **MUST** be clean and dry, or the Sensor may not stick to the site.

Step	Action	
3		Open the Sensor Pack by peeling the lid off completely. Unscrew the cap from the Sensor Applicator and set the cap aside. **CAUTION:** Do NOT use if the Sensor Pack or the Sensor Applicator seem to be damaged or already opened. Do NOT use if past expiry date.
4		Line up the dark mark on the Sensor Applicator with the dark mark on the Sensor Pack. On a hard surface, press down firmly on the Sensor Applicator until it comes to a stop.
5		Lift the Sensor Applicator out of the Sensor Pack.

Step	Action
6	 The Sensor Applicator is prepared and ready to apply the Sensor. **CAUTION:** The Sensor Applicator now contains a needle. Do NOT touch inside the Sensor Applicator or put it back into the Sensor Pack.
7	 Place the Sensor Applicator over the prepared site and push down firmly to apply the Sensor to your body. **CAUTION:** Do NOT push down on the Sensor Applicator until placed over prepared site to prevent injury or unintended results.

Step	Action
8	 Gently pull the Sensor Applicator away from your body. The Sensor should now be attached to your skin. **Note:** Applying the Sensor may cause bruising or bleeding. If there is bleeding that does not stop, remove the Sensor and apply a new one at a different site.
9	 Make sure the Sensor is secure after application. Put the cap back on the Sensor Applicator. Discard the used Sensor Pack and Sensor Applicator. See *Disposal* section.

Starting Your Sensor

Step	Action
1	 Press the Home Button to turn on the Reader.
2	 Touch **Start New Sensor**.
3	 Hold the Reader within 4 cm (1.5 inches) of the Sensor to scan it. This starts your Sensor. If sounds are turned on, the Reader beeps when the Sensor has been successfully activated. The Sensor can be used to check your glucose after 60 minutes. **Note:** If the Sensor is not successfully scanned within 15 seconds, the Reader displays a prompt to scan the Sensor again. Touch **OK** to return to the Home Screen and touch **Start New Sensor** to scan your Sensor.

Checking Your Glucose

Step	Action
1	 *OR*  Turn the Reader on by pressing the Home Button or touch **Check Glucose** from the Home Screen.
2	 Hold the Reader within 4 cm (1.5 inches) of your Sensor to scan it. Your Sensor wirelessly sends glucose readings to the Reader. If sounds are turned on, the Reader beeps when the Sensor has been successfully scanned. **Note:** If the Sensor is not successfully scanned within 15 seconds, the Reader displays a prompt to scan the Sensor again. Touch **OK** to return to the Home Screen and touch **Check Glucose** to scan your Sensor.

Step	Action
3	 The Reader displays your current glucose reading along with your glucose graph and an arrow indicating the direction your glucose is going.

11. Continuous Glucose Monitoring (CGM)

Continuous Glucose Monitoring (CGM) is used in people who rely on insulin to control their diabetes. It involves use of a small device worn just under the skin; this measures interstitial glucose (sugar) levels continuously throughout the day and night, identifying trends in glucose levels. Some devices provide alerts for highs and lows to facilitate disease control. There are different types of CGM available:

a. Real-time CGM (rtCGM) uniformly tracks glucose concentrations in the body's
interstitial fluid, providing near real-time glucose data. There are different types of rtCGM, those that can be used independently (standalone) and those that are used with an insulin pump (insulin pump compatible).

b. Intermittently scanned CGM (iCGM) uses similar methodology to show continuous glucose measurements retrospectively at the time of checking. This is also known as Flash Glucose Monitoring (FlashGM).

