The Neonatal Early Warning Track and Trigger (NEWTT2) Tool Guideline

Guideline information

Guideline number: 1380

Classification: Clinical

Supersedes: N/A (New Guideline)

Clinical documents only:
Local Safety Standard for Invasive Procedures (LOCSSIP) reference: N/A

National Safety Standards for Invasive Procedures (NatSSIPs) standards: N/A

Version number: 1.1

Date of Equality Impact Assessment:
10/06/2025

Approval information

Approved by: Maternity Working Document Control Group

Date of approval:
07/10/2025

Date made active:
15/10/2025

Review date:
07/10/2028

Summary of document:
This guideline is support identifying neonates in the at-risk of deterioration groups and in the use of the updated Newborn Early Warning Track and Trigger (NEWTT2) chart aligning to current recommendations for newborn care and acknowledging feedback from healthcare professional.

Scope:
This guideline is for all health care professionals who provide care for the newborn baby.

The guidance uses the term “woman” (pronouns she or her) to describe individuals whose sex assigned at birth was female, whether they identify as female, male or non-binary. It is important to acknowledge it is not only people who identify as women for whom it is necessary to access women’s health and reproductive services. Therefore, this should include people who do not identify themselves as women but who are pregnant or have recently given birth. Obstetric and midwifery services and delivery of care must therefore be appropriate, inclusive and sensitive to the needs of those individuals whose gender identity does not align with the sex that they were assigned at birth.

To be read in conjunction with:
Neonatal infection: antibiotics for prevention and treatment – opens in new tab
1377 - Maternity Newborn Thermoregulation Guideline – opens in new tab
1193 - Thermoregulation in Neonates Guideline – opens in new tab
645 - Management of PPROM (Premature Prelabour Rupture of the Membranes) Guideline – opens in new tab
1046 - Collaborative working, Women attending with a Doula Guideline – opens in new tab
1194 Management of Jaundice in Neonates Guideline – opens in new tab

Patient information:
1265 - Supporting term babies and neonates who are reluctant to feed Guideline – opens in new tab

Owning group:
Maternity Guideline, Audit and Research Group.
07/10/2025

Executive Director job title:
Andrew Carruthers, Chief Operating Officer

Reviews and updates:
Version 1 – 07.10.2025

Contents

Scope
This guideline is for all health care professionals who provide care for the newborn baby.

Aim
The aim of this guideline is support identifying neonates in the at-risk of deterioration groups and in the use of the updated Newborn Early Warning Track and Trigger (NEWTT2) chart aligning to current recommendations for newborn care and acknowledging feedback from healthcare professional

Objectives
The aim of the guideline will be achieved by:

- Understanding of the NEWTT2 changes and its role as a tool within the PIER framework
- Implementation of Newborn Risk Assessment tool
- How the NEWTT2 chart works
- How to escalate concerns

Introduction
The Newborn Early Warning Tracking and trigger (NEWTT2) tool is designed for use in postnatal care settings including labour wards, postnatal wards, Special Care Baby Unit and transitional care units. Failure in the management of deterioration has been highlighted in recent reports.

A new neonatal tool has been developed to replace the previously used range of different NEWTT tools to identify and manage deterioration in a consistent way. It is embedded as a tool within the PIER framework.

Note: Babies cared for in the neonatal High Dependency Unit (HDU) observation chart is used.

What is the PIER Framework?
To ensure early recognition and management of deterioration in a consistent way the PIER framework focuses around the principles of:

- Planning, preparation, and prevention
- Identification
- Escalation
- Response

The framework consists of various" tools" to achieve this and NEWTT2 is one of these tools.

Each element of PIER can be related to NEWTT2.

P: Planning, preparation and prevention ensure that all newborn infants at risk of deterioration after birth are identified, have their risks clearly communicated and that actions are taken to minimise these and intervene where required.

I: Identification of any change in their physiological parameters, clinical examination, or behaviour, as well as any concerns raised by their parents or caregivers facilitates early escalation for intervention where indicated.

E: Escalation ensures appropriate involvement of the multidisciplinary team in a timely manner that is standardised.

R: Response tools promote a consistent approach by providing a data set for multidisciplinary team assessment and management of a neonate with triggers on the NEWTT2 chart.

