



## CLINICAL PRACTICE GUIDELINE

# Neonatal observations

This document should be read in conjunction with this [Disclaimer](#)

Note: For immediate care after birth see Clinical Guidelines, O&G, Neonatal Care:

- [Immediate Care for Babies](#)

### Aim

- To ensure appropriate and timely neonatal observations ([Routine care](#) [T, HR, RR]; [Additional obs](#) [for operative birth, MSL, GBS, preterm/LBW, antenatal corticosteroids]) and [measurements](#) (W, HC, L) are performed and recorded.

### Vital signs

#### Normal range for a newborn<sup>1</sup>

Temperature	36.5 – 37.4°C
Apex beat	110-160 beats per minute (bpm)
Respirations	30-60 breaths per minute

### Temperature

- On admission record axillary temperature hourly until three consecutive readings of 36.5 – 37.4°C have been recorded since birth. If normal, cease measurements unless the clinical situation indicates further monitoring is required.
- See Neonatal Clinical Guideline - Thermoregulation for neonatal temperature ranges.
- All babies on antibiotics have their temperature recorded prior to feeds. Once the antibiotics have ceased, record the temperature once per shift for a further 24 hours.
- Instruct the mother on how to take the neonatal temperature. Inform her to report to midwifery staff any abnormal findings.
- Any recordings below 36.5°C or above 37.4°C are recorded in red. If >37.4°C, the Paediatric Registrar or Resident is to be notified immediately. If <36.5°C see KEMH Clinical Guideline, O&M, [Neonatal Hypothermia](#).

## Heart rate

- On admission record the neonatal heart rate hourly until three consecutive readings have been recorded since birth. If the heart rate recordings are within normal limits, observations may be ceased unless the clinical situation indicates further monitoring is required.
- The Paediatric Registrar or Resident should be notified immediately if the heart rate recordings are outside the normal range for a newborn.

## Respirations

- On admission record neonatal respirations hourly until three consecutive recordings have been recorded since birth. If the respirations are within normal limits, recording may cease unless the clinical situation indicates further monitoring is required.
- Paediatric Registrar or Resident should be notified immediately if the respiratory rate recordings are outside the normal range for a newborn.

## Additional observations

- Operative Birth
  - **Vacuum Assisted Birth**

Hats and bonnets should not be used

    - Observation for subgaleal haemorrhage (SGH) at 2, 4 and 8 hours of age as follows: Palpate the scalp to assess for resolution of the chignon
    - Palpate the scalp to note any ballotable mass or movement of fluid (gravity dependent), note the colour and head shape including displacement of the ears or pitting oedema.
    - Document all observations on the neonatal care plan.
  - **Additional Midwifery Observation is required following:**
    - Total vacuum extraction time > 20 minutes and / or 3 pulls and / or 2 cup detachments.
    - 5 minute Apgar score < 7
    - At clinician request
    - Routine surveillance observations are causing concern
    - When additional observations for SGH are required, they are to continue for at least the first 12 hours of life.
      - Hourly for the first 2 hours and then 2 hourly for a further 6 hours.
  - **When there is clinical suspicion of SGH immediately following birth or abnormalities are noted on increased surveillance:**
    - Prompt review by a paediatrician

- **Meconium Stained Amniotic Fluid (MSAF)**– as for all neonates, PLUS at least 2 hourly until 12 hours of age<sup>2</sup>:

- Temperature, heart rate, respiratory rate, (also observe/ document any abnormalities in chest wall movements, pattern & effort), tone, colour, feeding, general wellbeing. SpO<sub>2</sub> (at least at 1, 2 & 4 hours of age).<sup>3</sup> If observations outside normal parameters, report to the Neonatal Medical Officer for review.

See guideline: O&M: Intrapartum: [Meconium Stained Amniotic Fluid](#)

- **Babies at Risk of Early Onset Sepsis-**

1. All neonates ≥35 weeks (irrespective of mode of birth): Assess using the Neonatal Sepsis Calculator, and manage as per Neonatal Clinical Guideline: [Sepsis: Septic Calculator - Assessment of Early-Onset Sepsis in Infants > 35 Weeks](#)

2. Previous infant with invasive GBS disease- septic screen and treat

3. If calculator unavailable (e.g. IT failure) or <35 weeks: Positive Group B Streptococcal (GBS) culture, GBS bacteriuria, or unknown GBS status with risks (ruptured membranes ≥ 18 hours, preterm birth,<sup>4</sup> or intrapartum maternal temperature ≥38°C)<sup>5</sup> should be observed for ≥48 hours.<sup>6</sup>

- Where **adequate** intrapartum antibiotics (≥4hours) have been given for maternal risk factors – temperature, heart and respiratory rates shall be taken as for all neonates PLUS at least before each feed / 3-4 hourly for 48 hours\*.

\* Observation after 24 hours<sup>^</sup> (24-48 hours) can occur at home if the neonate is ≥37 weeks, meets the criteria for discharge, there is suitable access to medical services, an adult able to comply with home observations\*\* will be present<sup>6</sup> and has had medical review /approval. Document the GBS home observation requirement/period in the Visiting Midwifery Service (VMS) section on STORK for VMS to follow-up for passage of stool and urine

\*\* Inform the parents about the signs/ symptoms of infection, how to assess / document neonatal feeding / general wellbeing / temperature, and what to do if abnormalities or concerns.