12. Related Documents

POLICY:

CLIN 07 Infection Prevention and Control Policy
CLIN 03 Medicines Management Policy
CLIN 14 Records Management Policy
CLIN 16 Diabetes Management Policy
CLIN 06 Consent Policy

13. References

- The Royal Marsden Hospital Manual of Clinical Nursing Procedures; 9th edition; www.diabetes.org.uk
- NICE Guidance on Management of Diabetes – Updated August 2019
- NICE Guidance on Management of Diabetes – Children November 2016
- Standard infections control precautions: national hand hygiene and personal protective equipment Policy, March 2019
- Health & Social Care Act 2008
- https://freestyleserver.com/Payloads/IFU/2022/q4/ART41011-307_rev-A web.pdf
- https://freestyleserver.com/Payloads/IFU/2022/q3/ART40901-208_rev-A-WEB.pdf
- https://www.diabetescare.abbott/support/manuals/uk.html

Appendix A: About Acacium Group

Acacium Group consists of a number of trading companies, each providing services within core niche areas of the health and social care industries. Therefore, as this document is a Group standard operating procedure (SOP), the SOP herein applies to all trading companies detailed below:

Thornbury Community Services (TCS)

At Thornbury Community Services (TCS), high quality care is our number one priority. With a team of exceptional and conscientious nurses and care staff, we're able to deliver the best complex care at home or in the community, 24/7 or whenever you need it. With compassion, integrity and dedication, we help empower individuals to achieve personal aspirations, as well as providing care tailored to their needs. Making a positive difference to our client's lives is our passion and it's this that sets us apart.

Thornbury Community Services Learning Disability & Autism (TCS LDA)

Thornbury Community Services (TCS), provide specialist outcome-focused support for children and adults who are diagnosed with a learning disability and/or autism, who may present with behaviours of concern. Working in close partnership with commissioners, local authorities, hospital teams, our clients and their families; providing bespoke healthcare services, offering tailored care for every individual we support. We have a proven track record of supporting individuals with learning disabilities and/or autism and a reputation for delivering excellence across all aspects of case management.

Our vision is to increase personal choice and to empower people with a learning disability and/or autism to live fulfilling and rewarding lives and be an active member of their own community.

Pulse Nursing at Home

Pulse Nursing at Home provides flexible, bespoke care for people living in their own homes and communities. We provide a lifetime solution that can adapt to changing healthcare needs.

We're passionate about our people and proud that the services we provide achieve the highest standards of compassionate care, supporting choice and empowering our clients to live the life they want.

Thornbury Nursing Services (TNS)

Established in 1983, TNS is one of the UK's leading independent nursing agencies, providing skilled nurses on a temporary or permanent basis throughout England and Wales.

Thornbury Nursing Services
Part of Acacium Group

TNS believe it is more important than ever to offer high quality, clinical care at home and in the community.
TNS specialist community nurses and carers provide temporary nursing and care support for clients at home. They're ready to step in to support discharge plans, prevent hospital admissions, maintain client safety and support uncertain rosters.

Service TNS offers

- Temporary staffing to cover shortfalls in existing shift rotas
- Backfilling for interim cover during recruitment periods
- Rapid response to facilitate early discharge and to avoid hospital admission
- A staffing solution to stabilise complex mental health cases in crisis
- A CQC registered staffing service – currently rated 'outstanding'
- Assistance in stabilising staffing in long term complex care packages
- Support for both adults and paediatrics
- A nurse-led team contactable 24 hours a day, 7 days a week

Scottish Nursing Guild (SNG)

Established in 1995, SNG, as part of Acacium Group, is one of Scotland's leading independent nursing agencies, providing skilled nurses on a temporary basis to major NHS trusts, and private sector clients, throughout Scotland, Northern Ireland and Republic of Ireland.

Scottish Nursing Guild
Part of Acacium Group

Service SNG offers

- A nurse-led team with full case management if needed, including compiling individualised care plans and risk assessments with ongoing support from Case Manager
- Care support for as long as you need us, from a few hours to 24/7
- Our office is contactable 24 hours a day, 7 days a week
- Rapid response to make early discharge possible or to avoid hospital admission
- Highly skilled nurses to provide home-based specialist care tailored to the specific needs of clients with complex care requirements
- Ad-hoc staffing to cover shortfalls in existing shift rotas or provide interim cover during recruitment periods
- Help stabilising staffing in long term complex care packages
- Palliative / end of life nursing care for clients who wish to remain at home
- Care provision for clients who need assistance with personal and/or social care support
- Support for both adults and children
- Support for clients no matter how complex their care needs
- Respite care to support clients either at home or away from home