



**OBSTETRICS AND GYNAECOLOGY DIRECTORATE
 CLINICAL PRACTICE GUIDELINE**

Neonatal care

Scope (Area)	All areas within WNHS Obstetrics & Gynaecology Directorate (OGD) that provide care to neonates (excludes neonates currently admitted to NICU)
Scope (Staff)	All WNHS OGD staff working with neonates
This document should be read in conjunction with this Disclaimer	

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Early neonatal care and observations

Key points

1. Ask the woman's consent before all procedures and observations.
2. For neonatal observations: Follow the instructions, document and escalate as per the Newborn Observation and Response Chart (NORC), including completing the Newborn Risk Assessment (on the NORC) within the first hour of birth. See also section below '[Additional observations](#)'.

Early care

1. At birth make an immediate assessment of the baby.
 - If stable then immediately place the baby skin-to-skin on the mother's chest. Continue skin-to-skin contact with the baby for at least 1 hour following birth.
 - If the baby is not stable or there is concern, clamp and cut the cord (as per below) then transfer them to the resuscitation cot/area and reassess or initiate resuscitation as appropriate
2. Dry the baby with a warm towel, remove the wet towel and cover the neonate with warm, dry blankets. The whole body and the head should be covered. Recommended air temperature to provide thermal protection¹ is 25 - 28°C.
3. Clamp and cut the umbilical cord. See also O&G [Labour: Third Stage](#) guideline.
4. Apply umbilical cord clamp 1-2 centimetres from the umbilicus.
 - For babies who require umbilical vein catheterisation, leave at least 4cm of cord between the umbilicus and the cord clamp.

Check the clamp security and then cut the cord on the distal side of clamp with the cord scissors. Ensure no bleeding from the site.

5. Assess and document the Apgar score at one minute and five minutes post birth.
6. Apply neonatal oxygen saturation probe to right wrist. This may be done whilst the baby is on the mother's chest.
7. Promote breastfeeding within the first hour of life by supporting skin to skin contact and allowing the baby to root and latch on spontaneously.
8. Apply two identification (ID) bands with the mothers UMRN, preferably one on each ankle (excluding home birth).

When the baby's own UMRN number has been issued, confirm the mother's details on the baby's identification bands match. Then replace the original identification bands (with the mothers UMRN on them) with two ID bands listing the baby's details, preferably one on each ankle.
9. If baby ≥ 35 weeks assess early onset sepsis score: [Sepsis Calculator: Assessment of Early-Onset Sepsis in Infants > 35 Weeks](#).

10. Perform and record in front of the mother / support person the:
 - cephalocaudal examination- see "[Examination](#)" section in this guideline
 - weight, length and head circumference
11. Apply nappy & clean, warm blankets.

Newborn feeding

See Newborn Feeding guidelines:

- Breastfeeding and Breastfeeding Challenges (e.g. [Preterm, Low Birth Weight or Small for Gestational Age Baby](#))
- Formula Feeding

Observations

Follow the instructions, document and escalate as per the Newborn Observation and Response Chart (NORC), including completing the Newborn Risk Assessment (on the NORC) within the first hour of birth. When three consecutive hourly heart rate, temperature and respiratory rates are within normal, observations can be ceased unless additional observations required. See section below 'Additional observations'.

Oxygen saturation

Continuous oxygen saturation monitoring is to:

- Commence as soon as possible following birth and before the midwife leaves the woman/baby
- Continue for 2 hours

Document SpO₂ and heart rate (HR) at commencement and cessation of SpO₂ saturation monitoring.

Community Midwifery Program (CMP) - For babies born at home with SpO₂ readings of <95%, consultation and transfer to the supporting hospital for further assessment is required. If after consultation the supporting hospital is not able to accept care, the Neonatal Senior Registrar or above at KEMH is to be consulted for transfer into KEMH.

If an oximeter is not available, the following assessment should be documented 15 minutely for the 1st hour, and then hourly for the next 2 hours:

- Respiratory rate
- Colour
- Unobstructed airway

Inform the mother and support persons to notify staff immediately of any changes in colour, tone, respirations and/or behaviour.

Related guidelines: See also Neonatology Postnatal Ward guideline: [Pulse Oximetry Screening to Detect Critical Congenital Heart Disease \(CHD\)](#) for screening requirements prior to discharge.

Additional observations

Observations to be performed in addition to those outlined above:

Additional risk factor/s	Additional observations required
<p>At increased risk of subgaleal haemorrhage (SGH)²</p> <p>- See Neonatology SGH Detection and Management in the Newborn guideline</p>	<p>Level one surveillance</p> <p>Indication: Instrumental birth (vacuum / forceps)</p> <p>Regimen:</p> <ul style="list-style-type: none"> • Baseline observations (including activity, colour, HR and RR) at one hour of age • Hats / beanies should be avoided (or removed frequently) so changing head shape / size can be noted • If concerns about neonatal behaviour (poor feeding or activity, pallor), perform another set of observations and institute level 2 surveillance
	<p>Level two surveillance</p> <p>Indication:</p> <ul style="list-style-type: none"> • Total vacuum extraction time > 20 minutes and / or 3 pulls and / or 2 cup detachments • 5 minute Apgar score < 7 • At clinician request • If level one surveillance observations are causing concern <p>Regimen</p> <ul style="list-style-type: none"> • Inspect and palpate the scalp with a full set of observations (including activity, colour, HR, RR, review of head size and shape, location and nature of swelling) at 1, 2, 4, 6, 8 and 12 hours.
	<p>Level three surveillance</p> <p>Indications: Clinical suspicion of SGH immediately following birth; abnormalities noted on level two surveillance:</p> <p>Regimen:</p> <ul style="list-style-type: none"> • Prompt review by neonatal resident medical officer (RMO), registrar, senior registrar or consultant

