GIG CYMRU NHS WALES | Bwrdd Iechyd Addysgu Powys | Powys Teaching Health Board

The management and prevention of hypoglycaemia in the undiagnosed/ unplanned, at-risk neonates born in a community setting

Document Reference No:	PTHB / MAT 083	
Version No:	1	
Issue Date:	February 2023	
Review Date:	February 2025	
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Accountable Executive:	Director of Nursing and Midwifery	
Approved By:	Women and Childrens Policies & Procedures Governance Group	
Approval Date:	16/01/2023	
Document Type:	Standard Operating procedure	Clinical
Scope:	Maternity	

The latest approved version of this document is online.
If the review date has passed please contact the Author for advice.

Powys Teaching Health Board is the operational name of Powys Teaching Local Health Board
Bwrdd Iechyd Addysgu Powys yw enw gweithredol Bwrdd Iechyd Lleol Addysgu Powys

Table of Contents

Table of Contents 2
Version Control 3
Engagement & Consultation 3
Circulated to the following for Consultation 3
Evidence Base 3
Impact Assessments 4
1 Introduction 5
2 Objective 5
3 Definitions (Mandatory Heading) 5
4 Responsibilities(Mandatory Heading) 5
4.1 Head of Midwifery and Sexual Health Services 6
4.2 Assistant Head of Midwifery and Sexual Health Services 6
4.3 Infant Feeding Coordinator 6
4.4 Women and Children's Risk and Governance Lead 6
4.5 Midwives 6
5 Identification of babies at risk 7
6 Signs and Symptoms of hypoglycaemia in babies 8
7 Management of babies born under the 2.0 centile in Powys 9
8 Management of babies born between the 2nd and 10th centile in Powys 10
9 Safeguarding 10
10 Monitoring Compliance, Audit & Review 11
11 References / Bibliography 11
Appendix A 12
Standard Operating Procedure (SOP) for the use of Glucose Gel for Hypoglycaemia in High Risk Infants in the Community Setting 12

Version Control

Version	Summary of Changes/Amendments	Issue Date
1	Initial Issue	February 2023

Engagement & Consultation

Key Individuals/Groups Involved in Developing this Document

Role / Designation
Infant Feeding Coordinator
Consultant midwife

Circulated to the following for Consultation

Date	Role / Designation
02.12.2022	Womens and Childrens Infant Feeding Champions
08.12.2022	PTHB Midwifery team
08.12.2022	PTHB Midwifery Leadership and Management team
08.12.2022	PTHB Women & Children's Policy Group members
08.12.2022	Safeguarding team
08.12.2022	Medicines management
08.12.2022	Neonatologist SBUHB

Groups Approved at

Date	Group
9.1.2023	Maternity guidelines Group
16.1.2023	Women and Children's policies and procedures group

Evidence Base
Please list any National Guidelines, Legislation or Health and Care Standards relating to this subject area? Identification and Management of Neonatal Hypoglycaemia in the Full Term Infant (2017) | British Association of Perinatal Medicine (bapm.org)

Impact Assessments

Equality Impact Assessment Summary					
	No impact	**Adverse**	**Differential**	**Positive**	**Statement** Please remember policy documents are published to both the **intranet** and **internet.** The version on the internet must be translated to Welsh.
Age	X				
Disability	X				
Gender reassignment	X				
Pregnancy and maternity	X				
Race	X				
Religion/ Belief	X				
Sex	X				
Sexual Orientation	X				
Marriage and civil partnership	X				
Welsh Language	X				
Human Rights	X				

Risk Assessment Summary
Have you identified any risks arising from the implementation of this policy / procedure / written control document? No risks identified
Have you identified any Information Governance issues arising from the implementation of this policy / procedure / written control document? No risks identified
Have you identified any training and / or resource implications as a result of implementing this? Each midwife to receive training in this guideline and in the administration of buccal glucose gel by the infant feeding coordinator. A training log will be kept for audit purposes.

1 Introduction

Certain infants are at risk of neurological sequelae of neonatal hypoglycemia. High risk infants have an impaired counter-regulatory response. Therefore, the usual ways in which newborn infants mobilise glycogen and fat stores and synthesize glucose are compromised. This therefore makes them more susceptible to hypoglycemia.

Measures should be in place to identify them at birth for early milk/energy provision and monitoring of blood glucose concentration. These babies are not recommended to be born in Powys due to the risk of fetal distress in labour and hypoglycaemia in the neonate. However, this guideline looks at how to manage babies who are unexpectedly/ undiagnosed born in Powys.

This guideline uses the terms 'woman' or 'mother' throughout. These should be taken to include people who do not identify as women but are pregnant or have given birth. Similarly, where the term 'parents' is used, this should be taken to include anyone who has main responsibility for caring for a baby. It is recognized that there are many different family arrangements.

2 Objective

The aim of this guideline is to safely manage term babies at risk of hypoglycaemia in the first 48-hours after birth. It aims to keep mothers and babies together, and to reduce the risk of brain injury.

