Local Guideline





Minimum Standard of Nursing care and assessment in NICU/HD/SCN

Sites where Local Guideline applies NICU, SCN & HDU, JHCH.

This Local Guideline applies to:

Adults No
 Children up to 16 years No
 Neonates – less than 29 days Yes

Target audienceAll neonatal clinical staff, who provide care to neonatesDescriptionThe guideline provides information about neonatal

assessment to ensure escalation of treatment occurs as

necessary

Hyperlink to Guideline

Keywords Clinical handover, Equipment, Escalation, National

competency standards, Neonate, Physical assessment,

Purple Butterfly, JHCH, NICU

Document registration number JHCH_NICU_03.07

Replaces existing document?

Related Legislation, Australian Standard, NSW Ministry of Health Policy Directive or Guideline, National Safety and Quality Health Service Standard (NSQHSS) and/or other, HNE Health Document, Professional Guideline, Code of Practice or Ethics:

- HNELHD PD2013 043:PCP 31 Medication Safety in HNE Health
- NSW Health Policy Directive PD2017_013 Infection Prevention & Control Policy
- NSW Health Policy Directive PD2017 032Clinical Procedure Safety
- NSW Health PD2014 024 'Patient Identification Bands'

Prerequisites (if required)	N/A
Local Guideline note	This document reflects what is currently regarded as safe and appropriate practice. The guideline section does not replace the need for the application of clinical judgment in respect to each individual patient but the procedure/s require mandatory compliance . If staff believe that the procedure/s should not apply in a particular clinical situation they must seek advice from their unit manager/delegate and document the variance in the patients' health record.
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Note: Over time links in this document may cease working. Where this occurs please source the document in the PPG Directory at: http://ppg.hne.health.nsw.gov.au/

RISK STATEMENT

This local guideline has been developed to provide guidance to clinical staff in NICU to assist in the assessment of the neonate by observations and physical assessment. It ensures that the risks of harm to the infants whilst assessing and monitoring are identified and managed.

Any unplanned event resulting in, or with the potential for injury, damage or other loss to infants/staff/family as a result of this management must be reported through the Incident Information management System and managed in accordance with the Ministry of Health Policy Directive: Incident managementPD2007_061. This would include unintended injury that results in disability, death or prolonged hospital stay.

Risk Category: Clinical Care & Patient Safety

GLOSSARY

Acronym or Term	Definition
BSL	Blood Sugar levels
EBM	Expressed breast milk
HAIDET	Acronym for Hands; Acknowledge; introduction; Duration; Explanation; Thankyou/ tidy up/time
HDU	High Dependency Unit
NETS	Neonatal Emergency transport Service
NICU	Neonatal Intensive Care
SBR	Serum Bilirubin level
SCN	Special Care Nursery

OUTCOMES

1	All neonatal patients have appropriate general nursing care undertaken
2	Appropriate and timely escalation and management of the deteriorating neonate

Minimum Standard of Nursing care and assessment in NICU/HD/SCN

- One Page Summary and Checklist(Ctrl+Click on Coloured words to jump to that section)

Minimum Standard of Nursing Care for Newborns in NICU/HD & SCN

Family Centred Care

Checking Equipment and Environment

Clinical Monitoring and Management Assessment

Physical Assessment-see Appendix 1

Vital Signs Assessment

Airway

Breathing

Circulation

Environment-Temperature

Nutrition

Miscellaneous

Appendix 1 Physical Assessment

Appendix 2 Purple Butterfly Sticker

Minimum Standard of Nursing Care for Newborns in NICU/HD/SCN top Introduction

The Nursing and Midwifery Board of Australia outlines in the National competency standards for the registered nurse No 5, the importance of nursing assessment. A nurse is required to "conduct a comprehensive and systematic nursing assessment" on patients as part of their day to day clinical work.

Aim

This document is to identify the minimum standard of nursing care expected for all babies who are admitted into the Neonatal Intensive Care, High Dependency and the Special Care Nursery at the John Hunter Children's Hospital Newcastle.

Assessment

Admission assessment

A comprehensive nursing assessment includes history, general appearance, physical examination and vital signs. It is attended at the time of admission, and when a baby is transferred from the delivery suite, postnatal ward, emergency department, or transferred in by NETS retrieval.