<p><u>Meconium Stained Amniotic Fluid</u></p>	<p>Assess 3 hourly (until 12 hours of age):</p> <ul style="list-style-type: none"> • Temperature, heart rate, respiratory rate, SpO₂ (also observe/document any abnormalities in chest wall movements, pattern & effort), tone, colour, feeding, general wellbeing. • If any observations are outside the normal parameters, escalate them to the neonatal medical team for review. <p>See full guideline: Meconium Stained Amniotic Fluid.</p>
<p>At risk of early onset <u>sepsis</u></p>	<p>Previous infant with invasive GBS disease- septic screen and treat. See also Sepsis: Neonatal (CAHS NICU guideline)</p> <p>All neonates ≥35 weeks (irrespective of mode of birth):</p> <ul style="list-style-type: none"> • Assess using the Neonatal Sepsis Calculator, and manage as per Neonatal Clinical Guideline: Sepsis Calculator: Assessment of Early-Onset Sepsis in Infants > 35 Weeks <p>Blood cultures taken: If the baby has had blood cultures 3 hourly observations are to continue until result available.</p> <p>Neonate on antibiotics: If the baby is on antibiotics 3 hourly observations are to continue until blood culture result available.</p>
<p>At increased risk of hypothermia (Preterm <37weeks) and / or Birthweight: <2.5kg)</p>	<p>Temperature 3-4 hourly before feeds until 24 hours of age</p> <ul style="list-style-type: none"> • Temperature before feeds until the temperature has been within the normal range for a further 24 hours • If transferred from SCN to the ward after 24 hours of age: Continue monitoring temperature before feeds for a further 24 hours <p>See also</p> <ul style="list-style-type: none"> • Temperature Instability (section in this guideline) • Thermoregulation (CAHS NICU guideline) • Newborn Feeding: Preterm, Late Preterm, LBW or SGA Baby (Obstetrics & Gynaecology guideline)

Note: Listed above are the minimum additional 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, and escalate as per NORC.

Monitoring of PGLs

For monitoring of PGLs, refer to the [Neonatal Postnatal Ward](#) Guideline: [Hypoglycaemia](#).

Measurements for weight, length and head circumference

Weight

- All babies are weighed at birth
- All babies >2500grams and ≥ 37 weeks are weighed on day 3 and 5 after birth
- Daily weights and weight on day of discharge should be performed on all babies who are:
 - < 2500grams
 - Preterm (<37weeks)
 - Weight loss >10%
 - Under phototherapy
 - Small for gestational age (SGA) – less than the 10th centile of birth weight for gestation at birth

Length

- Measured at birth

Head circumference

- Measured at birth
- Measured on day of discharge if any birth trauma to head (e.g. haematoma or caput)

Examination

The below pertains to all neonates that do not require immediate admission to Special Care Nursery.

<p style="text-align: center;">1. Preparation</p> <ul style="list-style-type: none"> • Parental consent • History • Environment • Neonatal identification- correct x2 • Neonatal temperature, respirations, heart rate and oxygen saturation 	<p style="text-align: center;">6. Abdomen</p> <ul style="list-style-type: none"> • Shape, colour and size • Umbilicus • Umbilical clamp secure • Number of cord vessels • Presence of obvious masses • Bowels sounds
<p style="text-align: center;">2. General overview</p> <ul style="list-style-type: none"> • Activity • Skin colour • Obvious abnormalities • Behaviour - crying sounds • Gestational age 	<p style="text-align: center;">7. Genitalia / anus</p> <ul style="list-style-type: none"> • Passage of urine <p>Males</p> <ul style="list-style-type: none"> • Penis, foreskin, testes, urethral meatus <p>Female</p> <ul style="list-style-type: none"> • Vaginal and urethral orifice • Vaginal discharge <p>Anus</p> <ul style="list-style-type: none"> • Anal patency- contraction on palpation • Passage of meconium
<p style="text-align: center;">3. Skin</p> <ul style="list-style-type: none"> • Colour • Rashes, nevi, skin integrity 	
<p style="text-align: center;">4. Head</p> <ul style="list-style-type: none"> • Shape and symmetry • Fontanelles and sutures • Head circumference • Eyes, ears, nose, mouth, philtrum, neck, chin • Hair • Bruising / abrasions 	<p style="text-align: center;">8. Musculoskeletal</p> <ul style="list-style-type: none"> • Arms, legs, hands, feet, digits • Shape, posture, length, deformities, talipes • Neck and Spine- dimples, malformations • Hips- dislocated or unstable • Clavicle- tenderness or fracture
<p style="text-align: center;">5. Chest</p> <ul style="list-style-type: none"> • Movement, recession, shape • Heart rate, rhythm and sounds • Colour • Respiratory rate • Signs of respiratory distress • Nipples and breast tissue 	<p style="text-align: center;">9. Neurological</p> <ul style="list-style-type: none"> • Test neurological reflexes (Moro, grasp, rooting, suck, stepping, traction response) • Muscle tone, posture, movements
	<p style="text-align: center;">10. Completion</p> <ul style="list-style-type: none"> • Record weight, length and head circumference • Document findings on MR 410 & 425.10 • Offer skin to skin contact • Advise parents of the findings • Notify paediatrician if detect abnormalities

Equipment

- Stethoscope with a neonatal diaphragm
- Neonatal History Sheet MR 410 or CMP Postnatal Record
- Environment: Overhead warmer or warm environment and adequate lighting
- If required: Weighing scales, tape measure, thermometer

Preparation

1. The examination should be delayed if the baby is cold or unwell.
2. Obtain maternal history including medical, pregnancy, previous obstetric history, labour and birth details.³⁻⁵
3. Ensure the baby has two identification bands in place (excluding home births) that match the mother. Refer to WNHS Policy: [Patient Identification](#): Neonatal Identification if missing or incorrect neonatal identifications bands.

Initial examination

- Perform the initial assessment after skin to skin / breastfeed has occurred.
- Where a midwife does the initial examination, a Medical Officer must perform a further complete physical examination within 24 hours.
 - *Note- The full physical examination of the well-newborn may be undertaken by either a Medical Officer, or a Midwife who fulfils the WNHS competency requirements for the Full Physical Examination of the Newborn (FPEON). Refer to DNAMER procedure document: [Full Physical Examination of the Newborn by a Midwife \(FPEON\)](#)
- **All abnormal findings should be reported to the Senior Registrar or Consultant for review.**

Management after examination

1. Discuss the findings with the parents.⁵
2. Notify the Neonatal Medical Officer if the examination findings suggest review is required earlier than routine Neonatal Medical Officer examination.
3. Offer the parents skin-to-skin contact with the baby after the examination.
4. Document all findings⁵ on the MR 410 Neonatal History chart or CMP postnatal record.

