Deterioration of the Newborn (NEWTT2 – Newborn Early Warning Track and Trigger): A Framework for Practice Guideline

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

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Version Control

Version	Summary of Changes/Amendments	Issue Date
1	Initial Issue	08/07/2025

Engagement & Consultation

Key Individuals/Groups Involved in Developing this Document

Role / Designation
Perinatal Safety Champion
Consultant Midwife
Infant Feeding Co-Ordinator
Assistant Head of Midwifery
Consultant Paediatrician

Circulated to the following for Consultation

Date	Role / Designation
10/04/2025	Powys Midwives
10/04/2025	Members of the W&C Policies and Procedures Group
10/04/2025	Safeguarding team
10/04/2025	Link Obstetricians: ABUHB, CTMUHB, SBUHB, HDUHB, BCUHB, SATH, WVT

Groups Approved at

Date	Group
06/05/2025	Maternity guidelines Group
20/05/2025	Women and Children's policies and procedures group

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? None identified
Have you identified any Information Governance issues arising from the implementation of this policy / procedure / written control document? As above
Have you identified any training and / or resource implications as a result of implementing this? None identified

1 Introduction

Every newborn infant should be provided with the environment and healthcare professional support required to enable the transition of their physiology following birth, the establishment of infant feeding, and the early development of the family. Additionally, they should be protected to prevent avoidable morbidity and mortality during this phase of adaptation. While most newborn infants require only short-term surveillance there are groups at risk of developing complications particular to the perinatal period. By planning and preparing for these at-risk newborn infants we aspire to prevent morbidity that could have life-long consequences for their health and wellbeing.

The revised deterioration of the newborn framework for practice describes at risk groups and provides an updated Newborn Early Warning Track and Trigger (NEWTT2) chart aligning to current recommendations for newborn care. The extended framework provides an escalation tool and a standard response and review tool for the multidisciplinary team to promote consistency between healthcare professionals and ensure that the team and family are involved in and fully informed of the actions required for a baby to receive safe and quality care.

2 Objective

The purpose of this guideline is to outline the steps for the implementation and use of the National Early Warning Trigger and Track (NEWTT2) tool. NEWTT2 is a risk assessment, vital signs observation chart and escalation protocol designed to aid in the early recognition of the deterioration in newborns. This guideline aims to ensure the consistent and effective monitoring, assessment, and intervention for infants in accordance with the British Association of Perinatal Medicine (BAPM, 2015) guidelines.

The use of the NEWTT2 observation chart for infants with additional risk factors will aid in the detection of deterioration and facilitate earlier interventions in care. Prompt management of deterioration will reduce the severity of illness and subsequent admission to the Neonatal unit. Based on the BAPM guidelines, the NEWTT2 tool incorporates a colour-coded chart to monitor vital signs but also encompasses parental concern in newborn infants.

3 Definitions

PTHB – Powys Teaching Health Board

- **NEWTT** – Newborn Early Warning Track and Trigger
- **BAPM** – British Association of Perinatal Medicine
- **OTL** – Operational Team Lead
- **DGH** – District General Hospital
- **ATAIN** – Avoidable Term Admissions into Neonatal Units
- **BBA** – Birth Before Arrival of a Health Care Professional
- **MLU** – Midwifery Led Unit
- **SRC** – Sepsis Risk Calculator

Role / Responsibilities

4.1 Head of Midwifery and Sexual Health

The Head of the Department 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 Band 7 operational team lead (OTL)

The Bronze OTL has responsibility for:

- Ensuring compliance with this document by the teams that they lead
- Ensure availability of NEWTT2 charts and risk assessment
- Ensure staff are adequality trained in the use of NEWTT2 including the escalation protocol.

4.4 Consultant Midwife

The consultant midwife 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.

	• Being available in an advisory capacity related to care outside of guidance
	4.5 Women and Children's Risk and Governance Lead The Women and Children's Risk and Governance Lead has responsibility for: • Monitoring and reviewing of incidents and/or neonatal transfers of care in relation to the content of this document • Liaising with District General Hospitals (DGH) to feedback where care has fallen outside of this guideline • Attending Avoidable Term Admissions into Neonatal Units (ATAIN) meetings in District General Hospitals for the review of Powys babies to ensure learning fed back and embedded
	4.6 All Midwives working within maternity services All midwives working in maternity services have responsibility for: • Reading and being familiar with contents of this document • Ensure that vital signs are measured and recorded accurately at regular intervals as outlined in this document • Recognise and interpret the calculated score from the NEWTT2 chart and respond appropriately as per the escalation protocol. • Initiate interventions where required • Communicate concerns appropriately, ensuring detailed handover including what the concern is and what you have done to mitigate risk so far • Communication with parents, ensuring continuous update
5 Neonatal Risk Assessment	
	5.1 Monitoring Every baby born in Powys will require a neonatal risk assessment to be completed within the first 2 hours of life. The risk assessment tool (refer to appendix B) will support midwives to use their clinical judgement to determine whether a baby may need enhanced monitoring or further assessment in an acute unit following birth. If no concerns arise from the risk assessment tool, the baby will continue with routine care in Powys.
	5.2 Recording • Ensure all sections of the risk assessment tool are completed • Any comments/recommendations need to be clearly documented by the identified risk factors

- Risk factors identified will trigger the use of the NEWTT2 Observation Chart
- If risk factors are identified a care plan should be documented on the back page of the document
- Within the care plan, observation frequency and actions required must be documented

5.3 Enhanced Monitoring in Powys

The following risk factors can receive enhanced monitoring in Powys if there are no additional concerns:

Risk Factor	**Plan of Care**
Non-significant Meconium	Observation in line with NICE at 1 hour and 2 hours and documented on NEWTT2 Chart. Where these are normal continue routine PN care. Where meconium is considered to be non-significant (and in the absence of other risk factors), then the pathway of care should be for women to be supported to receive midwifery-led care. Where meconium is considered significant (evidence of dark green or black amniotic fluid that is thick or tenacious, or any meconium-stained amniotic fluid containing lumps of meconium), transfer should be recommended to obstetric led care. Where liquor is clear but becomes meconium-stained during the intrapartum period, to any degree, this should be considered an emerging risk factor and more likely to be linked to intrapartum events. This should prompt holistic

	assessment and consideration of transfer. (All Wales Midwifery Led Care Guidelines 6th Edition – Page 26)
Birth Before Arrival of a Health Care Professional (BBA)	Observations at 1 & 2 hours of age. Continue with routine PN care if no additional concerns
Maternal opiate pain relief < 6 hours prior to delivery	Observations at 1 & 2 hours of age. Continue with routine PN care if no additional concerns
Prescribed maternal SSRIs or SNRI's and other psychotropic medications in the 3rd trimester	Neonates who have been exposed to maternal mental health medication in utero must include a Poor Neonatal Adaptation Syndrome (PNAS) assessment within 24 hours of birth. For neonates who go home after 24hrs, or who have been born at home, assessment should be repeated for PNAS on day two. (observations documented on NEWTT2 chart) Refer to WCH 071 Management of Perinatal Mental Health in Women and Childrens Services for specific drugs (Page – 69)
Feeding Concerns - Reluctant, refusal or irritable *Definition: Signs of reluctant feeding include not waking for feeds, not latching, not sucking effectively, and appearing unsettled. A reluctant feeder is a baby who is not showing feeding cues. NB: A baby who is eager to feed but needs support is not necessarily a reluctant feeder, however midwives should assess whether a baby is*	Refer to appendix E - Reluctant Feeder Flow Chart Observations at 1 - 2 hours of age Continue with observations 2 hourly up to 6 hours of age if symptoms persist

