Clinical Guideline: Neonatal Alert, Trigger & Track (NATT) tool

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For use in: East of England Neonatal Units
Guidance specific to the care of neonatal patients in transitional & special care settings

Used by: All neonatal/paediatric healthcare professional working within neonatal services including medical doctors, registered nurses, nursery nurses healthcare assistants & healthcare support workers

Key Words: Neonate, Neonatal, Newborn, escalation process, early warning tools, observations, SBAR, special care, transitional care

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1 Introduction

1.1 Purpose of the NATT tool framework

Early warning scores have been used across acute hospital services for many years. In the adult setting National Early Warning Score (NEWS) was introduced in the early 1990’s (1), in the paediatric setting Paediatric Early Warning Score (PEWS) was introduced in 2005 (2) and in the maternity setting the BAPM Newborn Early Warning Trigger and Track tool (NEWTT) was introduced in 2015 (3). It is generally accepted that the use of such tools is valuable in detecting subtle deterioration in clinical conditions and leads to early medical review by escalating concerns in a timely manner, leading to reduced morbidity and mortality rates (4).

The BAPM introduced the NEWTT in 2015 to maternity services around the country. The NEWTT tool is designed to be used by healthcare professionals working in areas caring for newborn babies in the early and on-going postnatal period. Although BAPM suggest that the NEWTT can be used in neonatal services (special care and transitional care units), it is not robust enough to be used for all neonatal services (3).

With the guidance from a working group within the East of England Neonatal ODN a new tool was created (which mimicked the author’s original tool, PEWS and the BAPM NEWTT tool) to be implemented within neonatal services across the region.

1.2 Background

There were 696,271 live births in England and Wales in 2016 (5). According to Bliss over 95,000 babies are cared for in neonatal units in the United Kingdom, they have either been born prematurely (before 37 weeks gestation) or sick term infants (6). This means that 1 in 8 babies born in the UK each year are admitted to neonatal units. That is approximately 12.5% of all babies cared for within neonatal services for a variety of medical and surgical reasons every year.

1.3 Definitions

The East of England Neonatal Alert, Trigger and Track tool (NATT) is a modified version of the well-known Paediatric Early Warning Score (PEWS 0-11 months) (2) and the British Association of Perinatal Medicine (BAPM) Newborn Early Warning Trigger and Track (NEWTT) (3) used in the inpatient maternity setting.

The working group was put together to develop a Neonatal Early Warning Tool for use within the neonatal services to aid nurses and healthcare support workers across the network. It was decided within the working group to use Neonatal Alert, Trigger and Track (NATT) to avoid confusion with the BAPM tool among all healthcare professionals.
1.4 Target Users

The NATT tool is designed to be used by all healthcare professionals working within neonatal services (transitional care and special care) looking after premature and sick newborn infants at all levels within the region (secondary and tertiary care, level 1, 2 & 3). This includes 17 hospitals across the East of England Neonatal ODN; Luton and Dunstable (tertiary centre), Lister, Watford, Bedford, Norfolk and Norwich (tertiary centre), King’s Lynn, Ipswich, James Paget, Addenbrookes-Rosie (tertiary centre), Peterborough, Colchester, Broomfield, Harlow, Hinchingbrooke, West Suffolk, Southend and Basildon. The NATT tool will be used by all medical staff, registered nurses and midwives, nursery nurses, healthcare assistants and healthcare support workers.

1.5 Management of sick infants

The early recognition and management of sick preterm and term infants is paramount (7). Therefore the implementation of an early warning tool is crucial in aiding healthcare professionals to identify clinical deterioration in at risk infants. Providing early escalation to the medical team will in turn lead to better outcomes and may reduce the potential negative impact of any problems. The problems these infants encounter may be as a result of maternal illness during pregnancy, gestational age, low birth weight, intrapartum events and sepsis (8) (3). Therefore it is crucial to have a detailed history taken on admission so the appropriate care can be given to the infant (9) (10).

1.6 Purpose of framework

The NATT tool has been designed with nurses, nursery nurses, healthcare assistants and healthcare support workers in mind. It is a tool that will alert the caregiver to subtle clinical changes in infants in their care in the transitional and special care setting.