Neonates born at home with CMP

For babies born at home with the CMP, consultation is required with a Paediatric Consultant or Registrar at the supporting hospital to formulate a plan of management when any deviations outside the normal ranges are identified.

Safe infant sleeping

Refer to:

- WA Department of Health Safe Infant Sleeping Mandatory Policy (MP0106/19): [Safe Infant Sleeping Policy and Standard](#)
- WNHS [e-learning Safe Infant Sleeping](#) (via Moodle)
- WNHS [Safe Infant Sleeping Brochure \(PDF, 836KB\)](#) and the “After the birth of your baby: Safe Infant Sleeping” section of the KEMH [Pregnancy, Birth and Your Baby Book](#) (PDF, 7.2MB)

General neonatal care

Elimination

Refer to ‘Expected Outcomes’ sections of the Care of the Newborn Pathway.

Parental education should include discussion regarding:

- Normal patterns of urine output and stool excretion⁶.
- The possibility that urine may appear cloudy, from mucous or urates that may be passed in neonatal urine in the first few days.⁶ Urates found after the first few days, when fluid intake has increased, may indicate dehydration.⁶
- That a female may discharge white mucoid discharge or pseudo-menstruation resulting from circulating maternal hormones which may persist for the first few days.⁶

Nappy change and prevention / treatment of dermatitis

Parental education for prevention and management of nappy rash/dermatitis:

- Hygiene measures including hand washing⁷
- Clean female genitalia by wiping towards the anus when soiling is present.
- Frequent nappy changes⁸, and changing of nappy when soiled. Ensure the genital area is cleansed.⁷
- Avoid use of harsh soaps⁹ or detergents⁷, and products containing fragrances, preservatives and other ingredients with irritant or allergic potential.⁸ Use a soap substitute.⁹
- Use barrier creams only if the baby has frequent nappy rash. Barrier creams should not be routinely used.⁷ Apply during periods of nappy rash at each nappy change.⁹
- Allow some nappy free time when practical⁷

- If nappy rash is present, avoid baby wipes and use a damp cloth/cotton balls and soap substitute where possible.⁹ Some modern skin wipes may be used due to their mildness plus their containing of emulsion-type watery or oily lotions.¹⁰
- Observe the genital area for thrush which appears as a spreading centrifugal rash. Treat with Nystatin cream applied topically as directed.⁹ Review by a midwife, child health nurse or general practitioner (GP) is recommended.
- If there is inadequate response to treatment, parents should seek medical review.

Parent education

- Provide additional parent education - refer to section in the mother's clinical pathway.

Rooming-in

Mothers are encouraged to 'Room-In'. The baby remains at the mother's bedside, whether breastfed or formula fed.

This allows the baby flexible feeding routines, reduces risk of cross-infection, promotes bonding/attachment, and allows observation of infant behaviour. Rooming-in 24 hours decreases risk for cross-infection and risk of neonatal infections.^{11, 12} Studies have shown improved breastfeeding outcomes with rooming-in.¹³

Skin care

Observation

- Inspect the skin, including between digits, for rashes, septic spots, excoriation or abrasions with cleansing and nappy changes.¹⁴
- Observe for changes in skin colour⁶ e.g. jaundice, mottling, dusky, pallor, plethora

General principles

- Minimise length of time skin is exposed to irritants such as vomit, urine and stools, soiled or wet clothing.¹⁵
- Chemicals used in baby products can damage epidermal lipids and are unnecessary to care for the neonate's skin.¹⁴
- Peeling skin requires no treatment.^{6, 14} Usually post-term skin that is dry and cracked will shed within several days to reveal smooth skin.¹⁴
- Vernix assists with thermoregulation in the early hours following birth.⁶
- Report any abnormalities of the skin to the neonatal medical team for review.

Cleansing / bathing

- Defer bathing the baby until their temperature is stable above 36.5⁰C for at least two to four hours,¹⁶ (usually after the first 24hrs⁶) unless there is a risk of infection from the mother (e.g. maternal hepatitis B or HIV positive).
 - If risk of infection from the mother: Prior to administering injections the neonate should be bathed, or the injection site cleansed with an alcohol swab.
 - Related guidelines: Neonatology: [Hepatitis B Virus \(HBV\): Care of the Infant Born to HBV Positive Women](#) and O&G: [HIV Positive: Management of the Woman and her Neonate](#)
- The temperature of the water during bathing should be similar to the temperature of the inside of the adult's wrist.⁶
- It is preferable to bath the baby in water without baby shampoos or bubble baths for the first month.⁶
- Teach the parent to prepare all equipment and clothing before starting, maintain a draught-free warm environment, avoid exposing the neonate unnecessarily, and dry the neonate promptly and thoroughly.⁶
- In a baby that has had a temperature below 36 degrees, see [Hypothermia](#) section before bathing.

Umbilical cord care

Procedure

1. Clean the skin / cord junction when soiled (e.g. urine or stools or sticky material as cord separates) with a damp cotton bud.⁶ Do not use cotton wool balls as they may leave filaments behind.¹¹
2. Dry the skin / cord junction after bathing.¹¹
3. Instruct the parents on cord care, hand hygiene, and how to assess for signs of infection.¹¹
4. The nappy should be folded down to expose the cord at nappy changes until cord separates^{11, 17}
5. Observe the umbilicus and the surrounding area for signs of infection each shift and / or each nappy change. Signs of infection include:
 - swollen cord¹²
 - inflamed skin¹² e.g. redness or umbilical 'flare'⁶
 - 'smelly' cord (caused by anaerobic bacteria)
 - fever, lethargy or poor feeding (septicaemia)¹²
 - abnormal, serous or purulent discharge⁶ e.g. pus
6. Inform the neonatal team if /or when signs of umbilical cord abnormalities are evident or general signs of infection in the neonate are present.⁶ Rapid onset

neonatal septicaemia requires prompt medical review/treatment.⁶ Consider obtaining a swab from the site for microscopy and culture.¹¹

Transfer to community care

Refer to the woman's clinical pathway for parent education and Care of the Newborn pathway for care in the home. See also:

- Neonatology Postnatal Ward Guidelines:
 - [Discharge / Transfer of Healthy Infants from Postnatal Ward](#)
 - [Discharge/Transfer Planning: Quick Reference Guide](#)
- Obstetrics & Gynaecology guidelines:
 - Referrals : Visiting Midwifery Service (VMS) Referrals
 - [Visiting Midwifery Service \(VMS\): Readmission of a Baby/Babies to KEMH](#)

Neonatal complications

Acute deterioration

Follow the instructions, document and escalate as per the NORC.