Use of the Neonatal Risk Assessment Tool for ALL Babies

The Newborn Risk Assessment tool must be completed within 2 hours of birth of all babies (See Appendix 3)

The assessment will identify any of the babies that require NEWTT2 in addition to identifying presence of risk factors.

When to use the NEWTT2 chart

The NEWTT2 chart should be used for monitoring any baby that is in the "At Risk Group" detailed below:

At Risk Groups requiring Monitoring using NEWTT2 observations

Risk identified Intrapartum • Maternal Thyroid Disease (e.g. Hyperthyroidism /Graves' disease) • Meconium-Stained Amniotic Fluid (MSAF) (See Appendix 5)
Birth Mode risk identified • Planned (pre- labour) Caesarean Birth <39+0 weeks (with clinical concerns after birth) • General Anaesthesia for birth (with concerns on clinical assessment after birth) • "Free birth or" Baby "born before arrival" of health care professional (with concerns on clinical assessment following birth) • Intermittent Positive Pressure Ventilation (IPPV) at 5 mins of age/ low cord ph≤7.1/ low APGAR score ≤7 @5 minutes / base deficit ≥12.0

Hypoglycaemia Risk • Maternal Beta blockers i.e. Labetalol, Propranolol, Sotalol and Atenolol • Fetal growth restriction (≤2 centile plotted on GROW calculator) • Evidence of Macrosomia i.e. weight birth centile>97th centile on GROW calculator • Maternal Diabetes Mellitus, i.e. Type 1, Type 2 and Gestational Diabetes. • Hypothermia which is unresponsive to restorative thermal control measures care (Target temperature range 36.5-37.5) • 34+0-36+6 gestation • Feeding Concerns- reluctant or refusal • Bilious vomiting is abnormal – immediate escalation required • Other
Postnatal concerns • Early onset Jaundice <24 hours • Reduced tone/ altered behaviour • Grunting, either persistent or new onset • Maternal antibody status • Paternal or Health Care Professionals concerns • Any other postnatal concerns identified
Early Onset of Sepsis Risk Identified: All Wales SRC pathway • Infants with risk factors for early onset infection. • Infants with clinical indications for early onset infection • Infants being treated with antibiotics for early onset infection • SEE RISK form Appendix 4
Transitional Care All babies cared for on transitional care
Maternal Medications (See Appendix 5 for more information) Maternal opiate pain relief <6 hours before birth. Prescribed maternal SSRIs or SNRI's

What about babies not in the "at risk group"?

Babies who do not need observations on a NEWTT2 chart should have routine postnatal monitoring.

Appendix 1 details BAPM recommendations of assessment and monitoring for every newborn baby which includes during skin-to-skin contact, breast feeding and jaundice.

Jaundice

All babies should be examined for jaundice (icterus) at every contact, particularly in first 72 hours. This should include an examination of gums, cornea and skin for icterus.

How does the NEWTT2 chart work?

Refer to Appendix 2 and Appendix 3 for NEWTT2 chart.

Using the All-Wales NEWTT2 chart the recognition of even small changes in behaviours and observations combined will be seen earlier, alerting clinicians to changes in the clinical condition of a neonate i.e. a graduated escalation process depending on the total score, rather than waiting for a later, single obvious change. It also recognises when immediate review or action.

The chart details physiological variables, temperature, respirations, presence of grunting and heart rate whilst feeding, neurological assessments and blood glucose score separately.

The total score informs the escalation response including who is responsible and the timing of review and supports further escalation.

Colour coded chart

The NEWTT2 tool incorporates a colour coded chart to monitor vital signs and behaviours including a scoring system to aid in quicker recognition, appropriate escalation of, and response to deterioration.

The chart is used to “track” the behaviours and clinical observations of those neonates' requiring observations over a period of time to identify trends. When the observations fall outside the normal range then actions are triggered based on the extent of the deviation.

The chart is colour coded “white, yellow, red, purple and blue” and defines the extent of the change and guidance on the actions to be taken, if any.

Numerical values are assigned to white, yellow and red. The purple and blue coloured trigger boxes require immediate action.