<sup>^</sup> If requested by the mother, early discharge before 24 hours may only be considered after senior neonatal medical team review.

- Where there has been **inadequate** maternal antibiotic prophylaxis, continue observations as above in hospital until ≥48 hours of age,<sup>6</sup> and refer to the full neonatal guideline for further tests and assessments [Sepsis: Septic Screening Procedures](#)

- Where intrapartum GBS prophylaxis is not indicated (e.g. GBS negative or booked caesarean with intact membranes) and there are no signs of neonatal sepsis or maternal chorioamnionitis, provide routine neonatal care.<sup>6</sup>
  - If a caesarean is performed prior to labour and with intact membranes, GBS antibiotic prophylaxis is not indicated, regardless of GBS status or gestation (this does not affect routine perioperative administration of antibiotics). If ruptured membranes or onset of labour, GBS antibiotics are recommended, and subsequent neonatal observations (as above) are required.<sup>6</sup>
- **Near Term Newborn Infant (35<sup>+0</sup> - 36<sup>+6</sup> weeks) and / or 2.0kg – 2.5kg**

Temperature as for all neonates then 3-4 hourly before feeds until 24 hours of age. Temperature before feeds until the temperature has been within the normal range for a further 24 hours.
  - **Neonate of a mother given corticosteroids >34 weeks**

If the mother of a neonate was given corticosteroids beyond 34 weeks gestation, the neonate should have two lots of pre-feed plasma glucose levels (PGL) monitored and managed as per the [Neonatal Postnatal Wards Guidelines: Hypoglycaemia](#).

**Note:** The above section “Additional Observations” contains the minimum extra observations, and further observations may be required dependent on the individual clinical situation. If the neonate fits several categories, attend all relevant observations (as above), or as per documented plan by a Neonatal Medical Officer.

## Measurements for weight, length & head circumference

### Weight

- All neonates are weighed at birth.
- Daily weights and weight on day of discharge should be performed on all neonates who are:
  - Less than 2500g
  - Preterm (<37weeks)
  - Small for gestational age – less than the 10<sup>th</sup> percentile of birth weight for gestation at birth (see table below)

Birth weight of term neonates at the 10 <sup>th</sup> centile <sup>7</sup>		
Gestation (weeks)	Male (g)	Female (g)
37	2540	2430
38	2800	2690

39	2950	2830
40	3090	2975
41	3220	3090
42	3250	3110

See also KEMH Clinical Guideline Newborn Feeding, Breastfeeding Challenges, [Preterm, Low Birth Weight or Small for Gestational Age Baby](#)

- Neonates >2500g shall be weighed at birth, day 3 and day 5 after birth.

### Head circumference (HC)

- Measure HC at birth
- Measure HC on day of discharge if:
  - Any birth trauma has occurred causing alteration of normal expected HC e.g. haematoma or caput

### Length

- Measure length at birth

## References

1. Gray J, Smith R. **Midwifery Essentials: Australian and New Zealand Edition**. Sydney: Elsevier; 2009.
2. Mid Essex Hospital Services. The management of meconium stained liquor. 2013. Available from: <http://www.meht.nhs.uk/about-us/-/policies-and-guidelines/?assetdet82735=1733&p=3>.
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4. Royal College of Obstetricians and Gynaecologists. Green-top guideline No.36: The prevention of early-onset neonatal group b streptococcal disease 2012. Available from: [https://www.rcog.org.uk/globalassets/documents/guidelines/gtg36\\_gbs.pdf](https://www.rcog.org.uk/globalassets/documents/guidelines/gtg36_gbs.pdf).
5. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. C-Obs 19: Maternal group b streptococcus in pregnancy: Screening and management 2012. Available from: [www.ranzcog.edu.au](http://www.ranzcog.edu.au).
6. Centres for Disease Control and Prevention (CDC). Prevention of perinatal group b streptococcal disease. **MMWR**. 2010;59(RR-10). Available from: <http://www.cdc.gov/mmwr/pdf/rr/rr5910.pdf>.
7. Dobbins T, Sullivan E, Roberts C, Simpson J. Australian national birthweight percentiles by sex and gestational age, 1998-2007. **MJA**. 2012;197(5):291-4. Available from: [https://www.mja.com.au/system/files/issues/dob11331\\_fm.pdf](https://www.mja.com.au/system/files/issues/dob11331_fm.pdf)

## Related WNHS policies, procedures and guidelines

### KEMH Clinical Guidelines:

#### Obstetrics & Gynaecology:

- Labour & Birth: [Meconium Stained Amniotic Fluid](#)
- Neonatal Care: [Neonatal Hypothermia: Management if Temperature < 36.5°C](#); [Neonatal Examination](#) & [QRG](#); Neonate: [Immediate Care at Birth](#)

#### Neonatology:

- [Resuscitation Algorithm for the Newborn](#);
- [Weight, Length and Head Circumference Measurements](#);
- Neonatal [Recognising and Responding to Clinical Deterioration](#);
- [Sepsis: Septic Screening Procedures](#);
- [Sepsis Calculator: Assessment of Early Onset Sepsis Risk in Infants >35 weeks](#)

## Useful resources (including related forms)

Other related documents – KEMH: GP letter: Infant managed for risk of sepsis

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