Related guidelines:

- Recognising and responding to acute deterioration:
 - WNHS Policy: [Recognising and Responding to Acute \(Physiological\) Deterioration](#)
 - CAHS Neonatology: [Resuscitation Algorithm for the Newborn](#)
 - CAHS Neonatology: [Resuscitation](#)
 - Department of Health Policy [Recognising and Responding to Acute Deterioration](#)
 - Department of Health Guideline [Recognising and Responding to Acute Deterioration \(PDF 132KB\)](#) (section 3.5 Neonates)
- [Resuscitation Trolley: Equipment and Checking](#) (Adult & Neonatal)
- [Visiting Midwifery Service \(VMS\): Readmission of a Baby/Babies to KEMH](#)

Infection: At risk of Group B Streptococcal (GBS)

- Neonatology guideline [Sepsis: Neonatal](#)
- Neonatology guideline [Sepsis Calculator: Assessment of Early-Onset Sepsis in Infants > 35 Weeks](#)

Infection: Eye

Background information

Conjunctivitis is the most common neonatal infection, and bacterial infection is the most likely cause if it occurs within 2-5 days of birth. Refer to Neonatology guideline [Sepsis: Neonatal](#) if required.

Other causes that may mimic conjunctivitis such as foreign bodies, lacrimal duct obstruction, trauma and glaucoma should be excluded.¹⁸

Definitions and management

'Moist eyes'

- The eyelids may be oedematous and moist but there is no stickiness and no crusting of the lids. This is usually bilateral and simple sterile eye toiles should be given to these neonates.

'Sticky eyes'

- Mild eye infections are referred to as 'sticky eyes'. Frequent eye cleansing with sterile cotton wool moistened with normal saline may be all that is required.¹⁹
- **Note: If there are any doubts about eye discharge / infection with possible purulent discharge, inform the neonatal team immediately.**

Purulent eye infection (conjunctivitis)

- Purulent discharge from eyes may result from congenital or acquired infection.
- Perform eye toilet and inform the paediatrician/neonatal Registrar or RMO.
Note: If there are any doubts about eye discharge / infection with possible purulent discharge inform the neonatal team immediately.
- See also Neonatology guideline [Sepsis: Neonatal](#).

Eye toilet

Equipment

- Sterile cotton balls
- Sterile sodium chloride 0.9%
- Non sterile gloves

Procedure

1. Explain the procedure to the mother/parents.
2. Perform hand hygiene
3. Open the cotton wool balls and pour the sodium chloride over them
4. Perform hand hygiene, then put on a pair of non-sterile gloves
5. Clean the least effected eye first

6. Gently wipe across eyelids starting at the inner canthus and moving laterally to the outer canthus. Discard the swab after one sweep. Continue until the eyelids appear clean.²⁰
7. Perform hand hygiene, then document.

Specimen collection

Refer to [Sepsis: Neonatal](#) for instruction regarding collection of bacterial / viral eye swabs.

- Specimens are collected from each eye
- Perform an eye toilet after collection of the swabs

Treatment of eye infections

- Refer to [Sepsis: Neonatal](#). Also see [Neonatal Medication Protocols: A-Z](#) for individual antibiotic treatment.
- Perform eye toilet prior to administering eye medications.
- Provide verbal instructions to the mother about the technique of instilling eye medication, the expiry date of the medication, storage, and hygiene measures prior to discharge if the treatment has not been completed.

Newborn feeding issues

See Newborn Feeding guidelines:

- Breastfeeding
- Breastfeeding Challenges (e.g. [Preterm, Low Birth Weight or Small for Gestational Age Baby](#))
- Formula Feeding

Palliative care and perinatal loss

- Obstetrics guidelines: [Perinatal Loss](#) and [Deceased Patient Management](#)
- CAHS Neonatology guideline: [End of Life Care](#)

Temperature instability

Effects of rapid heating/cooling

Neonates are to be warmed or cooled slowly to prevent rapid metabolic changes, vasodilation/ constriction and shock.

- Aim to raise or lower the temperature by 0.5°C per hour
- During warming/cooling, check the axilla temperature 15 minutely.²¹

See CAHS Neonatal Clinical Guideline – [Thermoregulation](#) for information on normal temperature ranges for neonates.

Key points

1. Response and escalation of abnormal observations as per NORC.
2. Neonatal hypothermia can lead to increased oxygen consumption²², increased risk of hypoglycaemia²² and if untreated can lead to neurological complications, hyperbilirubinemia, clotting disorders, and even death.²³
3. A neonate under a radiant cot warmer **must not** be left unattended.
4. Maternal and neonatal history should be reviewed for any neonate with hypothermia to exclude any conditions which may lead to hypothermia. Consideration should be given to infection being the cause.
5. The Neonatal Resident or Registrar should be informed if a neonate, after treatment/management of hypothermia, is unable to maintain its temperature within the normal range.