The NATT tool seeks to:

- Identify premature and newborn infants at risk of clinical deterioration following birth
- Identify clinical deterioration in all infants in transitional and special care
- Provide a standardised observation tool for monitoring clinical progress
- Provide a visual prompt to aid identification of vital signs outside the norm by colour coding e.g. red, amber, green (white) and a numerical system
- Through early recognition of deterioration reduce the severity of illness where possible for some infants admitted to the neonatal unit from maternity services
- To aid structured escalation to the medical team
- To aid referring hospitals in escalation of care to a tertiary centre
- To aid the Acute Neonatal Transport Service (ANTS) in accepting infants for transfer within the region
- To aid junior members of staff in the escalation process
The NATT tool is to be used in conjunction with clinical assessment and is not intended to replace competent clinical judgement (11). The RCN 2011 state that practitioners should take appropriate action in response to changes in vital sign assessment and measurement (12). This tool aims to aid all healthcare professionals in doing so in a structured and timely manner.
2 Process

2.1 Identifying the working group

The working group for developing the NATT tool was put together in September 2016 and was made up of QIS nurses, practice facilitators and lead nurses from across the East of England Neonatal ODN and chaired by Erica Everett (network lead nurse practice development).

The working group was put together to develop the Neonatal Alert, Trigger and Track tool. Early warning tools already used within the region were discussed and reviewed. The working group decided on using the Neonatal Early Warning Tool (NEWT) which was in use in Chelmsford NICU as it was robust and had been successfully implemented.

It was decided that the original tool will be redesigned to suit implementation to all neonatal units across the network alongside a colour coded traffic light system and numerical scoring system observation chart and escalation aid.

2.2 Patient at risk groups

The NATT tool is suitable to be implemented into transitional and special care (‘at risk group’) at first to determine how successful the tool is at identifying clinical deterioration in infants and escalating in a timely manner. It was decided that high dependency and intensive care infants are mainly looked after by experienced and Qualified in Speciality (QIS) nurses and could be excluded from the project.

2.3 Targeted staff group

This NATT tool was designed for staff to recognise and escalate the early deterioration of infants in their care. Which is why the working group decided on an ‘at risk group’ of infants. These infants are predominately looked after by junior staff nurses, nursery nurses, healthcare assistants and healthcare support workers. With the use of the NATT tool and good clinical judgement these staff members will have the knowledge and ‘knowhow’ to escalate concerns to the nurse in charge/QIS nurse and/or medical team in a timely manner.

2.4 Vital signs for inclusion

The vital signs were then discussed. The working group researched neonatal vital signs and fed back to the group. For Heart Rate (HR), Respiratory Rate (RR), Capillary Refill Time (CRT) and behaviour the BAPM NEWTT guideline was used (3). For Temperature the EoE Thermoregulation guideline was used (13), for Oxygen Saturation the EoE Saturation Targeting guideline was used (14), for Blood Pressure the EoE Hypertension guideline was used (15), for Pain the EoE Pain guideline was used (16), for Blood Glucose the EoE Hyperglycaemia guideline was used (17), and for aspirates the EoE Enteral Feeding guideline was used (18).
All vital sign parameters were discussed within the working group and agreed for inclusion on the NATT tool observation chart as outlined in the next page in table 1.