3 Definitions (Mandatory Heading)

- **PTHB** – Powys Teaching Health Board
- **AF** – Artificial feeding
- **BF** – Breastfeeding
- **EBM** – Expressed breast milk
- **DGH** – District General Hospital
- **M**LU – Midwife-Led Unit
- **S**GA – Small for gestational age

4 Responsibilities(Mandatory Heading)

Responsibilities in relation to this guideline are:

	4.1 Head of Midwifery and Sexual Health Services The Head of Midwifery and Sexual Health Services must: • Ensure all staff read and understand this procedure • Arrange regular review to monitor compliance with this procedure
	4.2 Assistant Head of Midwifery and Sexual Health Services The Assistant Head of Midwifery and Sexual Health Services has responsibility for: • Ensuring dissemination of this document to all relevant staff • Liaising with District General Hospitals (DGH) to feedback where care has fallen outside of this guideline
	4.3 Infant Feeding Coordinator The infant feeding coordinator has responsibility for: • Supporting implementation of this document • Reviewing any new evidence or guidance that is produced that may influence the service • Communicating any key changes in advice that might influence service provision to the Midwifery Leadership and Management team for consideration. • Provide training and audit of the use of glucose 40% oral gel via the buccal route.
	4.4 Women and Children's Risk and Governance Lead The Women and Children's Risk and Governance Lead has responsibility for: • Monitoring review of incidents in relation to content of this document
	4.5 Midwives All midwives working in the maternity services have responsibility for: • Reading and being familiar with contents of this document • Referring neonates appropriately for additional care where required • Working to the requirements of their role within the scope of this guideline

5 Identification of babies at risk

The following are classified as at-risk babies and should be immediately transferred out of Powys to the nearest DGH to be commenced on the Hypoglycaemia pathway:

1. Intrauterine growth restriction (birth weight <2nd centile)
2. Babies born to diabetic mothers
3. Babies born less than 37 weeks gestation
4. Temperature < 36 degrees Celsius within the first 48-hours of life.
5. Infants of mothers taking beta-blockers in the third trimester and/or at time of delivery
6. Maternal sepsis in labour where the baby is born before transfer
7. Rare conditions/family history where the baby is at risk of hypoglycaemia flagged up antenatally or by Neonatologist

All babies regardless of risk factors should be monitored for:

1. Signs of symptomatic hypoglycaemia (see section 6)
2. Abnormal feeding behaviour ascertained through a full feeding assessment to exclude reluctance to feed including:
   - Not waking for feeds
   - Not sucking effectively
   - Drowsiness of lethargy
   - Constantly unsettled at the breast eg pulling off or distressed when offered the breast
3. Hypothermia:
   - One temperature of 36-36.5ºC can be treated by warming measures and a feed. A repeat temperature must be checked in 1 hour. A second temperature <36.5ºC warrants admission.

Any babies falling into the categories above should be given a dose of glucose 40% oral gel and feed and immediately transferred to the nearest DGH (Appendix A).

6 Signs and Symptoms of hypoglycaemia in babies

- Cyanosis
- Apnoea
- Altered level of consciousness
- Seizures
- Hypotonia
- Lethargy
- High pitched cry
- Abnormal feeding behaviour
- Not waking for feeds
- Not sucking effectively
- Drowsiness or lethargy
- Constantly unsettled at the breast e.g pulling off and getting distressed
- Jitteriness - defined as excessive repetitive movements of one or more limbs, which are unprovoked and not in response to a stimulus is common and is not by itself an indication to measure blood glucose. In an at-risk baby, it may be a sign of hypoglycaemia.

7 Management of babies born under the 2.0 centile in Powys

Babies who are born under the 2nd centile are required to be transferred to the nearest DGH for commencement on the hypoglycaemia pathway immediately after birth. If the baby is asymptomatic and requires just observation, then they can be transferred with the mother and midwife in a taxi (in line with MAT068). However, if there are any concerns regarding the baby's condition then transfer should be arranged via ambulance.
The following steps must be taken in all cases of baby requiring the hypoglycaemia.

- Discuss with the parents/ carers that their baby should be on the hypoglycaemia pathway. The significant risks of hypoglycaemia and hypothermia, including death and brain damage must be discussed with parents.
- Dry baby and immediately place hat on baby's head
- Baby should remain skin to skin, covered by warm towels, if this is not possible with the mother then this should be recommended with the birth partner. If no one is available to do skin to skin/ or when transferring, ensure baby is well dressed and temperature is maintained, as low temperature can worsen hypoglycaemia
- Ensure baby has an effective feed (BF/EBM or AF) and a single dose of glucose 40% oral gel (0.5mls/kg) prior to transfer in all cases and within 1 hour of life (Appendix A)

8 Management of babies born between the 2nd and 10th centile in Powys

Babies who are born under the 10th centile but remain above the 2nd centile are not required to be transferred to the nearest DGH for commencement on the hypoglycaemia pathway, unless there are other clinical concerns highlighted. However, the following steps must be taken.