Neonatal temperature between 36°C - 36.5°C

1. Where possible initiate skin-to-skin contact with the mother to improve thermoregulation, promote maternal bonding, and decrease the need to separate the baby from the mother. This is done by placing the undressed, nappy clad baby against the mother's chest between her breasts facing her and covering the neonate and mother with warm blankets. The blankets should cover the baby up to the neck but should not cover the head. Ensure the maternal skin is dry and the baby has a hat on.²³
2. If the temperature is still decreasing after 30 minutes of skin-to-skin contact, or if there are any symptoms of neonatal distress²³, cease skin-to-skin contact. Take the neonate to the ward nursery and place on the radiant warmer, consult the shift co-ordinator and consider if a medical review is required, as per NORC.
3. Assess for any risk factors or signs of an underlying pathological condition which may cause hypothermia.²³
4. When the neonatal temperature returns to the normal range the neonate may be dressed with warmed clothing, including a bonnet, and wrapped warmly.
5. Monitor temperature hourly for 3 hours to ensure the temperature remains stable
6. Document the management contemporaneously

Neonatal temperature below 36°C

In circumstances requiring rapid rewarming the baby should be placed under an overhead radiation heat source.²⁴ In the wards at KEMH a neonatal resuscitation cot is used.

When placing the baby under the radiant heater:

- Inform the Shift Co-ordinator and consider if medical review is required.
 - Ensure the radiation heat source/resuscitation cot is not near an open door or exposed to draughts.
 - Ensure the heater is on and warmed prior to undressing and placing the neonate under the heater.
 - The neonate must not be left unattended while under the warmer.
 - The neonate is placed under the warmer naked except for a bonnet. Ensure the neonate is dry to prevent evaporative heat loss.²²
 - Attach servocontrol (if available) to the abdominal skin and set it at 36.6°C.
 - Monitor the temperature and record 15 minutely while under the warmer.
 - When the temperature is 36.5°C or above, remove from the warmer, dress including a bonnet and wrap well in pre-warmed clothing and blankets.
- Document management.
- Monitor the temperature hourly for 3 hours after removal from the radiant heat source.
 - Delay bathing until six consecutive hours of normal temperature range has been maintained.

Other (e.g. jaundice, hypoglycaemia)

See [Neonatal Postnatal Wards](#) guidelines for care managed on the postnatal ward for jaundice, pulse oximetry screening to detect CHD, cardiac conditions, hypoglycaemia, vitamin D deficiency, thyroid disorders, tongue tie, sacral dimples, renal dilatation, male circumcision, Developmental Dysplasia of the Hips (DDH), neonates born to mother who is HBV or HBC positive, maternal medication substance use and neonatal assessment.

For neonates within the NICU, refer to [Neonatology](#) guidelines.

Blood collection from a neonate

Key points

1. The Phlebotomy Team is available on Page Number 3258 and 3259 for collection of blood specimens of difficult bleeds between 1400 and 1500 weekdays.
2. Collection of blood specimens takes place Monday to Friday, Round 1 between 0800 and 1000, and Round 2 between 1030 and 1200.
3. Printed neonate addressograph labels may be used to label specimens **except** Transfusion Medicine samples.²⁵
4. All Transfusion Medicine samples must be handwritten and initialled by the collector, with date and time of collection.²⁵ The collector must sign the “Collection Details” section of the request form.²⁵ This includes the Coombs test (direct / indirect) / direct antiglobulin test (DAT).
5. Venepuncture for neonatal blood collection when done by a trained practitioner causes less pain than a heel lance²⁶, therefore at KEMH if a large amount of blood is to be collected (e.g. Newborn Screening test and additional blood tests) then venepuncture should be considered.
6. For procedural instructions of collecting capillary blood from a neonate, see Neonatology Clinical Guideline: [Blood Sampling: Capillary, Venepuncture, Peripheral Arterial, UAC, UVC and CVC](#).

Safety points for collection of blood specimens

- Safe collecting procedures should be followed.
 - [Infection Prevention and Management](#) (including Prevention & Management of Healthcare Associated Infections: [Standard Precautions](#) & [Hand Hygiene](#))
 - [Haematology](#) and [Transfusion Medicine](#) protocols (if relevant)
 - [Capillary Blood Collection \(Heel Puncture\)](#) (section in this guideline) and Neonatology guideline: [Blood Sampling: Capillary, Venepuncture, Peripheral Arterial, UAC, UVC and CVC](#) (for procedural instructions).
- Work with only one neonate at a time.
- The request form must be completed and signed by the Medical Officer / Midwife (selected tests only) or CPOE (electronic order form) with requesting Medical Officer details. For Registered Midwives requesting pathology tests, see KEMH Policy: Standard Protocols.

Do not proceed with specimen collection if any discrepancies are noted on the request form. Contact the Medical Officer to complete request form or re-issue.

- The neonate must have their own identity band prior to collection of blood (except cord blood).
- Label the sample at the bedside immediately after collection.
- Baby specimens must be labelled with **THREE** points of identification:
 - baby UMRN²⁵ and
 - baby last name²⁵ and
 - baby first name if this is registered in TOPAS (**if no first name, DOB must be used**²⁵ –
 - if neonate is from a multiple birth and the neonate does not have a first name, use DOB plus identify multiple on specimen e.g. TW1 (twin 1), TR3 (triplet 3) etc.²⁵ Ensure the label, pathology request form and neonate matches, otherwise the sample will be rejected for testing.²⁵
 - date and time of collection **plus the initial of collector** • Sign the “collection details” on the request form.
- Place the label horizontally. Ensure that if a pre-printed label is used, that there is a gap at the back of the tub, and that the label does not extend past the end of the tube.
- Enclose the sample and form into a biohazard bag
- Check with a second midwife that the details on the blood sample match the baby’s identification label and the request form before sending it to the laboratory.

Hints to reduce clotting problems when collecting a blood specimen

- Never shake or tap the blood tube
- Gentle swirling of the blood tube during collection
- Ensure gentle inversion of the tube once the lid is applied

Capillary blood collection (heel puncture)

Key points

1. It is not necessary to warm the heel to facilitate blood flow to the area prior to lancing.⁶ Unsafe heel warming practices may lead to skin burns⁶, instead dress the infant warmly prior to the blood collection and minimise unwrapping.^{6, 27} This increases peripheral blood supply.²⁷
2. Whenever possible, invite the mother to be involved in the procedure, using skin to skin contact or breast feeding.^{6, 28} When this is not possible, sucrose and non-nutritive sucking may be used.^{26, 28, 29}

3. Avoid squeezing the heel as this causes unnecessary pain, bruising, and limits perfusion.
4. Wait 5 seconds after capillary heel puncture to avoid initial vasoconstriction.³⁰

Procedure

For equipment and general procedure, see Neonatology guideline, [Blood Sampling: Capillary, Venepuncture, Peripheral Arterial, UAC, UVC and CVC](#): Capillary Blood Sampling.

