Guideline for the use of the Newborn Early Warning Trigger and Track system (NEWTT)	Barnsley Hospital NHS NHS Foundation Trust
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	Authorisation date: 24/04/2019 Reviewed:24/04/2019 Next review date:24/04/2022
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Rationale

The purpose of this guideline is to ensure that:

All newborn infants are assessed in the period following birth for any condition or the development of any condition that may put them in a high risk group

Newborn infants who are classed as high risk will have heightened surveillance and clinical observations using the newborn early warning trigger and track chart (NEWTT).

Newborn infants that trigger on the chart will be referred and escalated for paediatric review and management

Background Information

Although it is recognised that only a small percentage on newborn infants require the specialist intervention of a neonatal unit (9% in 2012) there are a number of infants who are at increased risk of developing problems in the postnatal period who are cared for in a low risk setting such as the postnatal ward.

Determining risk factors is essential for managing potential illness in newborn infants. The problems they encounter may be as a result of maternal illness during pregnancy, gestational age, birth weight, intrapartum events or predisposition to sepsis

The use of an early warning score 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.

Guideline Outline

This guidance outlines which infants require additional observations on the postnatal ward using the NEWTT observation chart and the process for escalation to the paediatric team for further assessment and management. The NEWTT framework should be used as an aid to clinical assessment and is not intended to replace clinical judgment.

Infants of any gestation at risk of sepsis

Any infant with one clinical risk factor or clinical indicator but no red flags (see guideline for the prevention of early onset neonatal infection) will require observations at 1, 2 ,4, 6, 8, 10 and 12 hours of age. The observations can be discontinued at this point if the infant is well and not triggering

- If the infant remains well after 12 hours of observation he/she may be discharged but please note: in cases where there are clinical signs of

maternal infection in labour the infant should remain on the postnatal ward for 24 hours

Any infant who is commenced on antibiotic therapy either therapeutic or prophylactic (i.e.) one red flag or two or more risk factors/clinical indicators (see guideline for the prevention of early onset neonatal infection) will require observations at 1, 2, 4, 6, 8, 10, 12 hours of age and them 4 hourly until the antibiotics are discontinued.

Infants at risk of hypoglycaemia

Any infant with the following risk factors for hypoglycaemia will require clinical observations using the NEWTT chart, assessment and where appropriate escalation and management:

Infants of diabetic mothers including mothers with type1 and type 2 diabetes and gestational diabetes

Infants of mothers taking beta blockers in pregnancy (e.g. Labetalol)

Intrauterine growth restriction/Small for gestational age:

- Birth weight ≤ 2nd centile using customised GROW chart

Hypothermia (<35℃ on one occasion or persistently < 36℃, despite warming)

Obvious syndromes e.g. midline defects and Beckwith-Wiedmann

Assessment and observations will be carried out at in conjunction with blood glucose estimations as follows:

- First observations within 3 hours of birth prior to second feed

- Prior to each feed(as a minimum 3 hourly)

Observations can be discontinued when blood glucose monitoring is discontinued (i.e.) when the baby has had 2 consecutive pre-feed blood glucose measurements of >2.6mmols or two consecutive capillary sample measurements of >2.0mmols

Late preterm infants

Infants between 35^{+0} - 36^{+6} who are suitable for care on the postnatal ward environment will require observations using the NEWTT chart and where appropriate escalation and management at 1, 2, 4, 6, 8, 10, and 12 hours of age. The observations can be discontinued at this point if the infant is well and not triggering

Infants with evidence of intrapartum compromise

Infants where there is evidence of intrapartum compromise (i.e.):

- Low Apgar score ≤ 7 at 5 minutes

- Abnormal cord pH results – arterial pH ≤ 7.1, base excess ≥ -12mmol/l

Infants requiring newborn resuscitation – IPPV for more than 5 minutes

Observations will be performed at 1, 2, 4, 6, 8, 10, and 12 hours of age. The observations can be discontinued at this point if the infant is well and not triggering

Meconium stained liquor

Infants born through meconium stained liquor will require observation using the NEWTT chart and where appropriate escalation and management as follows:

Significant meconium (defined as dark green or black amniotic fluid that is thick or tenacious or any meconium stained amniotic fluid containing lumps of meconium). Observations will be recorded at 1 and 2 hours of age and then 2 hourly until 12 hours

Non significant meconium Observations should be recorded at 1 and 2 hours of age

Maternal drug use (including prescribed opiates in labour)

The following infants will require observation using the NEWTT chart and where appropriate escalation and management:

Infants born to mothers who have had prescribed opioid medication (e.g.) pethadine for pain relief in labour < 6 hours prior to delivery

- Observations will be performed at 1 and 2 hours of age

Infants born to mothers with substance misuse

- Observations will be performed at 1, 2 and 4, 6, 8, 10, 12 hours of age and then 4 hourly until discharge

Infants born to mothers taking Selective Serotonin Reuptake Inhibitors (SSRI) **do not** require observations recording

Infants born to mothers who are taking other prescribed medication which could potentially have an adverse effect on the newborn infant as indicated on the paediatric alert form

Process for escalation to the paediatric team

Babies whose observations fall in the amber or red areas on the NEWTT observation chart will require escalation to the paediatric team for review and appropriate management.

One amber score

Immediate care

- Review and re-check the observations in 30 minutes
- Escalate to the senior midwife

Ongoing care

If the baby is still scoring after 30 minutes, or there is deterioration in the baby's condition or there are other risk factors present escalate to the paediatric team for review – the paediatric SHO (bleep 510) is expected to review the baby within 30 minutes.

If the paediatrician is unable to or does not attend within 30 minutes escalate to the paediatric registrar or the paediatric consultant as appropriate. They will be expected to attend and review the baby

Two or more amber scores or one or more red scores

Escalate immediately to the paediatric team (Paediatric SHO - bleep 510) is expected to review the baby within 30 minutes.

If the paediatrician is unable to or does not attend within 30 minutes escalate to the paediatric registrar or paediatric consultant as appropriate. They will be expected to attend and review the baby

Increase the frequency of observations

Assess the need for resuscitation and take appropriate action if required. Use emergency bleep system to summon paediatric assistance in these instances.

Staff roles and responsibilities

Midwives

Have a responsibility to:

Ensure that observations on newborn infants are undertaken and escalated where appropriate to the paediatric team.

Work collaboratively with the paediatric team to provide effective monitoring and management of newborn infants requiring additional observation in the immediate postnatal period

Paediatricians

Have a responsibility to:

Ensure the appropriate management of newborn infants who are escalated for assessment in accordance with the NEWTT system

Work collaboratively with the midwifery team in the provision of effective management of newborn infants requiring additional observation in the immediate postnatal period

Documentation

The NEWTT charts will be used to record newborn observations.
Escalation and management plans will be recorded in the newborn care plan

Audit/Monitoring

Any adverse incidents relating to the use of the NEWTT and subsequent management will be monitored via the incident reporting system. Any problems will be actioned via the case review and root cause analysis action plans. The action plans are monitored by the risk midwife to ensure that improvements in care are made. The trends and any root cause analysis are discussed at the monthly risk meetings to ensure that appropriate action has been taken to maintain safety.

The guideline for the use of the Newborn Early Warning Trigger and Track system (NEWTT) will be audited in line with the annual audit programme, as agreed by the CBU. The audit action plan will be reviewed at the monthly risk management meetings on a quarterly basis and monitored by the risk midwife to ensure that improvements in care are made.

Equality Impact Assessment

Women's and Children's Services are committed to ensure that both current and potential service users and their families will not be discriminated against on the grounds of religion, gender, race, sexuality, age, disability, ethnic origin, social circumstance or background. The principles of tolerance, understanding and respect for others are central to what we believe and central to all care provided.

Training

Training will be given as documented in the Maternity Training Needs Analysis. This is updated on an annual basis.