Colour Code of scores on NEWTT2 chart	Score
White	Scores 0
Yellow- Amber	Scores 1
Pink- Red	Scores 2

Observations taken outside of normal ranges give a total 'numerical score' and this will indicate that the neonate remains in the 'safe' zone or will be able to indicate emerging instability/deterioration over time, prompting earlier recognition, escalation, and review.

An advancing 'white/yellow/red' scale defines the extent of the change, and which actions should be taken should observations fall within these alert zones.

Purple	Critical observation, baby needs **immediate** review. Consider 2222 call
Blue	Temperature Alert, mild hypothermia. Baby needs thermal care measures prior to potential need for escalation

Guidance when performing the clinical assessment and completing the NEWTT2 tool

Please mark boxes on the chart with a tick, cross or shaded black dot, other than for oxygen saturations and blood glucose where the measured value should be written in the appropriate box.

Temperature (per Axilla)

For a low temperature/hypothermia implement thermal control measures: ensure baby is dry, wrapped in warm dry towels/blankets or dressed in dry clothes, place a hat or cover the head sparing the face, use a hot-cot or incubator. Skin- to-skin with mother, covering the infant with warm dry towels/blankets including the head while continuing recommended observations should be considered unless mother is hypothermic.

For a high temperature/hyperthermia remove any excess clothing or towels/blankets and note whether mother is febrile

- **Respiration**
  Count respiratory efforts for ≥ 60 seconds to assess breathing rate.

- **Grunting**
  - **Transitional grunting** present at birth and without other signs of respiratory distress may be an isolated finding and reflects the infant's adaptive responses to clearing persistent lung fluid following birth. It often resolves spontaneously.
  - **New onset grunting at any age** or **grunting in association with signs of respiratory distress** such as tachypnoea, nasal flaring, intercostal and subcostal recessions, is not consistent with adaptive transitional grunting and warrants escalation.

- **Heart rate**
  Count heart rate using a stethoscope for ≥ 60 seconds or by using pulse oximetry

- **Neurology**
  Infants with very poor tone either awake or asleep, who are unarousable or display possible seizures are likely to have poor airway control or serious illness and require immediate assistance.

- **Feeds**
  Signs of reluctant feeding include not waking for feeds, not latching, not sucking effectively, and appearing unsettled. Feeding support should be provided to reluctant feeders. **Blood glucose** should be measured if reluctant / non-effective feeding follows a period of effective feeding or if there are any abnormal clinical signs in addition to reluctant feeding.

- **Carer**
  Perceptions of high concern or some concern will likely vary between parents. Score for the level of actual parent(s)' concern. Use active enquiry e.g. "How is your baby different from when we last assessed them?"

- **Glucose**
  Follow the British Association of Perinatal Medicine Framework for Practice regarding which babies warrant glucose testing and when: a glucose measurement may not be required at every set of observations, and a value 2.0-2.5mmol/l does not necessarily need to trigger a repeat as the threshold is dependent on gestation. Measure when feeding ineffectively, where excessively quiet/lethargic, irritable, or other observations suggest illness.

- **Colour and measurement of oxygen saturation**

  Cyanosis is unreliably detected by visual inspection

- **If there are concerns that any infant is cyanosed (blue lips or tongue, blue fingernails, blue face/body in lighter skinned babies) escalate immediately.**

Pallor due to anaemia is often associated with normal saturations despite poor oxygen delivery because of reduced oxygen carrying capacity (reduced red cells).

Important: If the infant is pale, as assessed using face/body colour in lighter skinned babies, and with more difficulty in darker skin tones (observe palms for pallor) always escalate regardless of the pulse oximetry saturation readings.

- **Medication in Labour**

For specific guidance on observation following opiate administration in labour see Appendix 5.

Post ductal pulse oximetry screening

All babies who are being monitored by NEWTT2 **must** have **post ductal pulse oximetry screening** at 1 hour, 2 hours and 12 hours post birth and then repeated 12 hourly until NEWTT2 is discontinued. (See Appendix 6) Plot on NEWTT2 chart.

A **paired** pulse oximetry pre (right-hand) and post (either foot) ductal saturation measurements is also measured during the Newborn infant physical examination (NIPEC) within 72hours of birth.