The admission assessment is detailed and outlined in the <u>JHCH_NICU_01 Admission of babies to NICU</u>, HDU and SCN

Shift Assessment

This is a concise nursing assessment that is carried out at the commencement of each shift which includes the patient history, general appearance, physical examination and vital signs (current and trends for previous 24-48 hours). At the start of a shift all nurses should be given a one to one handover from the nurse who has worked the previous shift. Refer to "Clinical Handover in NICU" CPG –JHCH_NICU_03.05.

It is important to adhere to the principles of family centre care when assessing any newborn. This can be achieved by adherence to the following principles (Queensland Government, 2014)

Aspect	Consideration
Dignity and	Always seek parental consent before examining their newborn if
respect	they are present
	Listen to and honour parent views and choices regarding planning
	and delivery of care
	Respect family values, beliefs and cultural background and
	consider culturally appropriate supports (e.g. indigenous liaison
	personnel or an interpreter)
Sharing	 If parents are present, communicate fully and involve the
information	parents.
	 Ask the parent/s about their concerns for their newborn
	 Ensure information is shared in a complete, unbiased and timely
	manner to ensure parents can effectively participate in care and
	decision making
Participation	Parents are encouraged to participate in care and decision making
and	at the level they choose. Parents will require guidance from staff
collaboration	regarding involvement as gestation and condition of the infant may
	affect their participation.

Handover (JHCH_NICU_03.05 Clinical Handover in NICU)

- Staff will introduce themselves to parents, if present, using the HAIDET tool
- Patient History supported by NICU admission sheet
- Current clinical progress
- Specific clinical issues and treatment
- Review of medication chart identify any medications that require re-writing on the round or before. Identify any medications that may have been omitted on the previous shift.
- Review the fluid charts calculate fluid orders to ensure they are correct and review and check all hung fluids and infusions against fluid charts. Calculate glucose and electrolyte load to ensure correct rate. Refer to CPG JHCH_NICU 'Hypoglycaemia Screening and Management'
- Check all resuscitation & suction equipment is available and working
- Monitor alarms are set within the prescribed limits Refer to CPG-JHCH NICU 03.06 'Monitoring of the infant in NICU'
- Review all infusion pumps to ensure correct volume is infusing and burette has correct amount of fluid
- Hourly handover sheet checked against patient and signed
- Review last 24hrs observations on chart and seek clarification on abnormal data

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- Check there are 2x forms of patient identification attached to the patient on either the
 ankles or wrists- 1 of these may be an identification sticky label attached to the
 gastric tube. If identification bands are not present or incorrect, 'verification of the
 patient's identity and replacement of the missing / incorrect' bands is the
 responsibility of the staff member who noted the discrepancy. Refer to NSW Health
 PD2014 024 'Patient Identification Bands'
- Identify family interactions and social concerns
- Review and update patient care board
- Sign for accountability of care to another health professional on hourly rounding care plan and the patient care board
- Assess whether a Purple Butterfly sticker is on the cot or required to be placed on the cot. Health professionals in the neonatal unit play a key role in supporting parents when they have experienced the loss of an infant/s in multiple birth deliveries. Families face mixed emotions whilst caring for their surviving infant/s and the presence of the Purple Butterfly sticker recognises their loss. See Appendix 2 for further information.

Checking equipment and environment

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The following should be attended to within the first 30 minutes of starting a shift

- Check placement of all monitoring equipment and how it is attached to the patient
- Incubator if in use has correct temperature setting (Neutral Thermal Zone, NTZ), servo control setting and humidification if operational. Check date for change over.
- Stock trolley only for requirements for the shift-caution not to overstock
- Ensure defrosted breast milk if available (JHCH_NICU_ 09_03 <u>Expressed Breast Milk</u>)
- Identification of specific needs and tests that may be undertaken throughout the shift as well as actions awaiting test results e.g. Newborn screening <u>"Newborn Screen</u> <u>Test in NICU" CPG: JHCH NICU 16.02</u>
- Review all lines, connections and access sites on patient review x-rays for confirmation of position
- Review all other devices attached to patient e.g. chest drains, catheters
- Review of progress notes for at least last 24 hours if not longer
- Immunisation: <u>"Immunisation of Preterm Infants "CPG –JHCH_NICU_03.03</u>, eye checks, etc.
- Check weight chart to review weight improvement
- · Check when bath due
- Awareness of when family are coming in from patient care board
- Clean trolley, incubator, cot etc throughout the shift.
- Patient ID tag attached to the patient in two places e.g. gastric tube and limb or two limbs-see Handover section for more details
- Ensure the environment promotes developmental Care principles (JHCH_NICU-06.01 Developmental Care Principles in NICU), follows the humidity protocol in the

Minimum Standard of Nursing care and assessment in NICU/HD/SCN JHCH_NICU_03.07 CPG 'Giraffe Incubator in NICU' JHCH_NICU_04.01 and the CPG 'Skin care guidelines for babies in NICU' JHCH_NICU_03.05.