**Table 1.**

<table>
<thead>
<tr>
<th>Vital signs</th>
<th>Normal parameters Score 0</th>
<th>Amber Score 1</th>
<th>Red Score 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HR</strong> (see figure 1)</td>
<td>100 – 160</td>
<td>80 – 100</td>
<td>&lt; 80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>160 – 180</td>
<td>&gt; 180</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;20% outside infants normal range</td>
<td>&gt;30% outside infants normal range</td>
</tr>
<tr>
<td><strong>RR</strong> (see figure 1)</td>
<td>40 – 60</td>
<td>60 – 80</td>
<td>&gt; 80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;20% outside infants normal range</td>
<td>&lt; 30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;30% outside infants normal range</td>
<td></td>
</tr>
<tr>
<td><strong>CRT</strong></td>
<td>≤ 2 seconds</td>
<td>2 – 3 seconds</td>
<td>≥ 4 seconds</td>
</tr>
<tr>
<td><strong>SaO₂</strong> (see figure 2)</td>
<td>Pink. Within normal limits for gestation.</td>
<td>Pale</td>
<td>Bue &lt;90%</td>
</tr>
<tr>
<td><strong>BP</strong></td>
<td>≥ corrected gestation</td>
<td>(blood pressure should be discussed with medical team)</td>
<td>(blood pressure should be discussed with medical team)</td>
</tr>
<tr>
<td></td>
<td>(Within hypertension guideline limits)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Blood Glucose</strong></td>
<td>2.6 – 6.6mmol/l</td>
<td>2 – 2.5mmol/l</td>
<td>&lt; 2mmol/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.7 – 9.9mmol/l</td>
<td>&gt; 10mmol/l</td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>36.5 – 37.5</td>
<td>36 – 36.5</td>
<td>&lt; 36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>37.5 – 38</td>
<td>&gt; 38</td>
</tr>
<tr>
<td><strong>Pain</strong> (see figure 3)</td>
<td>0 – 3</td>
<td>4 – 5</td>
<td>≥ 5</td>
</tr>
<tr>
<td><strong>Aspirates</strong></td>
<td>&lt; 50% of 4 hourly volume</td>
<td>&gt; 50% of 4 hourly volume but milky</td>
<td>&gt; 50% of 4 hourly volume OR bile/blood stained asp</td>
</tr>
<tr>
<td><strong>Behaviour</strong></td>
<td>Settled/alert/consolable</td>
<td>Jittery, irritable, lethargic</td>
<td>Hypotonia (floppy), hypertonia, un-arousable</td>
</tr>
<tr>
<td><strong>Apnoea, bradycardia &amp; desaturation</strong></td>
<td>None</td>
<td>Increased frequency but self-limiting</td>
<td>Requiring intervention</td>
</tr>
</tbody>
</table>

Inspired oxygen and oxygen delivery method are also monitored on the observation chart as well as the vital signs mentioned above.

As there is a wide variation of the ‘normal’ ranges for heart rate and respiratory rate in infants it has been decided to include >20% increase (amber) and >30% increase (red) so infants who have subtle increases in HR and RR but still within the ‘normal’ range will trigger. This is to ensure that infants who are normally within the lower range will trigger regardless (see figure 1).
**Figure 1.**

A normal baseline HR of 120 bpm will have an:

| Increase in HR by 24 to 144 bpm | >20% increase = amber |
| Increase in HR by 36 to 156 bpm | >30% increase = red |

**Figure 2.**

<table>
<thead>
<tr>
<th>EOE Oxygen Saturation Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gestation</strong></td>
</tr>
<tr>
<td>Preterm &lt;37 weeks or Birth weight &lt;1.5kg</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Term infant &gt;37 weeks</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Preterm infant with corrected gestation &gt;37 weeks</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

All infants <34 weeks gestation & all infants on supplementary oxygen, invasive/non-invasive ventilatory support must be commenced on continuous pulse oximetry at the least.

**Figure 3.**

<table>
<thead>
<tr>
<th>EOE Pain Score – N-PASS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pain Score</strong></td>
</tr>
</tbody>
</table>

N-PASS is a reliable assessment tool used for neonatal pain & sedation management. Pain generates a positive number & sedation generates a negative number. + 2 if 28-32 weeks + 1 is 32-36 weeks
2.5 Adding up the NATT score

When observations are recorded on the NATT tool observations chart (see appendix 2), a NATT score will be generated based on each vital sign explained in table 1.

- Observations within normal limits will generate a score of 0 (green) which will be seen in the white columns
- Observations outside of the norm will generate a score of 1 which will be seen in the amber columns
- Observations further outside of the norm will generate a score of 2 which will be seen in the red columns

When the scores are added together this generates the total NATT score and guides escalation.

2.6 Escalation process

The escalation process is based on a numerical score generated from the colour coded observation chart. Any deviation from the norm as discussed will generate a numerical score and depending how far out of the normal range it is will generate an amber or red prompt on the observation chart. The total NATT score will be made up by counting the amber and red triggers together (table 2).