Completing documentation on the NEWTT2 chart

Complete all sections

- Read along measurements to identify score given. Total the NEWTT2 score for every set of observations.
- If any measurements plot in the **purple** boxes **escalate immediately**
- Chart Header
  - On the chart header ensure that the reason and frequency of observations is completed by the clinician who initiates NEWTT2. The clinician is also required to sign, print their name and record their registration number.
  - Date and time for each set of observations
- Temperature
  - Plot the temperature as an X and If the temperature plots in the blue box initiate restorative thermal care and re-measure in 1 hour.
- Respiration and Grunting
  - Use an X to plot resp. rate and if grunting present
- Heart Rate
  - Plot as an X
- Colour, sats, neuro, feeds, carer and glucose.
  Using X's, plot the colour, neurology, feeding behaviour, parental concern and glucose (if indicated **please remember not all babies require glucose monitoring**). SpO2 will require the percentage written.
- Parental Concerns
  - Important: Ask parents at each set of observations if they have any worries/concerns about their baby and those concerns need to be taken seriously. Use question such as:
    "Has your baby changed since I last saw you?"
    "How does your baby seem to you?"
  - Record identified level of concern in appropriate box in the carer section on chart.

- Chart Footer
  - In the footer total the NEWTT2 score for each set of observations.
  - Document the frequency of next set of observations, whether escalation is indicated and initials.

Scoring plots situated on the line

For any observations that plot on the line, score them in the box **ABOVE the line.**

Escalation using the Threshold and Triggers table

Threshold and Triggers

After calculating the total NEWTT2 score for a set of observations refer to the NEWTT2 Threshold and Trigger table, within the chart.

This guides clinicians to escalate their concerns in a graduated manner, as well as encompassing who the escalation is directed towards and appropriate timely responses.

NOTE: **Healthcare professional concern can initiate a review at any time regardless of the zone of colour or total score.**

The thresholds are identified by the total numerical score (i.e. the level of concern) and whether any critical observation is present (See table below and Appendix 3)

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)

Note When deciding whether SpO2 and blood glucose is required when the score is low e.g. 1, please consider reason for scoring. For example, a temperature of 36.4 at first reading in isolation scores 1 and in absence of other concerns may not require blood glucose. In that particular case restorative thermal care would be implemented and temperature rechecked after an hour (as per guidelines, 1377 Maternity Thermoregulation and 1193 Thermoregulation in Neonates).

If Score was 3+ SpO2 and blood glucose would be requested by doctor.

Escalation

- There is a graduated permission to escalate, regardless of your banding or grade as a healthcare professional, woman, or family member

Escalation is about:

- knowing when to escalate
- who to escalate to
- when to refer to someone else if they do not respond within the threshold and triggers timeframe
- Knowing how to escalate clinical concerns or escalate conflict of clinical concerns. (Maternity escalation of clinical concerns/ Escalation of conflict of clinical concerns) - opens in new tab.

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.		

(See table above and Appendix 3)

Remember: Escalate if any contact does not respond within the time frame and the second contact is expected to attend within the initial review timing, which is taken from the documented time of the primary escalation (i.e. when Midwife or nurse had asked for review)

Standardising safety language

Understand the seniority of review required

- TIER 1 (Senior house officer (SHO), Speciality 1 or 2 doctor)
- TIER 2 (Registrar, speciality trainee 3+ or equivalent doctor)

Communication, use simple, recognised, safety critical language. Include whether infant is well or unwell at the point a review is triggered.

Use the SBAR handover and document contemporaneously all actions and discussions in the patient notes.

Shared Responsibility

The NEWTT2 tool promotes shared responsibility between the parents and the healthcare professionals.

Ensure that the parents are updated after any review, and that “any parental concern” is recognised and documented on the NEWTT2 tool as an abnormal observation.

REMEMBER!

Healthcare professional concerned can initiate a review/ escalation at any time regardless of the total NEWTT2 score.

References

Thangaratinam S et al (2007) Accuracy of pulse oximetry in screening for congenital heart disease in asymptomatic newborns: a systematic review. Arch Dis Child Fetal Neonatal Ed, 92: F176-180.

Thangaratinam S et al (2012) Pulse oximetry screening for critical congenital heart defects in asymptomatic newborn babies: a systematic review and meta-analysis. The Lancet, 379: 2459-64.