Clinical Monitoring and Management Assessment

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This assessment is made up of two parts - physical and vital signs assessment.

- Physical assessment is a general "top to toe" assessment of the patient and should be done at least once a shift, preferably at the first set of cares of the day. It should also be used in part throughout the day for ongoing assessment of clinical issues.
- Vital signs assessment should be done continuously throughout the shift

Physical Assessment-see Appendix 1

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While medical staff undertake a physical assessment of patients on a regular basis, it is also important that nurses undertake a physical assessment every shift. It is vital to engage the senses of vision, touch, sound and smell throughout a physical assessment to broaden the observational assessment.

Vital Signs assessment

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Airway

Assess-noises, secretions, cough, artificial airway, position of airway

Breathing

Frequency of monitoring and documentation

• Continual mechanical respiratory monitoring should be undertaken in all areas of the nursery using either the monitor and or saturation monitor until such time as the neonate is 35 weeks gestation post menstrual age or there is frequent episodes of apnoea and bradycardia beyond 35 weeds post menstrual age.

Hourly respiration monitoring, with documentation on the observation sheet, will be undertaken until the neonate is no longer mechanically monitored.

• Respirations will be recorded on the observation sheet either 3rd or 4th hourly depending on the allocation of care times, once the neonate is no longer requiring mechanical monitoring.

Breathing Assessment

- Auscultation assessment with stethoscope
 - bilateral air entry
 - breathe sounds
 - Visual assessment
 - o respiratory rate 40-60bpm, rhythm,
 - work of breathing: spontaneous/ labored /supported
 - Chest movement
 - Symmetry
 - o Intercostal Recession
 - Tracheal tug
 - Grunting

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- Nasal flaring
- Oxygen requirement signed and delivery mode noted and documented
- Saturation (CPG 5.1.8 <u>Pulse oximetry monitoring</u>)
 - o Position of probe and regular change of site
 - Stability desaturations when handled
 - Use histograms on monitor to review
 - Has cardiac screening been undertaken (CPG 31.2 <u>Cardiac screening)</u>
 - Apnoea (CPG JHCH_NICU_12_12 <u>Apnoea & Bradycardia management in NICU)</u>
 - o Frequency, rate limiting, require stimulation
 - Caffeine
 - Histogram on monitor reviewed
- Blood gases
 - Decide based on assessment when to do a blood gas-discuss with Medical staff if guidance needed on when to do

Circulation

Frequency of monitoring and documentation

- Continual mechanical cardiac monitoring should be undertaken in all areas of the nursery using either the monitor and/or saturation monitor until such time as the neonate is 35 weeks gestation post menstrual age or there is frequent episodes of apnoea and bradycardia beyond 35 weeks post menstrual age.
- Hourly cardiac monitoring recordings should be noted on the observation sheet and will be recorded until the neonate is no longer mechanically monitored.
- Once there is no cardiac mechanical monitoring then the heart rate will be recorded on the observation sheet either 3rd or 4th hourly depending on the allocation of care times.
- Circulation Assessment
- Auscultation rate, rhythm and strength, heart sounds (<u>CPG 13.3 Patent Ductus</u>
 <u>Arteriosus (PDA) management in NICU</u>) and count beat fora full minute (120 -160 bpm normal limit)
- Pulses –femoral
- Capillary refill (CRT): brisk (<2 seconds) or sluggish (>3 seconds)
- Oedema
- Hydration status: skin turgor, oral mucosa, and anterior fontanels
- Skin –check limbs, hands, peripheries for colour and temperature
- BP Non-invasive verses invasive BP monitoring (CPG5.8.5 <u>Management of Hypotension</u>

Environment

Frequency of monitoring and documentation in regard to temperature

- All neonates admitted will have an axilla temperature on admission/prior to and following weight. Infants admitted into a Giraffe incubator may be weighed in the incubator, otherwise prior to transfer form Delivery suite cot.
- All closed incubators used for admissions will be set at a NTZ temperature for that individual newborn