effectively or ineffectively feeding.	
Prolonged Rupture of Membranes: Baby born in ML setting with >24 hour total duration ROM	Parents opt in to 24 hours of observations in an acute unit. Perform neonatal observations at 1 hour and 2 hours post birth. Record on NEWTT2 Chart. Arrange transfer to postnatal ward for assessment via Sepsis Risk Calculator (SRC) Or; Parents opt for routine postnatal care in ML setting: Perform neonatal observations at 1 hour and 2 hours post birth. Record on NEWTT2 Chart. Refer to MAT 080 Early Onset Sepsis Risk Assessment for Infants ≥34 Weeks Gestation (Page 10)

Please refer to Care Pathway Flowcharts (Appendix C) for enhanced monitoring in Powys for the expected plan of care if abnormal clinical signs or observations are detected.

5.4 Transfer of Care to an Acute Unit

Following birth, if risk factors have been identified on the neonatal risk assessment, transfer to an acute unit should be recommended, as outlined in the transfer to DGH flow chart (Appendix C), unless the criteria falls under the enhanced monitoring pathway in Powys. The NEWTT2 chart can assist in assessing the neonate while awaiting transfer to the acute unit, but should not delay transfer. The mode of transport should be determined based on the All-Wales criteria for selecting transport options (see Appendix F).

6. NEWTT2 Observation Chart

The BAPM NEWTT2 framework is designed for use in postnatal care settings including the birthing area, postnatal ward and transitional care unit. In the rare event that a baby is deteriorating or at risk of deterioration in a community setting (home or midwifery-led unit (MLU)) the NEWTT2 chart can be used to support monitoring of the baby while transfer to the consultant unit is undertaken without delay. It is advised immediate contact with the neonatal team and urgent transfer into the consultant unit from community settings for infants with any observations outside the acceptable normal range. NEWTT2 is not designed to be used for patients being cared for on a paediatric ward. The NEWTT2 Chart is suitable for use up to 28 days after birth

6.1 Monitoring

Newborn vital signs should be monitored at appropriate intervals, depending on the risk factor. Whilst awaiting transfer to an acute unit, it is expected that a set of baseline observations are completed, and observations continue to be carried out as per NEWTT2 chart.

6.2 Recording

Record vital signs on the NEWTT2 observation chart. Ensure each parameter is documented accurately.

<u>Pulse Oximetry</u>

Whilst the NEWTT2 working group (BAPM) recognise that pulse oximetry is the gold standard when assessing newborns for potential cyanosis, this is not yet available in all hospital or home birth settings and so the NEWTT2 chart continues to allow visual inspection of colour to be documented when this is not possible. Pulse oximetry, and specifically post-ductal oxygen saturations, should always be used where possible. Ensure increased vigilance when assessing for cyanosis in babies with darker skin tones

<u>Glucose Monitoring</u>

Glucose monitoring is not carried out in the community setting within Powys Maternity Services. Please refer to the hypoglycaemia in community flow chart for neonates at risk of hypoglycaemia or showing signs of hypoglycaemia (Appendix G).

<u>Thermal Control Measures</u>

If the neonate's temperature is between 36°C and 36.4°C, apply thermal control measures and recheck the temperature within 1 hour, as indicated on the NEWTT2 chart. If the neonate's temperature is below 36°C, apply thermal control measures and transfer to an acute unit.

Thermal control measures in community include:

- Ensuring a warm birthing environment
- Maintain pool temperature between 36.5 and 37.5 in the 2nd stage of labour
- Dry the baby thoroughly
- Skin to skin and covered
- Supporting a feed (breastmilk or expressed)
- Consider Thermal Warming Aid (Ready Heat Warming Cocoon)

Consider use of the Ready Heat Warming Cocoon both pre- and during transfer if:

- Temperature has not improved with routine thermal control as above
- Preterm < 37weeks gestation
- Birth Weight <2nd centile
- Symptomatic of hypoglycaemia
- Clinical judgement where babies are at risk of hypoglycaemia but asymptomatic

If the neonate's temperature does not improve with thermal control measures, transfer the neonate to an acute unit for further assessment.

6.3 Interpretation

After birth, if risk factors are identified on the neonatal risk assessment, transfer to an acute unit should be recommended as per the transfer flow chart (Appendix C), unless the risk factors fall under Powys' enhanced monitoring criteria (non-significant meconium, BBA, opiate administration <6 hours before birth, PROM total duration > 24hrs if parents opt for local care, SSRI/SNRIs, feeding concerns).

Use the color-coded chart to determine whether the newborn's vital signs are within the normal range or if escalation is needed.

	Observations that fall on the line should be recorded within the score of the box above the line. When using the NEWTT2 chart in the community setting, the escalation process on the reverse side may differ slightly. A neonate that has a score of 2 or more on the 'thresholds and triggers' section should be transferred to an acute unit for a neonatal review. It is expected that the neonate will be reassessed upon arrival at the acute unit by their team, and the escalation process on the back of the chart will be followed to ensure an appropriate response.
	6.4 Escalation If vital signs fall outside of the normal range on the NEWTT2 chart, follow the escalation protocol on the back of the document. Within a community setting, if neonatal vital signs fall outside of normal range or it is evident the baby is deteriorating, transfer should be arranged via a 999 ambulance to the nearest acute unit and the neonatal team consulted on the care plan and informed of transfer. Please refer to the All-Wales Criteria for selecting the Mode of Transport (Appendix F). Neonates with abnormal observations should be classified under 'any other complication with baby' and require a 999-emergency transfer, which may involve an emergency crew. Please note: On the front of the chart, it states 'ANY critical (PURPLE) observation = immediate escalation. Consider 2222'. Within a community setting, immediate escalation would be calling 999 and initiating an emergency transfer to an acute unit.
	6.5 Documentation All observations must be documented clearly on the NEWTT2 observations chart, any concerns, actions taken, and outcomes must be clearly documented in the All-Wales Clinical Pathway for Normal Labour or Baby Postnatal Pathway as a deviation from the norm.

7. Equipment

- Coloured copy of the neonatal risk assessment
- Coloured copy of the NEWTT2 observations chart
- Stethoscope
- Thermometer
- +/- Saturations Monitor
- Thermal Warming Aid

8. Ethnicity, Diversity and Inclusion

Powys Teaching Health Board Maternity Services is committed to:

• The elimination of unlawful and unfair discrimination
• The active promotion of equality of opportunities; for women and their families and our workforce
• The protection of the human rights of women and their families and our workforce
• The promotion of inclusive relationships between groups who share protected characteristics and those who don't
• The valuing of the diversity inherent in the communities we serve and in our workforce.