- A score of 0 generates a green trigger (white on the observation chart) the green escalation process should be followed (green 0)
  ✓ Continue with current observation frequency

- A score of 1 – 2 generates an amber trigger and the first amber escalation process should be followed (amber 1 – 2)
  ✓ QIS nurse to complete full assessment & document a plan of care
  ✓ Consider oxygen saturation & HR monitoring
  ✓ Hourly observations until plan of care implemented
  ✓ If score of 1-2 for more than 2 consecutive readings senior review should be considered

- A score of 3 – 4 generates an amber trigger and the second amber escalation process should be followed (amber 3 – 4)
  ✓ Begin continuous oxygen saturation & HR monitoring immediately
  ✓ Inform nurse in charge/QIS nurse
  ✓ QIS nurse to complete full assessment within 15 minutes
  ✓ Nursing team to escalate to medical team following assessment
  ✓ Medical review within 1 hour of initial trigger
  ✓ Hourly observations until plan of care implemented
• A score of \( \geq 5 \) or any single red trigger generates a red trigger and the red escalation process (\( \text{red} \geq 5 \)) should be followed
  ✓ Begin continuous oxygen saturation & HR monitoring immediately
  ✓ Seek nurse in charge/QIS nurse & escalate to medical team immediately
  ✓ QIS nurse to complete full assessment of baby immediately (full set of observations; HR, RR, oxygen saturation, BP, CRT, temperature, blood glucose)
  ✓ Consider additional continuous monitoring as required (ECG monitor for HR, RR, BP & oxygen saturation)
  ✓ To be reviewed by medical team within 15 minutes of initial trigger
  ✓ Ensure senior medical team are informed

An example of working out the NATT score can be found in appendix 3.

Table 2.

<table>
<thead>
<tr>
<th>NATT SCORE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>✓ Continue with current observation frequency</td>
</tr>
<tr>
<td>1-2</td>
<td>✓ QIS nurse to complete full assessment &amp; document a plan of care ✓ Consider oxygen saturation &amp; HR monitoring ✓ Hourly observations until plan of care implemented ✓ If score of 1-2 for more than 2 consecutive readings medical review should be considered</td>
</tr>
<tr>
<td>3-4</td>
<td>✓ Begin continuous oxygen saturation &amp; HR monitoring immediately ✓ Inform nurse in charge/QIS nurse ✓ QIS nurse to complete full assessment within 15 minutes ✓ Nursing team to escalate to medical team following assessment ✓ Medical review within 1 hour of initial trigger ✓ Hourly observations until plan of care implemented</td>
</tr>
<tr>
<td>ANY SINGLE RED TRIGGER OR TOTAL SCORE OF ( \geq 5 )</td>
<td>✓ Begin continuous oxygen saturation &amp; HR monitoring immediately ✓ Seek nurse in charge/QIS nurse &amp; escalate to medical team immediately ✓ QIS nurse to complete full assessment of baby immediately (full set of observations; HR, RR, oxygen saturation, BP, CRT, temperature, blood glucose) ✓ Consider additional continuous monitoring as required (ECG monitor for HR, RR, BP &amp; oxygen saturation) ✓ To be reviewed by medical team within 15 minutes of initial trigger ✓ Ensure senior medical team are informed</td>
</tr>
</tbody>
</table>
The score generated can be a mixture of amber and red triggers. There is a score box at the bottom of the observation chart as well as an initial box which need to be completed after each set of observations carried out.

It is crucial to escalate any concerns in a timely manner. The tool is designed to identify the deteriorating infant and seek senior help appropriately and in the time stated in the escalation process.

If you are unsure how to use the NATT tool observation chart and escalation aid speak to your senior nurse/QIS nurse.

*N.B. It is important to note that any one single red trigger needs to be escalated immediately following the red trigger action prompt on the escalation aid as outlined in table 2.*

Escalation of concerns should follow the SBAR process remembering to state which tool is being used (for example NATT, NEWTT or PEWS). It is important to know that they are a variety of escalation tools for paediatric and midwifery services and the medical team need to know which tool has been used in order to make an action plan as they could be familiar with at least two other escalation tools (19).

The full NATT tool escalation aid can be found in *appendix 1* and the NATT tool observation chart in *appendix 2* along with an SBAR process example in *appendix 4*. 
3 Audit process

The use of the NATT tool will be audited for the purpose of the project so the working group can gather information on the users and effectiveness of the escalation process within practice. Audit form can be found in appendix 5.

The pilot will run for 12 months and in that time weekly audits will be carried out in all of the local neonatal units. Information will be fed back to group to be analysed.

Once the pilot is completed the East of England Neonatal ODN benchmarking group will take over the audit process.