Additional points-

- Methods to reduce pain for the neonate:
 - Skin-to-skin contact with the mother²⁹
 - Swaddling/containment/ rocking^{26, 29}
 - Breastfeeding^{6, 28} / feeding
 - Administration of oral Sucrose^{26, 31} if available. For indications and dosage see Neonatology Guideline: [Pain Assessment and Management](#).
- Encircle the foot with the palm of the hand and the index finger.³²
- Wipe away the first drop of blood with gauze⁶ as it may be diluted by interstitial fluid.²⁷
- Avoid squeezing the heel – it causes or increases pain for the neonate, dilutes the sample with tissue fluid, and can cause haemolysis and soft tissue damage.²⁷

Newborn bloodspot screening (Guthrie)

See [WNHS e-learning Newborn Bloodspot Screening Test \(NBST\)](#) for updating knowledge on newborn bloodspot screening (often called the “Guthrie Test”).

Key points

1. Offer testing for ALL neonates³³ between 48 - 72 hours of age.³⁴⁻³⁶
2. The screening test does not replace investigation of symptoms, as screening does not detect all cases.³⁴
3. The family will be contacted **only** if results require further investigation.

Procedure

For equipment and procedure, see Neonatology Clinical Guidelines:

- [Newborn Screening Test](#)
- [Blood Sampling: Capillary, Venepuncture, Peripheral Arterial, UAC, UVC, CVC](#)

Additional points-

1. Prior to collection, ensure parents have been provided with the information

pamphlet [‘Your Newborn Baby’s Screening Test’](#) or the KEMH [Pregnancy, Birth and Your Baby Book](#) (PDF, 7.2MB) (see section: “After the birth of your baby: Tests and medications for your baby during the first few weeks of life: Newborn blood spot screening test”). The pamphlet is available in other languages, see HealthyWA website: [Your Baby’s Newborn Bloodspot Screening Test](#)).³⁵

2. Discuss the procedure with parents,^{33, 34} obtain verbal consent³⁵ and record/check their written consent to collection and testing on MR216 (KEMH Information & Consent for Newborn Care). The form must also show the date of consent, who consented and who obtained the consent.
 - Where parents **do not give consent** for the test:
 - Do not perform the test. Discuss the parent’s concerns & document reason. Ensure parents document & sign if they have declined (on neonatal consent MR216), including that they are fully informed of the test and consequences of not testing.³⁷
 - Write REFUSED and the NEONATES DETAILS on the neonatal screening card and send to QEII Department of Clinical Biochemistry. Document in baby’s medical record and purple child health record and sign.
 - Parents are advised to seek medical advice if their baby is unwell and to ensure their GP knows that NBST was not collected.
3. Refer to the procedure instructions on reverse of card. Collect blood as per CAHS KEMH Clinical Guideline, Neonatology: [Blood Sampling: Capillary, Venepuncture, Peripheral Arterial, UAC, UVC and CVC](#): Capillary Blood Sampling.
4. Ensure that blood has penetrated both sides of the card. Do not rush the procedure and allow sufficient time for the blood drops to collect. Do not layer new blood over partially dry blood from a previous attempt.³²
5. Document the NBST card number, sample collection date and time in the following places:
 - Neonatal History – MR 410 (VMS do not need to document here)
 - Care of the Well Neonate – MR 425.10 (Box provided on the front page)
 - Perinatal Database (Stork)
 - Ensure that all the required information is documented on the card.
 - Additional details which are assessed during analysis and may affect the results include:
 - Meconium plug/meconium ileus
 - Family history of cystic fibrosis in siblings
 - Pre/post blood/exchange transfusion
 - IV TPN
 - For neonatal deaths the NBST card may be used to collect a sample. Mark the card “neonatal death”.

Additional points relevant to collection in the home (VMS / CMP / Midwifery Group Practice (MGP))

- Check the baby's identity with the parent/ carer
- Document the NBST card number, sample collection date and time in the following places:
 - Care of the Well Neonate pathway (MR 425.10)
 - Perinatal database STORK
 - CHN Summary sheet
- Samples collected off-site need to be dried on a storage rack within a cooler box in the midwife's car.
- After entering on STORK, place in the NBST drying tray. See [Procedure for Transport of NBST Cards](#) on next page.
- In VMS, MGP 4 and 5- The coordinator is responsible for delivery to KEMH Pathology Specimen Reception for dispatch to QEII Biochemistry as soon as possible.

Additional resources

See also:

- Government of Western Australia Department of Health
 - [WA Newborn Bloodspot Screening Program](#) (external website)
 - [Resources for midwives and nurses on the Newborn Bloodspot Screening Program](#) (external website)
 - [Conditions screened for in the WA Newborn Bloodspot Screening Program](#) (external website)
 - Mandatory Policy [*currently under development*]
- Australian Government Department of Health:
 - [Newborn Bloodspot Screening](#) (external website)
 - [Resources](#) (external website)
- Australian Health Ministers' Advisory Council (AHMAC): [Newborn Bloodspot Screening National Policy Framework \(external website\)](#) (2018)

Procedure for transport of NBST cards

Transport on the day of collection or within 24 hours (including weekends).

Wards, VMS and hospital MGP (where returning to hospital within 24 hours)



Ward Clerk* collects cards from drying racks (dry cards only).

(*VMS, MGP 4 & 5: the coordinator sends)



Places cards into small buff envelope "Exempt Human specimen" envelope which is placed into the White envelope marked "WA Newborn Screening"



White envelope is placed into the chute (or taken down) to PathWest Laboratory at WNHS by 1500hrs.