The words woman and women have been used throughout this document as this is the way that the majority of those who are pregnant and having a baby will identify. For the purpose of this document, this term includes girls. It also includes people whose gender identity does not correspond with their birth sex or who may have a non-binary identity. As the care provider it is important to refer to birthing people by whichever name and pronouns they wish to use.

When translation services are required, there is the expectation that a face-to-face translator or digital interpretation services will be provided at every contact. The Language Line App is available to all maternity staff to use for this purpose. Consideration is required with written documents and leaflets to be provided in a woman's preferred or 1st language. Where possible, efforts should be made to assign Welsh speaking families to Welsh speaking staff.

For further support and advice contact PTHB Equality Team: powys.equalityandwelsh@wales.nhs.uk

9. Safeguarding

If any safeguarding concerns or significant risk factors are identified for a unborn child or young person/vulnerable adult, practitioners must follow Wales Safeguarding Procedures (2019) and SGP036 Safeguarding Policy Policies & Written Control Documents - SGP 036 Safeguarding Policy.pdf (sharepoint.com) . Advice and support concerning any safeguarding issue can be sought from PTHB Safeguarding Team via the Safeguarding Hub on 01686 252806 or email PowysTHB.Safeguarding@wales.nhs.uk (Monday-Friday 09:00-17:00, excluding Bank Holidays). Outside of office hours, Local Authority can be contacted on 0345 0544 847 or contact Silver on Call. All registered practitioners should access appropriate safeguarding supervision and training as per guidance. Safeguarding Supervision (sharepoint.com)

10 Monitoring Compliance, Audit & Review

Data will be monitored via the annual record keeping audit. The following questions will be audited:

Was the baby risk assessed?
Were any risk factors identified correctly?
If required, was a chart completed for the baby?
Was the chart fully completed?
Was the score calculated correctly?
Was the correct escalation pathway followed?
Was the baby transferred in for a neonatal review and assessment?

All neonatal transfers will be reviewed within clinical governance and data collected via the transfer of care app.

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

11. Review and Change Control

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

12. References / Bibliography

A BAPM Framework for practice: NEWTT2 – Deterioration of the Newborn (2022)
Framework: NEWTT 2 - Deterioration of the Newborn | British Association of Perinatal Medicine

A BAPM Framework for practice: Identification and Management of Neonatal Hypoglycaemia in full term infants (Birth-72 hours) (2024)
Identification and Management of Neonatal Hypoglycaemia Sept 24.pdf

NICE. Neonatal Infection: Antibiotics for prevention and Treatment (2024). NG195. Neonatal infection: antibiotics for prevention and treatment

All Wales Maternity and Neonatal Network Guidelines. All Wales Guideline for Maternity Transfers from Community and Freestanding Midwifery Units. (2023) wisdom.nhs.wales/all-wales-guidelines/all-wales-guidelines/all-wales-guideline-for-transfers-from-community-and-fmu/

WCH 071. Management of Perinatal Mental Health in Women and Childrens Services (2023) nhswales365.sharepoint.com/sites/POW_comm_policy%26writtencontrol_documents/SharedDocuments/Forms/AllItems.aspx?id=%2Fsites%2FPOW_comm_policy%26writtencontrol_documents%2FShared_Documents%2FPolicies%2C_Procedures_and_other_Written_Control_Documents%2FClinical_Libraries%2FWCH_-_Women_and_Children_Health_Services%2FWCH_071_Management_of_Perinatal_Mental_Health_in_Women%27s_and_Children%27s_Services%2Epdf&parent=%2Fsites%2FPOW_comm_policy%26writtencontrol_documents%2FShared_Documents%2FPolicies%2C_Procedures_and_other_Written_Control_Documents%2FClinical_Libraries%2FWCH_-_Women_and_Children_Health_Services

MAT 080. All Wales Early Onset Sepsis Risk Assessment for Infants Over 34 Weeks Gestation (2022) wisdom.nhs.wales/health-board-guidelines/powys-gudelines/sepsis-early-onset-risk-assessment-for-infants-over-34-weeks-gestation-all-wales-guidance/

MAT 030. All Wales Midwifery-Led Care Guidelines 6th Edition (2022) wisdom.nhs.wales/health-board-guidelines/powys-gudelines/mat-030-all-wales-midwifery-led-care-guidelines/

Appendix A

Table: Monitoring of at-risk groups using NEWTT2 observations as per BAPM Framework of Practice

At risk groups	Recommendation	Frequency
Risks identified intrapartum	**Fetal compromise** (refer to hypoglycaemia) **Meconium-stained amniotic fluid (MSAF)** Newborns delivered in the presence of thick, particulate meconium should be observed for at least 12 hours as detailed in NICE intrapartum care guidance; such infants should be observed on a site with access to a resident neonatal team (4). For all other newborns where meconium is present observe for 2 hours in all care settings.	**NICE intrapartum care guidance (2017)** **At 1 & 2h, then 2 hourly until 12 hours** **At 1 & 2 hours**
Risks associated with mode of delivery	**Elective pre-labour Caesarean section <39 weeks' gestation** Evidence advises against pre-labour Caesarean section prior to 39 weeks' gestation to avoid adverse outcomes. Admission to a neonatal unit with respiratory distress is more likely (1, 20, 21). **Newborns born before arrival of a healthcare professional (BBA)** Rates of neonatal unit admission are increased in this cohort, with the most likely complications including hypothermia, suspected infection and respiratory distress (22, 23)	**Not set by national guidance***
Infants at risk of early onset infection	Newborn infants with infection can deteriorate rapidly or insidiously and often after a period of apparent health. It is recommended that the following newborn infants are monitored using the NEWTT2 tool: **Infants with risk factors** for early-onset infection (2) **Infants with clinical indicators** for early-onset infection (2) **Infants being treated with antibiotics** for early-onset infection **Other infants being treated with antivirals or alternative intravenous antibiotics** for other indications in the newborn period	**NICE neonatal infection guidance for risk factors and clinical indicators** **Not set by national guidance***
Infants at risk of hypoglycaemia	Significant hypoglycaemia can lead to irreversible brain injury. Monitoring newborn infants at risk of developing hypoglycaemia or those with concerning clinical signs, such as a reluctance to feed or any deterioration in feeding behaviour, has the potential to prevent the life-long impact of brain injury. Recommendations made are in line with national documents (1, 9): **In-utero growth restriction** (≤ 2nd centile plotted on gestational age and sex-specific charts) and/or evidence of clinical wasting in keeping with growth-restriction in utero **The need for resuscitation and/or fetal compromise** (IPPV at 5 min of age, low cord pH ≤ 7.1, low Apgar score ≤ 7@5 minutes, Base deficit >/=12.0) **Maternal B-blocker** medication **Maternal diabetes mellitus** **Late preterm infants** (34+0 – 36+6 weeks gestation) **Hypothermia** not improving with initial steps to provide thermal care (see NEWTT2 chart) **Suspected/confirmed early onset infection** **Abnormal feeding behaviour** including not waking for feeds, an ineffective suck, being unsettled and demanding very frequent feeds or a deterioration in feeding (10)	**BAPM Hypoglycaemia Framework for practice**
Infants requiring	Consider observing infants using NEWTT2 who have not been described elsewhere and who are admitted to transitional care as described in	**BAPM Transitional Care Framework**