Granelli A et al (2009) Impact of pulse oximetry screening on the detection of duct dependent congenital heart disease: a Swedish prospective screening study in 39 821 newborns. British Medical Journal; 338: a3037.. Wren C, Richmond S, Donaldson L (2000) Temporal variability in the birth prevalence of cardiovascular malformations. Heart; 83: 414-419.

Wren C, Richmond S, Donaldson L (1999) Presentation of congenital heart disease in infancy: implications for routine examination. Arch Dis Child Fetal Neonatal Ed; 80: F49-53

National Institute of Clinical Excellence (NICE) Jaundice in newborn babies under 28 days . CG98, updated October 2023

https://www.nice.org.uk/guidance/cg98

NICE Treatment threshold graphs (Gestation specific)

https://www.nice.org.uk/guidance/cg98/resources

1377 Maternity Newborn Thermoregulation Guideline - opens in new tab

1193 Thermoregulation in Neonates Guideline - opens in new tab

Appendix 1 - Assessments and monitoring for all newborn babies

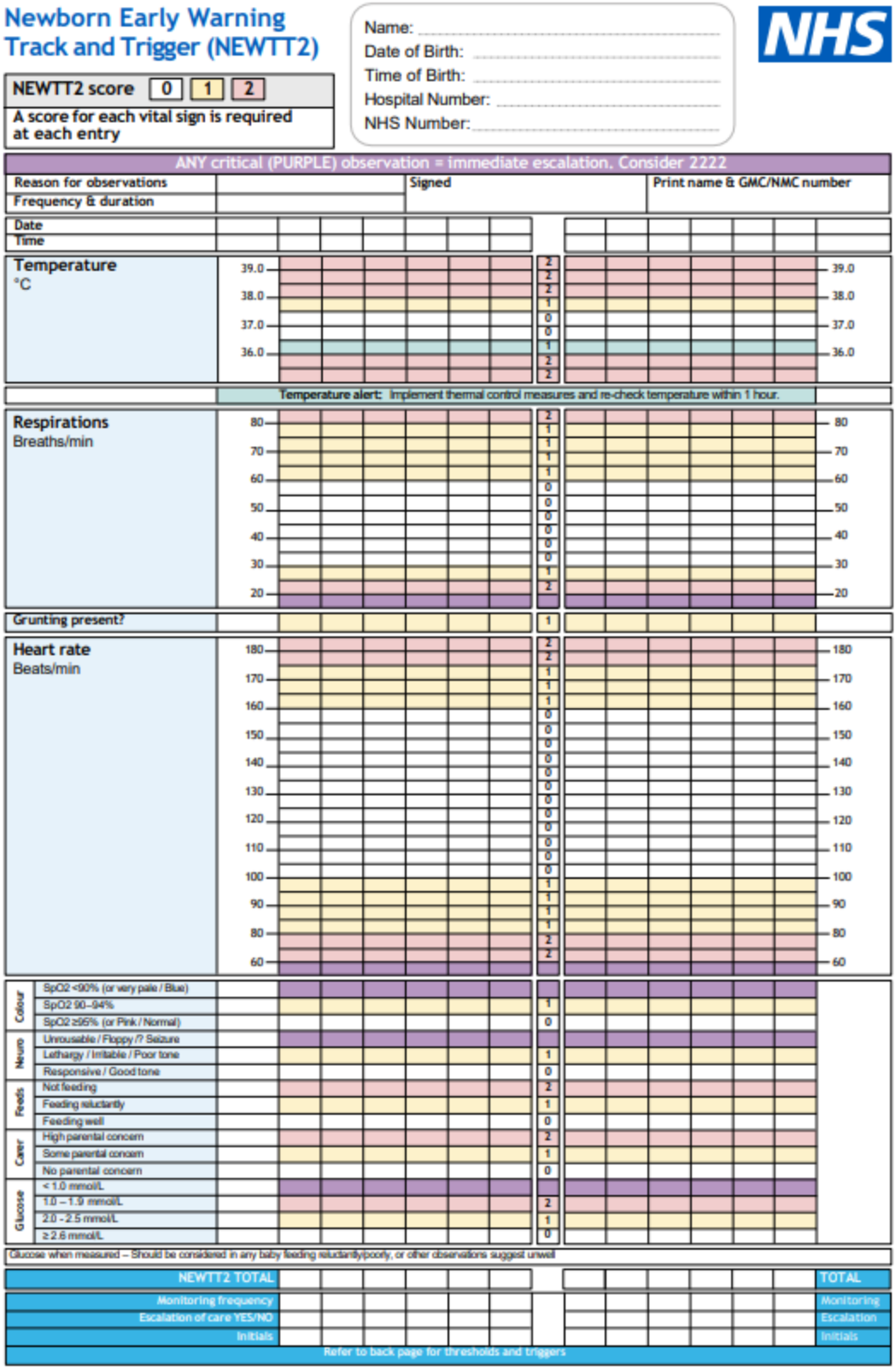
A BAPM Framework for Practice

Table 1: Assessments and monitoring recommended for every newborn baby

	Recommendation	Frequency
Immediately following birth and within the first hour of life	**Follow recommendations for recording observations** given within national guidance (3, 4, 18) **Identify any risk factors** that require observations or intervention within the first hour of life such as management of early onset bacterial infection **Perform the initial midwifery examination** to detect any major physical abnormality and identify any problems that require referral	**NICE postnatal care, NICE intrapartum care and RC (UK) NLS guidance** **Prior to and following birth to enable timely intervention** **Once**
During skin-to-skin contact *Skin-to-skin contact is recommended for newborn infants within the first hour to promote thermoregulation, colonisation with maternal flora and biological nurturing*	For a significant minority of infants positioning for skin-to-skin contact may have contributed to sudden unexpected postnatal collapse and serious adverse outcome (7). The level of risk for sudden collapse during skin-to-skin contact is influenced by maternal body mass index, antenatal use of opiate medication, sedation and staff focus on other tasks. **Airway and breathing** - check the baby's position is such that a clear airway is maintained – observe respiratory rate and chest movement. Listen for unusual breathing sounds or absence of noise from the baby. **Colour** – the baby should be assessed by looking at the whole of the baby's body as the limbs can often be discoloured first. Subtle changes to colour indicate changes in the baby's condition. **Tone** – the baby should have a good tone and not be limp or unresponsive **Temperature** – ensure the baby is kept warm during skin contact	**Throughout every skin-to-skin contact**