CMP, VMS and MGP when not returning to hospital within 24 hours

NBST completed by Midwife



Once card is dry, card is placed by the Midwife into the small buff envelope which is placed inside the larger white envelope (as above)



White envelope to be placed in a **Post Office postal box only**, not a street postal box.

Medication administration

Vitamin K

For background information, including Vitamin K deficiency bleeding in the newborn, and information to provide to parents, refer to:

- KEMH [Pregnancy Birth and Your Baby book \(PDF 7.2MB\)](#) (section 'After the birth of your baby: Tests and Medications: Newborn Vitamin K')
- [NMHRC Joint Statement and Recommendations on Vitamin K Administration to Newborn Infants to Prevent Vitamin K Deficiency Bleeding in Infancy'](#) (external website, PDF 1.98MB)
- [NHMRC 'Vitamin K for Newborn Babies' parent information brochure](#) (external website) available in several languages

For Vitamin K prescribing and administration, refer to KEMH Clinical Guidelines:

- Pharmaceutical and Medicines Management: [Medication Administration](#) Section 13: Administration of Medications to Neonates (available to WA Health employees through Healthpoint)
- Neonatology Medication Monograph: [Phytomenadione \(Vitamin K\)](#)

Hepatitis B and Hepatitis B immunoglobulin

See KEMH Obstetrics & Gynaecology guideline: [Vaccinations](#)

Intramuscular administration to the neonate

For intramuscular injections (IMI) to neonates, see Intramuscular section in Neonatology guideline - [Medication Administration: Intramuscular, Subcutaneous, Intravascular](#)

Intravenous administration to neonates

See Pharmaceutical and Medicines Management guideline: [Medication Administration](#): Administration of Medications to Neonates.

Neonatal medication competency requirements and general principles of medication administration

See Pharmaceutical and Medicines Management guideline: [Medication Administration](#)

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Related legislation and policies

Australian Health Ministers' Advisory Council (AHMAC): [Newborn Bloodspot Screening National Policy Framework](#) (external site, PDF 6MB) (2018)

Department of Health Western Australia:

- [Safe Infant Sleeping](#): MP 0106/19: [Safe Infant Sleeping Policy](#) (PDF 198KB), [Standard](#) (PDF 623KB) and [Compliance Tool](#) (xlsx 107KB)
- Recognising and Responding to Acute Deterioration [Mandatory Policy \(MP 0086/18\)](#);

[Webpage](#) and [Guideline \(PDF 132KB\)](#) (section 3.5 Neonates)

- [OD 0239/09 - Newborn Hearing Screening](#)

NMHS Policy- [Recognising and Responding to Acute Deterioration](#)

Related WNHS policies, procedures and guidelines

DNAMER competency document: [Full Physical Examination of the Newborn by a Midwife Haematology](#) and [Transfusion Medicine](#) guidelines

Obstetrics & Gynaecology:

- [Group B Streptococcal Disease](#) (antenatal screening, intrapartum antibiotics)
- Intrapartum: [Labour: Third Stage](#); [Meconium Stained Amniotic Fluid](#);
- Newborn feeding guidelines: Breastfeeding, Breastfeeding Challenges and Formula Feeding; [Preterm, Low Birth Weight or Small for Gestational Age Baby](#)
- Referrals: Visiting Midwifery Service (VMS): Referrals
- [Resuscitation Trolley: Equipment and Checking](#) (Adult & Neonatal)
- [Perinatal Loss](#) and [Deceased Patient Management](#)
- [Pathology and Ultrasound Ordering by Midwife/Nurse/Nurse Practitioner](#): Neonatal Cord Blood Group: Request
- [Vaccinations](#): Hepatitis B and Hepatitis B Immunoglobulin
- [Visiting Midwifery Service \(VMS\): Readmission of a Baby/Babies to KEMH](#)

Neonatology (CAHS):

- [Blood Sampling: Capillary, Venepuncture, Peripheral Arterial, UAC, UVC and CVC](#)
- [Blood Tests: Ordering](#) (neonates in SCN)
- [End of Life Care](#)
- [Medication Administration: Intramuscular, Subcutaneous, Intravascular](#)
- [Pain Assessment and Management](#)
- [Recognising and Responding to Clinical Deterioration](#) (Neonatal)
- [Resuscitation: Emergency Transfusion of O-Negative Blood in Theatre](#)
- [Resuscitation: Neonatal](#)
- [Resuscitation Algorithm for the Newborn](#);
- [Sepsis: Neonatal](#)
- [Subgaleal Haemorrhage \(SGH\) Detection and Management in the Newborn](#)
- [Thermoregulation](#)
- [Weight, Length and Head Circumference Measurements](#)

[Neonatal Postnatal Ward](#) guidelines KEMH (CAHS)

- [Antenatal Renal and Urological Anomalies](#) and [Referral](#)

- [Cardiac Murmur](#) and [QRG](#)
- [Circumcision of Infant Males](#)
- [Developmental Dysplasia of the Hips \(DDH\)](#)
- [Discharge / Transfer of Healthy Infants from Postnatal Ward](#) and [QRG](#)
- [Falls - Care of a Newborn Following a Drop / Fall](#)
- [Hepatitis B Virus: Care of the Infant Born to HBV Positive Women](#) and [QRG](#)
- [Hepatitis C Virus: Care of the Infant Born to HCV Positive Women](#) and [QRG](#)
- [Hypoglycaemia](#)
- [Jaundice](#)
- [Maternal Medication Substance Use; Assessment Charts](#) and [QRG](#)
- [Maternal Vitamin D Deficiency](#) and [QRG](#)
- [Pulse Oximetry Screening to Detect Critical Congenital Heart Disease \(CHD\)](#)
- [Sacral Dimples or Pits](#)
- [Sepsis Calculator: Assessment of Early-Onset Sepsis in Infants > 35 Weeks](#)
- [Thyroid Disorder: Infant Born to Women with Thyroid Disorders](#) and [QRG](#)
- [Tongue Tie \(Ankyloglossia\)](#) and [QRG](#)

Pharmacy

- [Medication Administration](#) (staff checks, neonatal administration)
- [Neonatal Medication Protocols](#) (A-Z for individual medication / antibiotic treatment)

WNHS Policies:

- [Recognising and Responding to Acute \(Physiological\) Deterioration](#)
- [Patient Identification](#): Neonatal

WNHS [Emergency Management Code Black Procedures](#) (available to WA Health employees through HealthPoint) See Code Black Alpha– Infant abduction procedures, appendices and action cards.