transitional care	the BAPM Transitional Care framework for practice (8).	
Infants with early jaundice within 24 hours of birth	Early jaundice in the first 24 hours mandates a bilirubin measurement and a clinical assessment. The use of the transcutaneous bilirubinometer is not recommended within 24 hours of birth (5).	**NICE jaundice guidance**
Infants demonstrating clinical signs that warrant additional monitoring	**Grunting respirations** Newborn infants with transitional grunting commencing at birth without any respiratory distress are usually healthy and do not require escalation in care (1). The NEWTT2 observation chart can support assessment of these infants and guide escalation. *Any new grunting* developing following birth is not consistent with transitional grunting and warrants escalation to the neonatal team (2). **Feeding concerns without other risks** Any newborn infant with concerns regarding feeding should be observed using the NEWTT2 tool. Feed refusal or reluctance to feed are symptoms of concern for sepsis and/or hypoglycaemia and should trigger a neonatal team review (6, 10). Bilious vomiting warrants immediate escalation. **Reduced tone or behaviour** Newborn infants with altered behaviour or tone warrant observations using the NEWTT2 tool with escalation as indicated. Poor tone or inactivity can be signs of sepsis or hypoglycaemia and warrant escalation (1, 10). **Elevated lactate identified on cord or neonate blood gas** This can reflect concerns with fetal or neonatal wellbeing. Umbilical cord blood lactate of 4 mmol/L has been shown to predict adverse outcome (need for intubation, hypoxic-ischaemic encephalopathy, meconium aspiration syndrome) in term infants. Such elevated cord or early neonatal blood lactate levels should prompt a neonatal team assessment. A repeat blood lactate measurement in 4 to 6 hrs may be appropriate to ensure a falling or normal blood lactate (24-28).	**Not set by national guidance*** **NICE early onset infection guidance** **NICE early onset infection guidance** **NICE early onset infection guidance** **Not set by national guidance***
Maternal medications potentially impacting on newborn behaviour	**Maternal opiate pain relief <6 hours prior to delivery** Due to the effect on respiratory drive and establishment of feeding, infants warrant monitoring using the NEWTT2 chart. **Maternal drugs of addiction, prescribed or illicit** Use of a neonatal withdrawal scoring chart is indicated as determined by local or regional guidelines **Prescribed maternal SSRIs and SNRIs and other psychotropic medications within the 3rd trimester** Assessment in the first few hours after birth to ensure effective transition and absence of clinically significant persistent pulmonary hypertension of the newborn, and ongoing assessment of infant behaviour including feeding is advised (29).	**Not set by national guidance***

Monitoring frequency

*For monitoring using NEWTT2 beyond 12 hours of age, or for those at risk groups where clear recommendations are not within national guidance, consider performing NEWTT2 observations at 4-hourly intervals. It is not possible to be prescriptive for each infant's unique situation and observations may need to be more or less frequent in order to ensure safe care and provide an appropriate balance between observations of, and interruptions to, the parent and baby. Please refer to your local guidance where present.

Appendix B

Neonatal Risk Assessment Tool

GIG CYMRU NHS WALES | Y Weithrediaeth Executive

Newborn Risk Assessment Tool

(To be completed within 2 hours of birth for all babies)

Mother/Birthing person

Name:
Address:
Hospital Number:
DOB:

Baby

Name:
Address:
Hospital Number:
DOB:

Baby Care Bundle - Assessment and Monitoring for all babies (within 2 hours)	Yes	No	Time (HH:MM)	Comments/ Recommendations
Time of Birth (HH:MM)				
Skin to Skin initiated				
Feeding initiated				
Temperature taken - please state Celsius				

Place of Birth (please tick)

Home		In Transit		Midwifery Led Unit		Obstetric Labour Unit		Obstetric Theatre	

Intrapartum	No	Yes	Comments/Recommendations
Meconium-stained amniotic fluid (MSAF)			
Maternal Thyroid Disease (e.g., hyperthyroidism)			

Birth Mode Risk Identified	No	Yes	Comments/Recommendations
Elective, pre-labour Caesarean birth <39 weeks' - any concerns with clinical assessment following birth?			
General anaesthesia for birth–any concerns with clinical assessment following birth?			
If baby born before arrival of healthcare professional –any concerns with clinical assessment following birth?			
IPPV at 5 mins of age, low cord ph. ≤7.1, low Apgar score ≤ 7@ 5 mins, base deficit >/=12.0			
Umbilical cord blood lactate of ≥4 mmol/L			

Hypoglycaemia risk	No	Yes	Comments/Recommendations
Maternal Betablockers			
Intrauterine growth restriction (≤ 2 centile plotted on gestational age and sex-specific charts)			
Evidence of Macrosomia cause by hyperinsulinism			
Maternal diabetes mellitus			
Hypothermia unresponsive to thermal care (Target temperature range 36.5-37.5 C)			
34+0 – 36+6 weeks gestation			
Feeding concerns-Reluctant, refusal or irritable. Bilious vomiting is abnormal -immediate escalation required (see BFI guidance for breastfed babies)			
Symptomatic of hypoglycaemia			
Other			

Postnatal Concerns	No	Yes	Comments/Recommendations
Early onset Jaundice < 24 hours			
Reduced tone/altered behaviour			
Grunting/respiratory concerns.			
Rhesus status/ Maternal antibody status			
Parental or Health Care Professional concerns			
Any further postnatal concerns identified (following local guidance)			

Early onset of infection risk identified: All Wales policy - SRC Kaiser Permanente	No	Yes
Did the mother have a previous baby who was treated for GBS sepsis. If **YES** contact medical team even if there are no other risk factors		
Other risk factors for infection as per SRC policy (See all Wales SRC Policy)		
Baby requiring antibiotic treatment:		

SRC Kaiser Permanente	Please record
Gestational age (weeks/days)	
Highest maternal intrapartum temperature -From onset of established labour to 1st hour after birth	
Duration of rupture of membranes	
Maternal GBS status (+ve/ -ve / unknown)	
Type of intrapartum antibiotics and time of first dose	
EOS Risk at birth (score)	
Clinical concerns	Well appearing / Equivocal / Clinical concerns

If any risk factors for early onset sepsis identified – contact neonatal team for assessment and follow SRC pathway

This list is not exhaustive, and you should refer to local Health Board and NICE guidance.

Outcome of Risk Assessment	No	Yes
Have any risk factors been identified?		
Does the baby require enhanced monitoring for any other reason?		