Review

This guideline will be reviewed in three years of authorisation. It may be reviewed within this period if there are any reports, new evidence, guidelines or external standards suggesting that a guideline review is required

References

British Association of Perinatal Medicine (BAPM). Newborn Early Warning Trigger and Track (NEWTT) – A Framework for Practice (2015) [online] http://www.bapm.org/publications/documents/guidelines/NEWTT

National Institute for Health and care Excellence (NICE). Clinical guideline 190. Intrapartum care: care of healthy woman and their babies during childbirth (2014) [online] http://www.guidance.nice.org.uk/cg190

Glossary of terms

BAPM – British Association of Perinatal Medicine
CTG – Cardiotocograph
FBS – Fetal Blood Sampling
GROW - Gestation Related Optimal Weight
NEWTT – Newborn Early Warning Trigger and Track
NICE – National Institute for Health and Care Excellence
WHO – World Health Organisation

Obstetric Guideline Checklist

Guideline for the use of the Newborn Early Warning Trigger and Track system (NEWTT)	**Lead Professional** G Dunning/Dr Hamdan

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Appendix 1 – Quick reference guide

Early onset neonatal infection		
Risk Factor	**Rationale**	**Frequency and duration of observations**
One clinical risk factor or clinical indicator but no red flags (see guideline for the prevention of early onset neonatal infection	Increased risk of early onset sepsis	1, 2 ,4, 6, 8, 10 and 12 hours of age
Any infant who is commenced on antibiotic therapy either therapeutic or prophylactic (i.e.) one red flag or two or more risk factors/clinical indicators	Increased risk of early onset sepsis	1, 2, 4, 6, 8, 10, 12 hours of age and then 4 hourly until the antibiotics are discontinued.
Infants at risk of hypoglycaemia		
Risk Factor	**Rationale**	**Frequency and duration of observations**
Maternal diabetes	Transient hypoglycaemia	Assessment and observations will be carried out at in conjunction with blood glucose estimations as follows: • First observations within 3 hours of birth prior to second feed • Prior to each feed(as a minimum 3 hourly) Observations can be discontinued when blood glucose monitoring is discontinued (i.e.) when the baby has had 2 consecutive pre-feed blood glucose measurements of >2.6mmols or two consecutive capillary sample measurements of >2.0mmols
Maternal beta-blockers	Increased risk of hypoglycaemia	
Intrauterine growth restriction/Small for gestational age:	Delayed physiological adaptation, increased risk of hypoglycaemia, hypothermia	
Obvious syndromes e.g. midline defects and Beckwith-Wiedmann	Increased risk of hypoglycaemia	
Late Pre-term infants		
Risk Factor	**Rationale**	**Frequency and duration of observations**
Gestation 35^{+0} – 36^{+6}	Increased risk of morbidity, respiratory distress, thermal labiality, hypoglycaemia, poor feeding and hyperbilirubinaemia	1, 2, 4, 6, 8, 10, 12 hours of age

Infants with evidence of fetal compromise		
Risk Factor	**Rationale**	**Frequency and duration of observations**
Low Apgar score ≤ 7 at 5 minutes	Increased risk of respiratory distress, postnatal and long term morbidity	1, 2, 4, 6, 8, 10, 12 hours of age
Abnormal cord pH results – arterial pH ≤ 7.1, base excess ≥ -12mmol/l		
Infants requiring newborn resuscitation – IPPV for more than 5 minutes	Indicator of delayed transition	
Meconium stained liquor		
Risk Factor	**Rationale**	**Frequency and duration of observations**
Significant meconium	Risk of respiratory distress	1, 2, 4, 6, 8, 10, and 12 hours of age
Non-significant meconium	Risk of respiratory distress if associated with an Apgar of ≤7	1 and 2 hours of age then discontinue unless associated with low Apgar's then continue 2 hourly until 12 hours of age
Maternal drug use		
Risk Factor	**Rationale**	**Frequency and duration of observations**
Maternal opioids given <6 hours prior to birth	Respiratory depression	1 and 2 hours of age
Maternal substance misuse	Effects will be dependant upon the drugs taken	1, 2 and 4, 6, 8, 10, 12 hours of age and then 4 hourly until discharge
Prescribed maternal medication as indicated in a paediatric alert form	Effects will be dependant upon the drugs taken	