Useful resources (including related forms)

- Department of Health WA, WNHS e-learning:
 - [e-learning Newborn Bloodspot Screening](#) (via Moodle)
 - [e-learning Safe Infant Sleeping](#) (via Moodle)
- Newborn bloodspot screening:
 - PCH [Newborn Bloodspot Screening](#)
 - Government of Western Australia Department of Health
 - [WA Newborn Bloodspot Screening Program](#) (external website)
 - [Resources for midwives and nurses on the Newborn Bloodspot Screening Program](#) (external website)

- [Conditions screened for in the WA Newborn Bloodspot Screening Program](#) (external website)
 - Australian Government Department of Health:
 - [Newborn Bloodspot Screening](#) (external website)
 - [Resources](#) (external website)
 - Australian Health Ministers' Advisory Council (AHMAC): [Newborn Bloodspot Screening National Policy Framework \(external website\)](#) (2018)
- Information for parents:
 - HealthyWA website [Your Baby's Newborn Bloodspot Screening Test](#) (external site) (includes patient information in other languages)
 - HealthyWA brochure- [Your Newborn Baby's Screening Test](#) (external site, 1MB)
 - WN HS [Pregnancy, Birth and Your Baby Book](#) (PDF, 7.2MB)
 - WNHS [Safe Infant Sleeping Brochure](#) (PDF, 844KB)

Forms

- MR 216 Information & Consent for Newborn Care
- MR 409.90 Neonatal Management Plan
- MR 410 Neonatal History
- MR 419 Newborn Hearing Screening Parent Consent and Screening Record
- MR 420 Neonatal Inpatient Progress Sheet
- MR 426 Newborn Observation and Response Chart
- MR 426.10 Care of the Well Neonate
- MR 425.11 Care of the Well Neonate Continuation Form
- MR 811 Neonatal Inpatient Medication Chart
- Perinatal Database (Stork) including CHN and GP Summary sheets
- KEMH: GP letter: Infant managed for risk of sepsis

Keywords:	adaptation to extra uterine life, APGAR, neonatal care following birth, neonatal assessment following birth, recognise clinical deterioration, immediate assessment of the newborn, neonatal observations following birth, neonatal oxygen saturation, neonatal O2 sats, meconium obs, GBS obs, preterm obs, neonatal measurements, newborn observations, neonatal vital signs, baby obs, neonatal infection, eye infection, conjunctivitis, ophthalmia neonatorum, puffy eyes, sticky eyes, nasal lacrimal duct obstruction, moist eyes, neonatal eye care, eye toilet, sudden unexpected death, SUDI, sudden infant death syndrome, SIDS, prevention of SIDS, reduction of SUDI, safe sleeping, reduction in risk for SUDI, perinatal loss, neonatal death, neonatal hypothermia, cold baby, neonatal blood collection, capillary blood collection, blood sampling neonates, neonatal blood tests, heel stab, heel prick, Guthrie, neonatal metabolic screening, newborn screening, bloodspot screening, sucrose, neonatal screen, venepuncture, heel stab, heel puncture, oral sucrose for procedural pain, CBG,
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	capillary blood, blood collection from a neonate, umbilical cord, cord care, umbilical cord care, postnatal education, postpartum education, neonatal care, swaddling, rooming-in, diaper rash, nappy rash, nappy dermatitis, thrush, nystatin, neonatal examination, newborn assessment, quick reference guide, QRG, cephalocaudal check, head to toe check, neonatal day 1 check, home check, neonatal discharge check, neonatal physical exam, neonatal transfer to home, VMS, visiting midwifery		
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Supersedes:	<p>V2 (May 2021) supersedes v1 (June 2020)</p> <p>History: In June 2020 amalgamated content from 13 individual guidelines on care of the neonate dating from August 1999.</p> <p>Supersedes:</p> <ol style="list-style-type: none"> 1. Blood- Collection from a Neonate (B10.3.3) (dated Sept 2015) 2. Blood- Capillary Collection from a Neonate (Heel Stab) (B10.3.3.1) (date last amended February 2015) 3. Blood- Newborn Bloodspot Screening (dated Feb 2017) 4. Neonatal Examination (date last amended Feb 2015) 5. Neonatal Examination QRG (dated June 2016) 6. Neonatal Care: Eye Infections (dated Feb 2019) 7. Neonatal Care: Immediate Care for Babies (dated Nov 2018) (superseded 'Neonatal Care for Babies Born in Labour and Birth Suite' and 'Neonatal Care for Babies NOT Born in LBS') 8. Neonatal Care on the Ward (dated Oct 2015) 9. Neonatal Hypothermia: Management if Temperature <36.5°C (dated Oct 2014) 10. Neonatal Observations (date last amended Feb 2019) 11. Sudden Unexpected Death in Infancy (SUDI): Strategies to Reduce (dated March 2014) 12. Vitamin K administration: Neonate (dated March 2018) 13. Community Midwifery (CMP): Neonatal Observations (dated June 2016) 		
Approved by:	KEMH Head of Department Neonatology	Date:	20/05/2021 (v2)
Endorsed by:	Obstetrics & Gynaecology Directorate Management Committee [OOS approved by Medical and Midwifery Co directors]	Date:	20/05/2021 (v2)
NSQHS Standards (v2) applicable:	<input checked="" type="checkbox"/>  1: Clinical Governance <input type="checkbox"/>  2: Partnering with Consumers <input checked="" type="checkbox"/>  3: Preventing and Controlling Healthcare Associated Infection <input checked="" type="checkbox"/>  4: Medication Safety	<input type="checkbox"/>  5: Comprehensive Care <input checked="" type="checkbox"/>  6: Communicating for Safety <input checked="" type="checkbox"/>  7: Blood Management <input checked="" type="checkbox"/>  8: Recognising and Responding to Acute Deterioration	
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