Other Maternal Medications	No	Yes
Maternal opiates < 6 hours prior to birth		
Prescribed maternal SSRIs or SNRI's and other psychotropic medications in the 3rd trimester (see All Wales guidance)		
Maternal drugs of addiction – prescribed or illicit		

Commence / Consider

NEWTT2

(Frequency and duration as per local guidance and clinical review)

Additional Comments/ Actions Required/Care Plan:

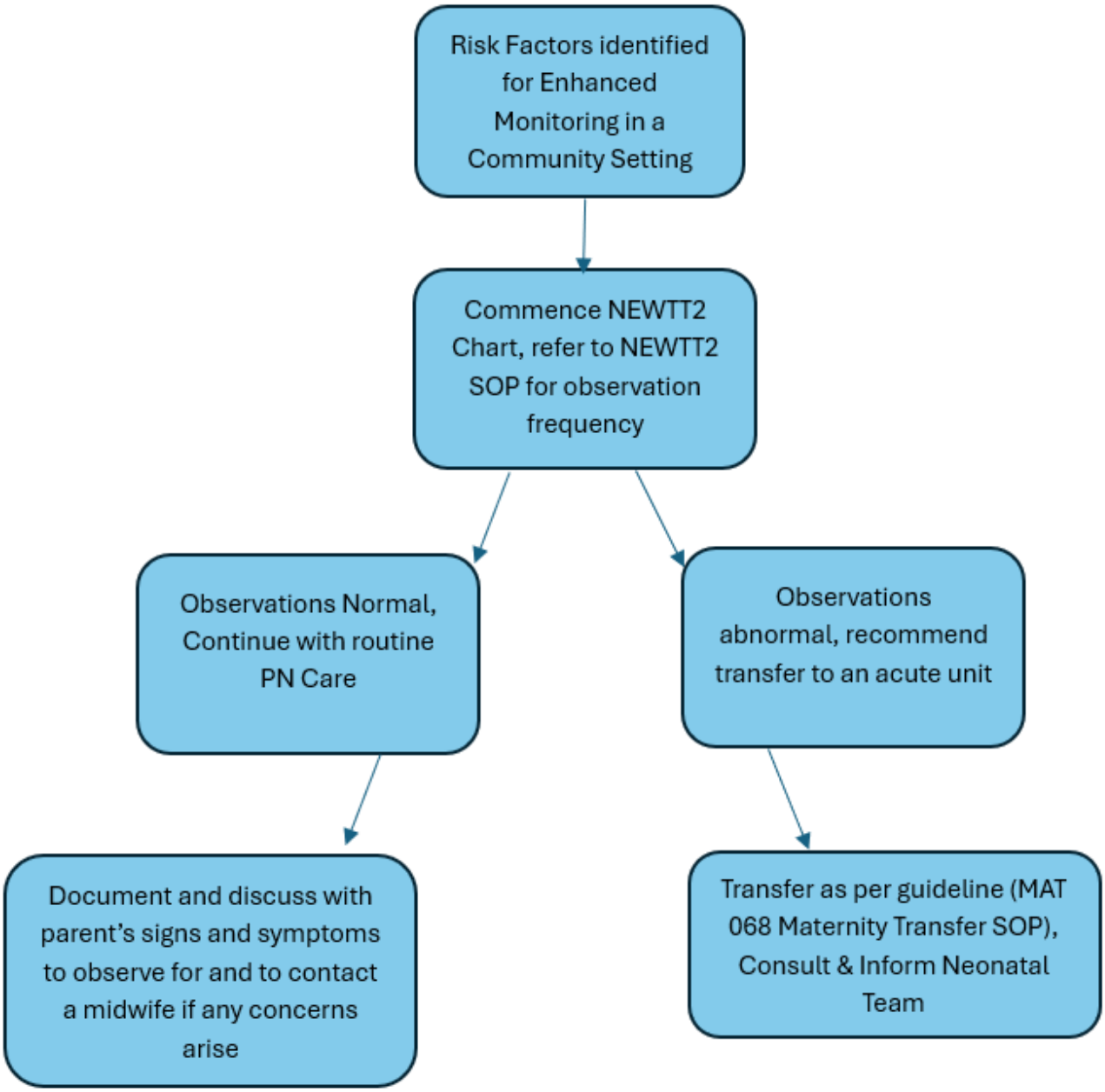
Risk Assessment Completed By	
Name	
Signature	
Job Title	
Date	DD:MM: YY
Time	HH:MM

Further Actions	Yes	No
Have you informed the Neonatal/Paediatric Team?		
Is there a clearly documented plan in the maternal/ infants notes		
Has the risk assessment been transferred to Infants notes?		
Have you followed local escalation and/or transfer guidance?		
Have you updated the parents?		