4 Education

The PDN group will lead on implementation of the guideline. Education will be required and this will be done within local neonatal units in the form of an EOE Neonatal ODN teaching presentation and poster. This is to ensure that all units are given the same information on the use and implementation of the NATT tool and guideline in to practice.

5 Feedback

Feedback is welcome and you can find a feedback form in appendix 6.

Feedback during the NATT tool pilot timeframe is essential so improvements can be made and crucial information is passed on.

You can fill in the feedback form and email to the author of the NATT tool and guideline. Details are on the feedback form.
Reference list


## NATT Escalation Aid
### Neonatal Alert, Trigger & Track (NATT) Tool

<table>
<thead>
<tr>
<th>NATT SCORE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>✓ Continue with current observation frequency</td>
</tr>
</tbody>
</table>
| 1-2        | ✓ QIS nurse to complete full assessment & document a plan of care  
           | ✓ Consider oxygen saturation & HR monitoring  
           | ✓ Hourly observations until plan of care implemented  
           | ✓ If score of 1-2 for more than 2 consecutive readings medical review should be considered |
| 3-4        | ✓ Begin continuous oxygen saturation & HR monitoring immediately  
           | ✓ Inform nurse in charge/QIS nurse  
           | ✓ QIS nurse to complete full assessment within 15 minutes  
           | ✓ Nursing team to escalate to medical team following assessment  
           | ✓ Medical review within 1 hour of initial trigger  
           | ✓ Hourly observations until plan of care implemented |

### ANY SINGLE RED TRIGGER OR TOTAL SCORE OF ≥5

- ✓ Begin continuous oxygen saturation & HR monitoring immediately
- ✓ Seek nurse in charge/QIS nurse & escalate to medical team immediately
- ✓ QIS nurse to complete full assessment of baby immediately (full set of observations; HR, RR, oxygen saturation, BP, CRT, temperature, blood glucose)
- ✓ Consider additional continuous monitoring as required (ECG monitor for HR, RR, BP & oxygen saturation)
- ✓ To be reviewed by medical team within 15 minutes of initial trigger
- ✓ Ensure senior medical team are informed

### EOE Oxygen Saturation Limits

<table>
<thead>
<tr>
<th>Gestation</th>
<th>Air/Oxygen</th>
<th>Target</th>
<th>Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preterm &lt;37 weeks or Birth weight &lt;1.5kg</td>
<td>Oxygen</td>
<td>91 - 95%</td>
<td>90 - 96%</td>
</tr>
<tr>
<td></td>
<td>Air</td>
<td>≥91%</td>
<td>91 - 100%</td>
</tr>
<tr>
<td>Term infant &gt;37 weeks</td>
<td>Oxygen</td>
<td>≥95 - 99%</td>
<td>94 - 99%</td>
</tr>
<tr>
<td></td>
<td>Air</td>
<td>≥95%</td>
<td>94 - 100%</td>
</tr>
<tr>
<td>Preterm infant with corrected gestation &gt;37 weeks</td>
<td>Oxygen</td>
<td>≥93-99%</td>
<td>92 - 99%</td>
</tr>
<tr>
<td></td>
<td>Air</td>
<td>≥93%</td>
<td>92 - 100%</td>
</tr>
</tbody>
</table>

### EOE Pain Score – N-PASS

<table>
<thead>
<tr>
<th>Pain Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 3</td>
</tr>
<tr>
<td>4 - 5</td>
</tr>
<tr>
<td>≥5</td>
</tr>
</tbody>
</table>

N-PASS is a reliable assessment tool used for neonatal pain & sedation management. Pain generates a positive number & sedation generates a negative number.

† 2 if 28-32 weeks
† 1 is 32-36 weeks

### Amber & red baseline increases

A normal baseline HR of 120 bpm will have an:
- Increase in HR by 24 to 144 bpm ▶️amber ▶️ amber 
- Increase in HR by 36 to 156 bpm ▶️ red
- Increase in baseline HR & RR parameters when still within ‘normal’ ranges

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*This tool has been modified from the NHS Institute for Innovation & Improvement, SBAR & PEWS 0-11 Months (2012) & Monaghan (2005)*
*Created by Mhuireann Mulvihill with the East of England Neonatal ODN NATT Group 2018*
### Appendix 2