- Discuss ongoing and regular skin to skin to help with thermoregulation and lactation
- Initiate the first feed, within 1st hour of life
- These babies do not need a hat placed on their head after birth and mum should be encouraged to keep baby warm in skin to skin through use of breathable blankets/ towels over baby.
- Encourage 2-3 hourly feeding (BF/ EBM via syringe or AF) and discuss the importance of effective regular feeding in the first 48 hours
- The mother should be shown how to hand express and should be given colostrum harvesting syringes and told that she is recommended to express and give EBM via syringe if the baby will not latch at breast, roughly every 2-3 hours.
- The midwife should NOT discharge the woman from the birth centre/ leave the home environment prior to the baby having an effective feed and mum is happy with positioning and attachment if breastfeeding.
- Discuss the small increased risk of hypoglycaemia in a SGA infant (>2nd centile/ <10th centile) along with signs of hypoglycaemia/ hypothermia and ensure they are aware of where to seek advice and support.

9 Safeguarding

If the health professional suspects that the parents may not, or they do not follow professional advice post birth or in the postnatal period, such as declining to take the baby to a hospital for review when there are clinical concerns, there should be a documented discussion about the risk of declining to follow the advice and consider making a report to local authority.
If the baby is considered to be at risk, contact PTHB safeguarding team on 01686 252806 or PowysTHB.Safeguarding@wales.nhs.uk for advice and support (for urgent out of hours safeguarding advice, contact Powys Front Door on 0345 054 4847)

10 Monitoring Compliance, Audit & Review

A Datix must be submitted for all cases of transfer for neonatal review. Any Datix submitted where this SOP has been followed will be reviewed by the infant feeding coordinator to assess compliance with the SOP. Datix submissions are reviewed as part of the weekly maternity meetings. All cases of transfer are reviewed to ensure processes have been followed. Any lessons learned and good practice will be shared with the wider team.

This guideline will be audited one year after implementation to ensure adherence to it.

This document will be reviewed every three years or earlier should audit results or changes to legislation / practice within PTHB indicate otherwise.

11 References / Bibliography

Identification and Management of Neonatal Hypoglycaemia in the Full Term Infant (2017) | British Association of Perinatal Medicine (bapm.org)

MAT068 – Pan-Powys Maternity Transfer and Communication to Ambulance Services Standard Operating Procedure (SOP)

All Wales Neonatal Network Hypoglycaemia Pathway, 2021

Appendix A

Standard Operating Procedure (SOP) for the use of Glucose Gel for Hypoglycaemia in High Risk Infants in the Community Setting

Clinical condition	Neonatal hypoglycaemia
Criteria for inclusion	• Babies born in the community/MLU requiring transfer to hospital for hypoglycaemia pathway
Criteria for exclusion	• Babies <35 weeks' gestation • Babies over 48 hours of age
Seek further advice / escalate	• Urgently if any clinical manifestations of hypoglycaemia • Discuss 2nd dose with neonatal team

<table>
<tr><th>Description of treatment</th><th></th></tr>
<tr><td>Name of medicine</td><td>glucose 40% oral gel</td></tr>
<tr><td>Legal status of medicine</td><td>Not applicable – not classed as a medicine</td></tr>
<tr><td>Form</td><td>Oral Gel</td></tr>
<tr><td>Strength</td><td>40%</td></tr>
<tr><td>Dosage</td><td>0.5ml/kg of glucose 40% oral gel
<table>
<tr><td>Weight of baby (Kg)</td><td>Volume of Oral Gel (ml)</td></tr>
<tr><td>1.5-1.99</td><td>1ml</td></tr>
<tr><td>2.0-2.99</td><td>1.5ml</td></tr>
<tr><td>3.0-3.99</td><td>2ml</td></tr>
<tr><td>4.0-4.99</td><td>2.5ml</td></tr>
<tr><td>5.0-5.99</td><td>3ml</td></tr>
<tr><td>6.0-6.99</td><td>3.5ml</td></tr>
</table></td></tr>
<tr><td>Route of administration</td><td>Buccal</td></tr>
<tr><td>Storage</td><td>In drugs cupboard within the birth Centre environment, until the best before date on packaging.
(Once bottle of Glucogel is opened, if the top is securely refastened it will last until the best before date on bottle)</td></tr>
<tr><td>Method of administration</td><td>• Draw up correct volume of glucose 40% oral gel (e.g Glucogel) using a 2.5 or 5ml oral/enteral (purple) syringe
• Dry oral mucosa with gauze, gently squirt oral gel with syringe (no needle) onto the inner cheek and massage oral</td></tr>
</table>

	gel into the buccal mucosa using latex-free gloves • Offer a feed, preferably breast milk, immediately after administration of glucose 40% oral gel
Frequency of administration and total treatment quantity	• One dose by community midwife – discuss further doses with neonatologist. • At least 30 minutes between doses
Adverse reactions	• None anticipated • Document and report any witnessed side effects
Verbal advice for patient/carer	Discussion documented in patient notes
Follow up	As per medical assessment
Arrangements for referral for medical advice	Follow hypoglycaemia pathway and refer accordingly
Records of administration for audit	Document in patient notes

Staff	
Professional qualifications	**Registered midwife**
Training	**Registered midwife**