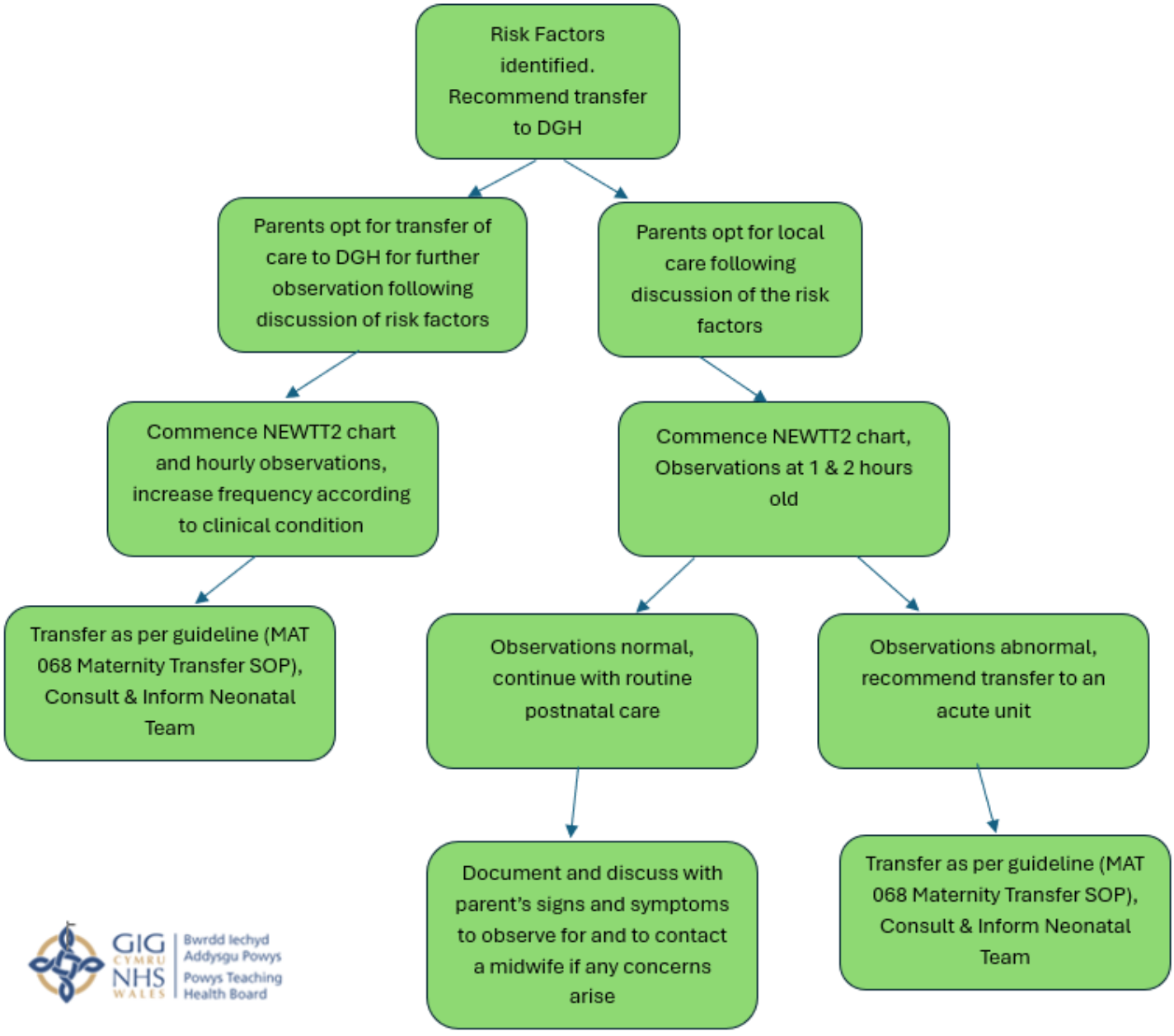
Appendix C

Care Pathway Flow Charts

Enhanced Monitoring in Powys Flow Chart

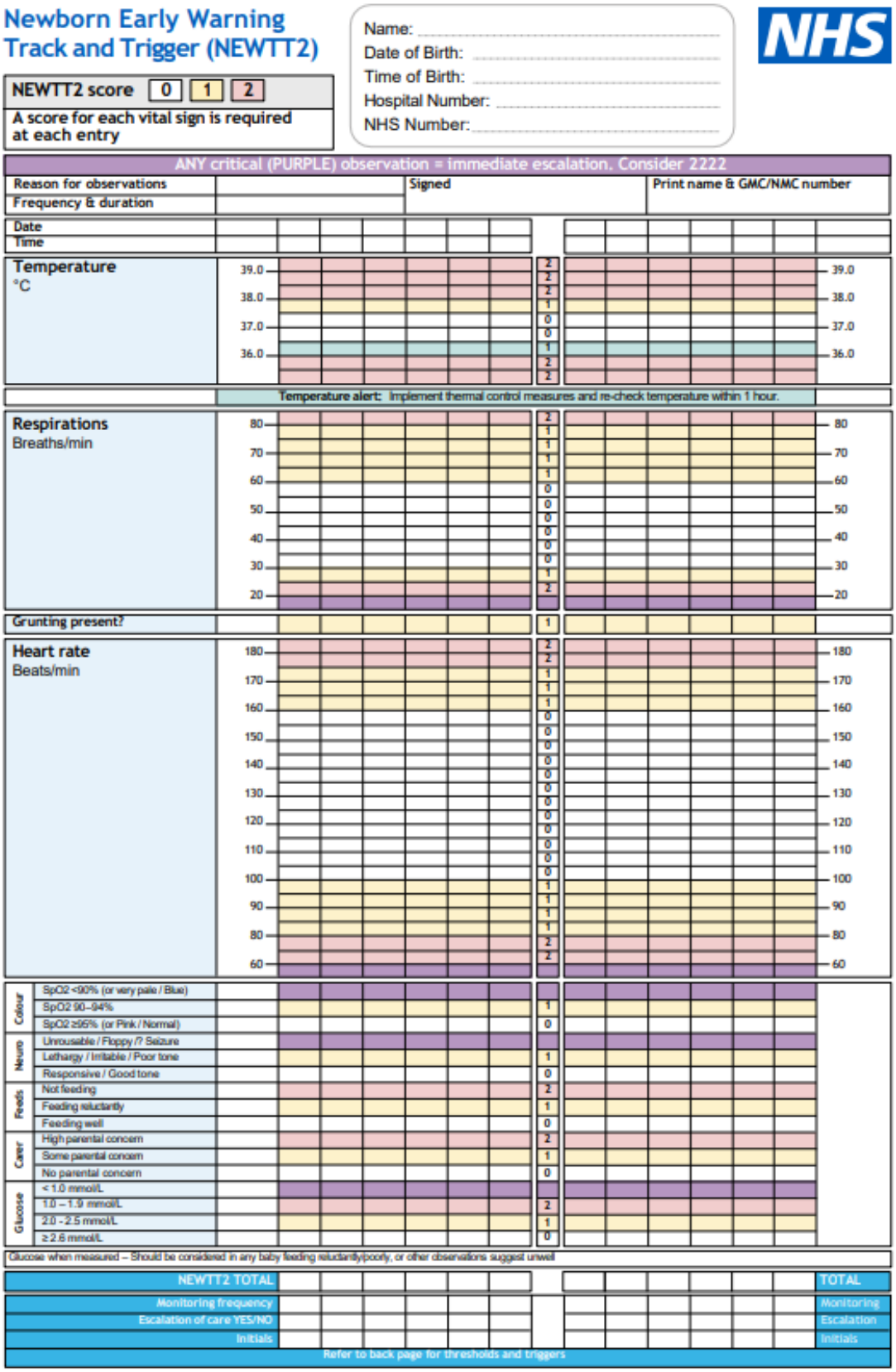


Transfer to DGH Flow Chart



Appendix D

NEWTT2 Observation Chart



Newborn Early Warning Track and Trigger (NEWTT2)

Name:
Date of Birth:
Time of Birth:
Hospital Number:
NHS Number:

NHS

NEWTT2 score 0 1 2

A score for each vital sign is required at each entry

ANY critical (PURPLE) observation = immediate escalation. Consider 2222

Reason for observations
Frequency & duration
Signed
Print name & GMC/NMC number

Date
Time

Temperature °C
39.0
38.0
37.0
36.0

Temperature alert: Implement thermal control measures and re-check temperature within 1 hour.

Respirations Breaths/min
80
70
60
50
40
30
20

Grunting present?

Heart rate Beats/min
180
170
160
150
140
130
120
110
100
90
80
60

Colour
SpO2 <90% (or very pale / Blue)
SpO2 90–94%
SpO2 ≥95% (or Pink / Normal)

Neuro
Unrousable / Floppy /? Seizure
Lethargy / Irritable / Poor tone
Responsive / Good tone

Feeds
Not feeding
Feeding reluctantly
Feeding well

Carer
High parental concern
Some parental concern
No parental concern

Glucose
< 1.0 mmol/L
1.0 – 1.9 mmol/L
2.0 - 2.5 mmol/L
≥ 2.6 mmol/L

Glucose when measured – Should be considered in any baby feeding reluctantly/poorly, or other observations suggest unwell

NEWTT2 TOTAL
TOTAL
Monitoring frequency
Monitoring
Escalation of care YES/NO
Escalation
Initials
Initials

Refer to back page for thresholds and triggers

Newborn Early Warning Track and Trigger (NEWTT2)

How to use the NEWTT2 track and trigger tool to determine the level and timelines of escalation
Calculate and document the total NEWTT2 score for a set of observations by adding together the individual scores (0-2) for every individual observation entered in a single column of the chart
Check the total against the NEWTT2 escalation tool and follow instructions in the escalation table for that set of observations
Healthcare professional concern can initiate a neonatal review at any time regardless of the zone colour of an observation or total score
For a score of zero continue routine care