1-2 hour of age	**Record body temperature** soon after the first hour (3). Target the temperature range 36.5-37.5ºC.	**Until target reached**
Feeding and excretion	**Follow UNICEF guidance** providing information to assess infant feeding including frequency of feeds, wet and dirty nappies (19). Newborn infants considered suitable for early discharge should have a risk assessment completed by the maternity team that incorporates feeding establishment (3, 6). If there are any concerns regarding feeding, observations using the NEWTT2 tool are recommended with escalation for review as indicated. Bilious vomiting warrants immediate escalation.	**Continuous assessment with parent**
Jaundice	**Examine* all infants for jaundice** at every opportunity especially within the first 72 hours; if jaundiced monitor bilirubin and use gestational age charts to guide treatment (5). At risk groups include gestation <38 weeks, previous sibling requiring treatment, male, low birth weight, multiple birth and Asian ethnicity (1, 5). *skin, sclera, gums	At every contact

NICE: National Institute Clinical Excellence; RC (UK): Resuscitation Council UK ; HSIB: Healthcare Safety Investigation Branch; UNICEF: United Nations Children's Fund; ATAIN: Avoiding Term Admissions Into Neonatal Units

Appendix 2 - NEWTT2 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

Appendix 3 - NEWTT2 Threshold and Triggers/Escalation

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 4 - Neonatal Risk Assessment Tool for all babies within 2 hours of birth

Bwrdd Iechyd Prifysgol Hywel Dda University Health Board

Newborn Risk Assessment Tool

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

Mother/Birthing person	Baby
Name:	Name:
Address:	Address:
Hospital Number:	Hospital Number:
DOB:	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 (~~please~~ discuss with paediatrician)			
Maternal diabetes mellitus (Type 1, Type 2, & GDM)			
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) Please also refer to the 'Reluctant feeder Guideline'			
Symptomatic of hypoglycaemia			

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 5 - Early Onset Sepsis (EOS) Risk Assessment Form.