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Frequency of observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Incubator / hot cot/temperature</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temperature</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17.0</td>
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<tr>
<td></td>
<td></td>
<td>16.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Heart Rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>180</td>
</tr>
<tr>
<td></td>
<td></td>
<td>170</td>
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<td></td>
<td>40</td>
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<tr>
<td></td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

- Capillary refill time
- Inspired oxygen
- Oxygen delivery method
- Blood Pressure
  - Systolic / Diastolic
  - Mean
  - Acceptable: **50**
- Pulse or blue SaO2 < 90%
  - SaO2: 90-94%: Pulse
  - within normal limits for gestation
  - Tachy / Hypertonia / Unresponsive
  - Jittery / Irritable / Lethargic
  - Seizure / not observable
- Blood glucose
  - < 2.0 or > 18.0 mmol/l
  - 2.0-4.9 or 5.7-9.9 mmol/l
  - 5.0-6.6 mmol/l
- Gastric aspirate
  - < 50% of previous 4 hourly volume / bile or blood stained
  - < 50% of previous 4 hourly volume
- Pain
  - > 5
  - 4 to 5
  - 0-3
- Apnoea / bradycardia / desat
  - Normal
  - Increased frequency of self limiting
  - Increased frequency requiring intervention
  - Increased frequency requiring intervention
  - Increased frequency requiring intervention
- Counter signature (if required)
**Appendix 3.**

**Calculating the NATT score example:**

A 34 week (corrected gestation) baby girl who is in special care for feeding and growing. She is 2 weeks old. Treated for sepsis and needed respiratory support for the first week of life. The baby was moved into special care 2 days ago once they were having full enteral feeds.

You have just started your shift and received handover (baby had a settled night and no nursing concerns overnight). During handover you noticed that the baby looked pale and mottled so decided to do a full set of observations.

You need to calculate the NATT score based on the babies observations (vital signs) and escalate appropriately using the NATT tool observation chart and escalation aid.

**Your observations are as followed:**

<table>
<thead>
<tr>
<th>Vital Sign</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR</td>
<td>187</td>
</tr>
<tr>
<td>RR</td>
<td>58</td>
</tr>
<tr>
<td>CRT</td>
<td>2-3 seconds</td>
</tr>
<tr>
<td>SaO₂</td>
<td>91% but pale in appearance</td>
</tr>
<tr>
<td>BP</td>
<td>Mean BP 40</td>
</tr>
<tr>
<td>Blood Glucose</td>
<td>2.6mmol/l</td>
</tr>
<tr>
<td>Temperature</td>
<td>36.6</td>
</tr>
<tr>
<td>Pain</td>
<td>0</td>
</tr>
<tr>
<td>Aspirates</td>
<td>Some milky asps</td>
</tr>
<tr>
<td>Behaviour</td>
<td>Lethargic</td>
</tr>
<tr>
<td>Apnoea, bradycardia &amp; desaturation</td>
<td>Fleeting desaturations</td>
</tr>
</tbody>
</table>

The NATT score is 5 based on the observations shown.

Each vital sign that triggered were all amber but the total is 5.

Therefore you need to follow the red escalation process as explained previously in the guideline.

<table>
<thead>
<tr>
<th>Total NATT score</th>
<th>5</th>
</tr>
</thead>
</table>
Example of SBAR communication

<table>
<thead>
<tr>
<th>S</th>
<th>Situation</th>
<th>Situation:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Why are you calling?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What is your patient concern?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B</th>
<th>Background</th>
<th>Background:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>What is the relevant background of the patient?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What gestation is the patient?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>Assessment</th>
<th>Assessment:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>What are the patient’s vital signs and NATT score?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What do you think is the problem?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R</th>
<th>Recommendation</th>
<th>Recommendation:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>What do you want them to do?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ask what can I do until you review the patient?</td>
</tr>
</tbody>
</table>

N.B. Always use SBAR when communicating with nursing and medical staff. It is designed to be a structured conversation tool when handing over important information about your patient.
Appendix 5

Audit process: Please audit 5 sets of notes every week during the project time frame (*12 months*) and once a month thereafter.