Thresholds and Triggers

- The grade of team member indicated as the primary contact for each level of clinical concern is a guide and may need to be adapted depending on the local skill mix within that care setting or organisation

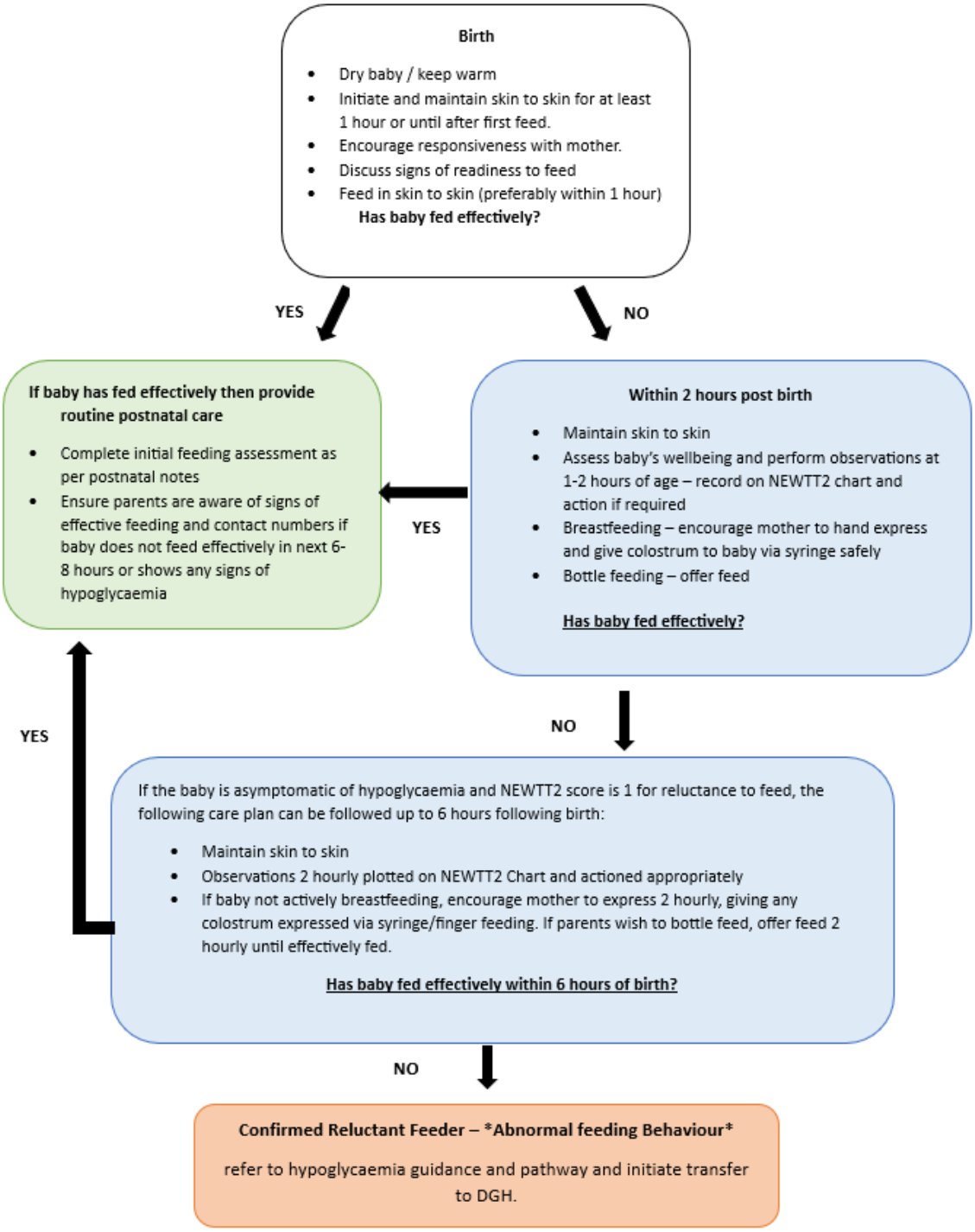
	Score 1	Score 2-3	Score 4-5	Score ≥6	Any critical observation
	Inform shift leader - Consider SpO_2 +/- blood glucose if not done already				
Primary escalation and response (use SBAR framework)	Repeat observations in <1 hour	Refer to paediatric/ neonatal Tier 1 doctor/ANNP	Refer to paediatric/ neonatal Tier 1 doctor/ANNP	Refer to paediatric/ neonatal Tier 1 doctor/ANNP. The Tier 2 doctor/ ANNP should be informed	Refer to paediatric/ neonatal Tier 1 doctor/ANNP AND Tier 2 doctor/ANNP
Review timings	Escalate as for score 2-3 if the repeat score remains 1	Request a review within 1 hour	Request a review within 15 minutes	Request immediate review	Immediate review and consider neonatal emergency call (2222)
Take steps to manage/address any obvious concerns/problems					
Secondary contact	**If no review within expected time frame, escalate to Tier 2 doctor/ANNP and inform shift leader**			**If no review within expected time frame, escalate to consultant and inform shift leader**	
	If still no response within required time frame, escalate to consultant				

- When the primary team member(s) contacted is unable to attend or fails to attend within the expected time for the level of clinical concern, escalation to the secondary contact is required
- The secondary contact would be expected to attend within the initial review timing, calculated from the documented time of primary escalation.

SBAR Handover	
S	**Situation**
B	**Background**
A	**Assessment**
R	**Recommendation**
Document all actions and discussions in patient record	