GIG CYMRU NHS WALES | Bwrdd Iechyd Prifysgol Hywel Dda University Health Board

Neonatal Early Onset Sepsis Risk Assessment to be completed for all Consultant Led Babies

Mother	Baby
Addressograph	Addressograph
Hospital Number	Hospital Number
DOB	

Baby's Date of Birth	Time of birth

Did the mother have a previous baby who developed and was treated for GBS sepsis? If YES, call

The midwife **should contact the neonatal team if any ONE criterion of the** following in the two boxes apply either at birth or during routine examination and for any reason in infants ≥ 34 weeks gestation.

Risk factors please circle each bullet as it applies

- •Rupture of membranes>24 hours
- •Preterm <37 weeks gestation
- •Highest maternal pyrexia in labour≥38^{0}C
- •Maternal GBS in current pregnancy
- •Maternal antibodies (other than prophylaxis for CB)

OR

- •FHR>160bpm
- •Baby Temp <36.5^0 C or ≥38^{0}C
- •RR >60/min or apnoea
- •Grunting, nasal flaring or recession Oxygen saturating <95%
- •Altered responsiveness, persistent hypotonia or seizures
- •Early jaundice within 24 hours of birth

Review by neonatal team:
Complete table below or add Sepsis Risk Calculator (SRC) Sticker

Gestational Age (weeks and days):
Highest Maternal Temp(^{0}C): Date:
ROM (hours rounded up by 0.5hr): Time:
Maternal GBS status:
Intrapartum Antibiotics:

Sepsis Risk Calculator Score at birth=

Clinical Examination		Recommendation (Draw from guideline table)
Well appearance		
Equivocal		
Clinical Illness		

Final decision to start antibiotics based on NICE/ Sepsis calculator/ Symptomatic

Other (specify _____If clinically unwell, main symptom_____ Age (in hours) at decision to start antibiotics_____ Age (in hours) when first dose administered_____

PLEASE FILE IN NEONATAL NOTES **Version1.2025**

Appendix 6 - Specific risk factors frequency and duration of clinical observation

Meconium

Table 1 Classification of Meconium	
Significant:	Dark green or black amniotic fluid that is thick or tenacious, or any Meconium stained amniotic fluid containing lumps (particulates) of meconium.
Non-significant:	Large amount of amniotic fluid lightly stained by meconium (no particulates). In the absence of other risk factors paediatricians are not required to attend for delivery
New	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.

1. If the baby is vigorous at birth with non- significant or new meconium, a plan should be made and documented for observation to be carried out at 1 hour and 2 hours of age for signs of respiratory distress.
   The observations must be documented on a neonatal early warning trigger and track (NEWTT2) chart. These observations must be commenced in the birth setting.
   In the Community/ MLU setting.
   - In presence of **non-significant meconium**, providing the baby remains well, NEWTT2 observations can be carried out in the community setting**.**
   - When **new meconium presents during labour and birth is not imminent** womans should be transferred to obstetric unit.
   - If **new meconium presents and birth is imminen**t then baby should be transferred as soon as possible following birth.

2. Significant (Thick particulate) meconium OR any baby born though meconium who requires resuscitation (but does not require admission to the neonatal unit, the baby should remain in hospital and observed for signs of respiratory distress at 1 hour and 2 hours of age and then 2 hourly until 12 hours of age. These observations must be commenced in the birth setting.

Any baby with initial depression requiring more prolonged resuscitation or if meconium is aspirated from below the cords they should be assessed by the paediatric team and admission to the SCBU considered.

Medication in Labour

Codeine in labour (if taken less than 6 hours before birth)

- Hourly observations at 1 and 2 hours old (in all birth settings)

Remifentanil (if given less than 4 hours of birth)

- Hourly observations at 1 and 2 hours old

After observations at 1 and 2 hours no further observations required, unless clinically indicated.

Prescribed maternal SSRIs (selective serotonin reuptake inhibitors) or SNRI's (serotonin-norepinephrine reuptake Inhibitor) and other psychotropic medications in the third trimester

Neonates who have been exposed to maternal mental health medication (psychotropic medication) in utero must be monitored for the symptoms of Poor Neonatal Adaption Syndrome (PNAS) using the drug specific review sheets. Refer to 1064 - Management of Babies Born to a Person requiring Psychotropic Medication during Pregnancy Guideline (opens in new tab). Management of babies born to a person requiring Psychotropic medication during pregnancy guideline (Adopted all Wales Version 2).