<table>
<thead>
<tr>
<th>Date:</th>
<th>Patient 1</th>
<th>Patient 2</th>
<th>Patient 3</th>
<th>Patient 4</th>
<th>Patient 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question:</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>1 Is there an addressograph on the paper work?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Is frequency of observations documented?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Is the date and time documented?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Is the NATT score documented?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Are the observations signed after each entry?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Has the appropriate escalation process been followed?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Is the escalation of concerns documented?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Has the patient been reviewed in the time frame advised on the escalation aid?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Has a plan of care been implemented?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Has the escalation process, review and plan of care been documented?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SCORE:  /10 %

SMART action plan for failing audits

<table>
<thead>
<tr>
<th>AIM</th>
<th>Description</th>
<th>SMART goal</th>
<th>Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Specific goal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M Measurable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Achievable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R Relevant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T Timescale</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix 6

### Feedback form for the East of England Neonatal ODN NATT tool and guideline

**Name:**

**Hospital:**

**Date:**

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>How was the layout &amp; design of the NATT tool?</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td><em>(1 = very poor, 10 = very good)</em></td>
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<td></td>
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</tr>
<tr>
<td>How easy was it to work out the NATT score?</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><em>(1 = very hard, 10 = very easy)</em></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Did you find it easy to use the NATT observation chart?</td>
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</tr>
<tr>
<td><em>(1 = very hard, 10 = very easy)</em></td>
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<tr>
<td>Did you find it easy to use the NATT escalation aid?</td>
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<td></td>
</tr>
<tr>
<td><em>(1 = very hard, 10 = very easy)</em></td>
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</tr>
<tr>
<td>How did you find the NATT escalation process?</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><em>(1 = very poor, 10 = very good)</em></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How was the response from the medical team/QIS nurse to the NATT score?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(1 = very poor, 10 = very good)</em></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>How did you find the NATT teaching sessions provided locally?</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(1 = very poor, 10 = very good)</em></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**What did you like most about the NATT tool?**

**How can we improve the NATT tool for future use?**

**Any other comments?**

*Feedback forms can be emailed to Mhuireann Mulvihill at: mhuireann.mulvihill@addenbrookes.nhs.uk*
Appendix 7 – NATT teaching poster

NATT Escalation Aid
Neonatal Alert, Trigger & Track (NATT) Tool

<table>
<thead>
<tr>
<th>NATT SCORE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Continue with current observation frequency</td>
</tr>
<tr>
<td>1</td>
<td>Obtain or complete full assessment &amp; document plan of care</td>
</tr>
<tr>
<td>2</td>
<td>Monitor oxygen saturation &amp; mandatory recording</td>
</tr>
<tr>
<td>3</td>
<td>Have continuous respiratory support in place of care implemented</td>
</tr>
<tr>
<td>4</td>
<td>If any of the above is not completed medical review should be considered</td>
</tr>
</tbody>
</table>

**ANY SINGLE RED TRIGGER OR TOTAL SCORE OF ≥3**

**NATT score**

**Escalation aid**

**Escalation process**

**Medical/QtS review/assessment**

EOE Oxygen Saturation Limits

<table>
<thead>
<tr>
<th>SBAR</th>
<th>Neonatal</th>
<th>Deterioration</th>
<th>Assessment</th>
<th>Observations</th>
<th>Escalation</th>
</tr>
</thead>
</table>

**Early warning tool**

Traffic lights Green Amber Red

NATT
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**Exceptional Circumstances Form**

Form to be completed in the **exceptional** circumstances that the Trust is not able to follow ODN approved guidelines.

<table>
<thead>
<tr>
<th>Details of person completing the form:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>Organisation:</td>
</tr>
<tr>
<td>First name:</td>
<td>Email contact address:</td>
</tr>
<tr>
<td>Surname:</td>
<td>Telephone contact number:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title of document to be excepted from:</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Rationale why Trust is unable to adhere to the document:</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Signature of speciality Clinical Lead:</th>
<th>Signature of Trust Nursing / Medical Director:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>Date:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hard Copy Received by ODN (date and sign):</th>
<th>Date acknowledgement receipt sent out:</th>
</tr>
</thead>
</table>

Please email form to: [mandybaker6@nhs.net](mailto:mandybaker6@nhs.net) requesting receipt.

Send hard signed copy to: Mandy Baker  
EOE ODN Executive Administrator  
Box 93  
Cambridge University Hospital  
Hills Road  
Cambridge CB2 0QQ