Appendix E

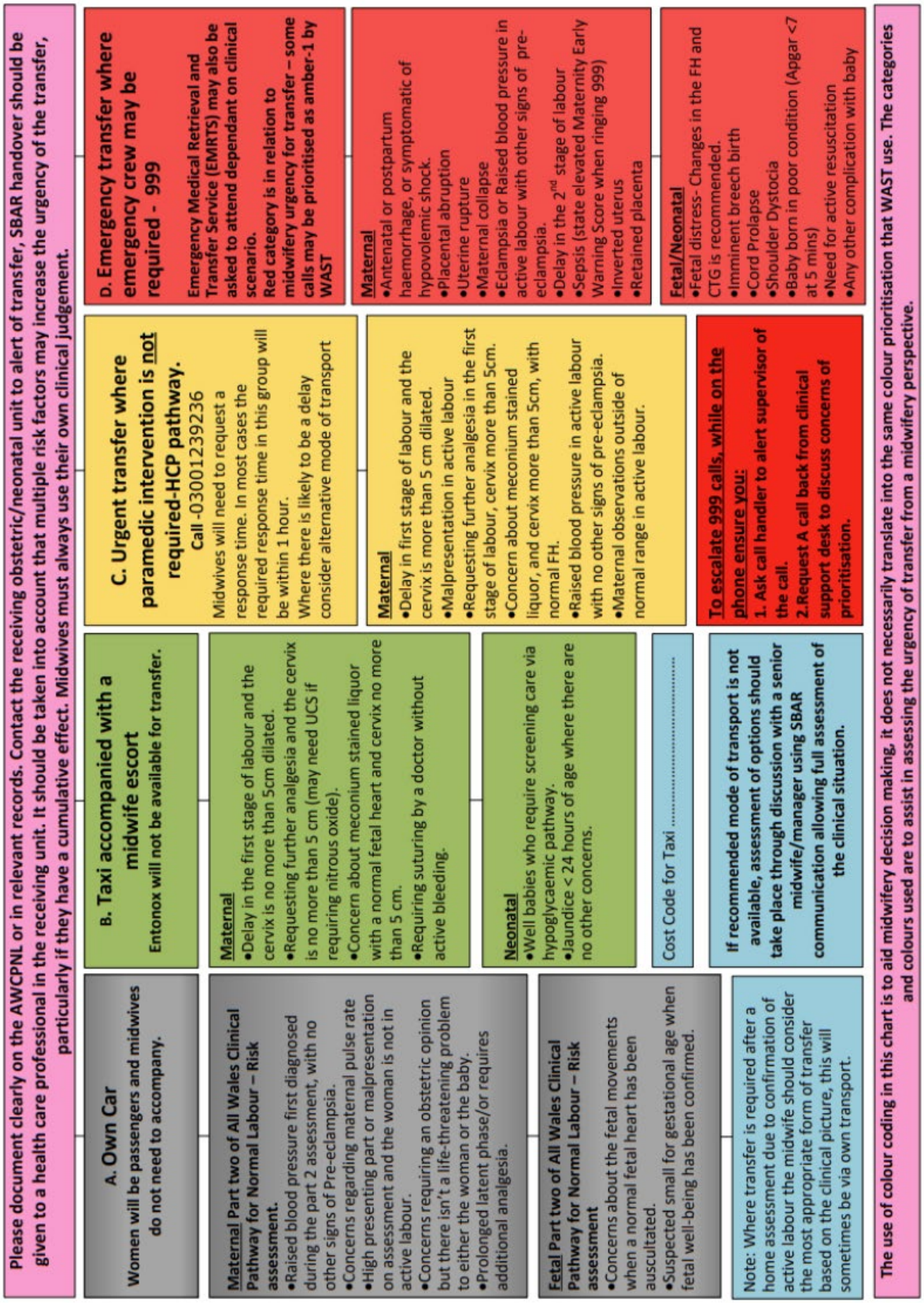
PTHB Pathway for the term infant reluctant to feed at birth (Adapted from BAPM, 2023)



*Signs of reluctant feeding include no feeding cues, not waking to feed, not latching, not sucking effectively, and appearing unsettled. NB: A baby who is eager to feed but needs support is not necessarily a reluctant feeder, however midwives should assess whether a baby is effectively or ineffectively feeding.

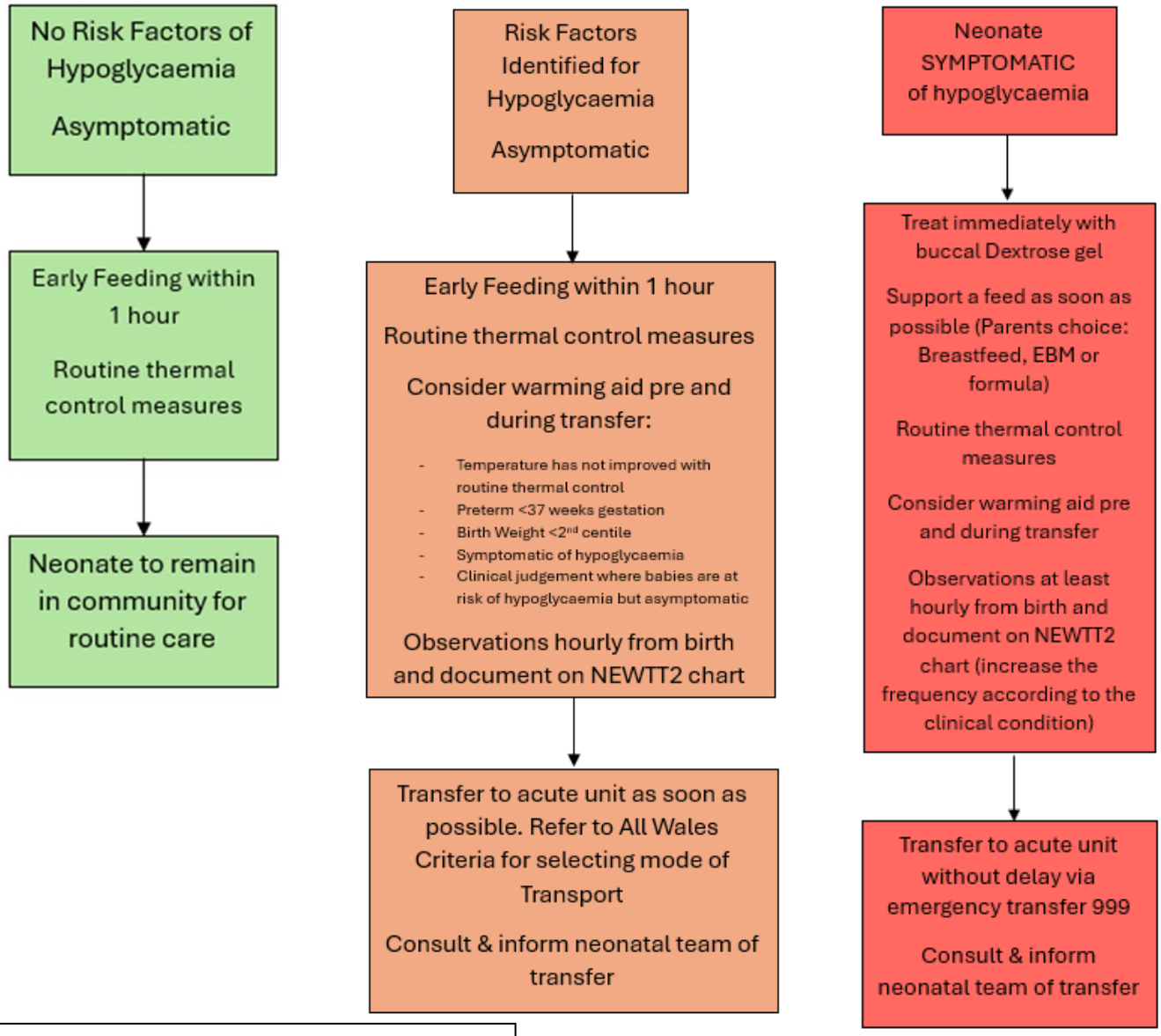
Appendix F

All Wales Criteria for Selecting Mode of Transport



Appendix G

Hypoglycaemia in Community Flow Chart



Risk factors for Hypoglycaemia

- Maternal beta blockers
- Birth weight <2nd Centile
- Infants of diabetic mothers
- Hypothermia unresponsive to thermal care
- Preterm <37 weeks
- Low APGAR Score ≤ 7 @ 5 minutes
- Feeding concerns – reluctant, refusal or irritable
- Suspected early onset infection

Symptoms of Hypoglycaemia

- Lethargy
- High pitched cry
- Abnormal feeding behaviour
- Altered level of consciousness
- Hypotonia
- Seizures
- Hypothermia < 36 degrees
- Cyanosis
- Apnoea