For neonates who go home after 24hrs, or who have been born at home, assessment should be repeated for PNAS on day two. (Observations to be documented on NEWTT2 chart)

Documentation

All observations must be completed and documented in a timely manner
Observations should be recorded on NEWTT2 chart.
Early warning scores must be responded to appropriately and escalated to the neonatal team. Once observations have been commenced the NEWTT chart should be filed and remain in the neonatal notes.

Neonatal referral:

If the baby's condition causes concern at any time a review by the neonatal team should be requested. This should be documented on the intrapartum record if still on labour or in the neonatal notes section of the handheld notes. If in the post-natal period, the documentation of the review of the baby by the neonatal team must be in the baby notes.

Appendix 7 - Post Ductal Pulse Oximetry as part of NEWTT2 clinical observations

All babies who are being monitored by NEWTT2 **must** have **post ductal pulse oximetry screening** at 1 hour, 2 hours and 12 hours post birth and then repeated 12 hourly until NEWTT2 is discontinued. Plot on NEWTT2 chart.

Pulse oximetry screening reduces mortality from critical congenital heart defects and also identifies babies with other important conditions non-cardiac causes, such as respiratory disorders and sepsis.

Research has consistently shown that when Pulse Oximetry Screening was introduced to the NIPEC screening programme the identification rate for critical congenital heart defects increased from average of 50% to between 90 and 95%.

Signs of congenital heart disease are not always present in the first few hours of life or can be absent even in the first few days after birth. This is because of the transition of circulation from fetal to ex-utero circulation. The NIPEC is undertaken optimally at 24 hours but usually from 6 hours and by 72 hours of birth.

Introducing post ductal pulse oximetry in Hywel Dda, at an earlier point on any babies undergoing monitoring using the NEWTT2 chart, will not only identify babies with congenital heart disease as well as identify non cardiac causes of low oxygen saturation. Undetected illness including potential infection, breathing difficulties, congenital heart disease and slow adaptation to ex-utero life are among the causes of low saturations.

Cardiovascular malformations are the leading group of congenital malformations with an incidence of 4 to 10 per 1000 live births They account for 6-10% of all infant mortality.

The term congenital heart disease (CHD) encompasses a variety of lesions with a wide range of clinical importance, ranging from those with no functional or clinical significance to potentially life-threatening lesions. If critical defects are not detected early, they can result in cardiovascular compromise resulting in death or significant long-term effects on neurodevelopment. Critical CHD refers to heart defects that require intervention or lead to death in the first 28 days after birth. Timely recognition of these conditions allows for the possibility of early intervention, before they become very unwell, that may influence the natural history of the condition and subsequent outcome.

Health care information: How to perform post ductal pulse oximetry screening.

- **Oxygen Saturation (SpO2) Measurement in a Baby**

1) Try to use a time when the baby is settled to do the test. This will optimise the chances of getting a good trace.

2) Explain to parents that you are going to check the baby's blood oxygen level and that it will not hurt the baby. Explain to parents the process as you are doing the test.
3) Ensure that the baby's skin is dry and warm Place the flat sides of the probe on opposing sides either of the baby's feet to check the post-ductal saturations (Fig.1). Reposition the probe if required. To get a good trace the probe 'faces' must be opposite one another with 'red emitter light' being on top.
4) Use Posey wrap to secure the probe - it is much less likely to pick up a safe and reliable trace if held in place by hand (Fig. 2). **Once connected** turn on the power.

If

Figure 1: The probe 'faces' are placed opposite one another with red embitter light being on top

Figure 2: Use a posey to secure the probe

Figure 3; Good trace with low saturations.
Action: Inform neonatal team urgently as per NEWTT2 escalation pathway

Allow time for a stable reading to appear. This may take up to 30-90 seconds to settle.

Always wait for a good trace as shown (Fig 3), confirm reading, plot score finding on NEWTT2 chart, refer to Track and Trigger table and escalate if indicated. Give paediatrician clear AID/ SBAR.

REMEMBER **Healthcare professional concern can initiate a review at any time regardless of the zone of colour or total score.**