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- For all ELBW babies the Giraffe bed will be set at 35 degrees and once admitted the newborn will be placed on servo control (JHCH_NICU_04.01 <u>Giraffe Omnibed</u> <u>in NICU</u>)
- All neonates placed on open care incubators will have servo control temperature probes placed on their midline axilla on admission and the crib temperature will be monitored
- All neonates nursed in an incubator or on open care system (servo or manual controlled)will have hourly environmental temperature recording documented on their observation chart

Temperature (Refer to CPG '<u>Thermoregulation of the neonate in NICU'</u> <u>JHCH_NICU_04.02</u>)

- >37.5°C. hyperthermia
- 36.5-37.5°C. Normal
- 36.0-36.4°C. mild hypothermia (Cold stress)
- 32.0-36.0°C. moderate hypothermia
- <32.0°C. severe hypothermia
- All babies will routinely have axilla temperature taken with a digital thermometer either 3rd or 4th hourly depending on care times.
- Any baby that has a temperate that falls outside the normal zone or whose environmental temperature has been changed should have an axilla temperature repeated in an hour.
- Once a neonate has been placed in a cot and their temperature is stable attend 3rd to 4th hourly axilla temperatures

Nutrition <u>top</u>

- Review weight chart will lose 7- 10% of weight for the first week of life.
- Weight gain on full enteral feeds is between 10 -25grams/kg/day with an average of 15g/kg/day. Weight gains in excess of 25g/kg/day should raise concerns about fluid retention
- CPG JHCH_NICU_09.01 Enteral Feeding Initiation, Progression and Methods
 - Gastric tube placement checked correct position pH strip of 5.5 or below within 10-15 seconds (documented)
 - Sucking feeding readiness
 - breastfeeding
- Fluids
- Intake
 - Fluid volume is correct for age
 - Appropriate fluid
 - Parenteral Nutrition (CPG 09.02 Parenteral Nutrition)
 - Enteral feeding (CPG 09.01 Enteral Feeding)

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- Additives (NICU_09.04 <u>Probiotics in Preterm Neonates</u>)
- Output
 - Measure urine output for any NICU babies in the 1st week of life and particularly ELBW babies or infants with an electrolyte imbalance, renal failure, cardiac failure, HIE, sepsis or on indomethacin
 - Urinalysis done daily on all babies in level 3, more regularly as requested
 - Stools- check amount, frequency, colour and consistency
- Weights (CPG 5.3.9 Skin Care)
 - Birth weight
 - Current weight appropriate loss or weight gain
- Breast milk
 - EBM (CPG 09.03 Expressed breast milk)
 - Breast feeding support (CPG JHCH_NICU_09.01 <u>Enteral Feeding –</u> Initiation, progression and methods)
- Blood sugar
 - See "<u>Hypoglycaemia Screening and Management</u>" <u>CPG</u>
 JHCH NICU 16.01
 - BSL accurately documented and reported

Hyperbilirubinaemia

- Jaundice-refer to CPG "<u>Jaundice in the Neonate</u>" <u>JHCH NICU 16.03</u>)
- Correct positioning of lights, right distance, correct irradiance (ideal is 25 µW/cm2/nm) as per Jaundice CPG and checking irradiance with the photometer-Refer to JHCH_NICU_16.04 <u>Phototherapy in NICU and Post natal wards, JHH</u>
- Check when SBRs are to be collected
- SBRs documented correctly on Phototherapy & exchange transfusion guide form as per CPG

Miscellaneous top

- Pain assessment (JHCH_NICU_ Pain assessment)
 - o Identify if the patient may be in pain
 - Use recommended pain assessment tool
- Discharge planning –ongoing throughout hospitalisation. Refer to
- Wound care
 - Appropriate documentation regarding treatment

TIP: If parents present at time of assessment ask them if they have noticed anything abnormal, different or if they have any questions

Many newborns require some form of respiratory support while being cared for in the NICU/HD/SCN. Each therapy requires extensive assessment when the shift commences and then throughout the shift.

It is paramount that a complete assessment is undertaken at the beginning of a shift, at least hourly (documented on observation sheet), and when you return from a meal break. It is the nurse's responsibility to ensure that the equipment provides maximum support at all times and that there are no injuries to the patient because of the equipment supporting the neonate. The following CPGs will assist the nurse in understanding what assessments should be undertaken.

Ventilation

- 5.1.4 Assisted Ventilation
- o 5.1.9 Endotracheal Tube suction in NICU
- o 5.1.4 (B) High Frequency Oscillating Ventilation in NICU
- 12.8 Nitric Oxide Therapy in NICU
- 12.03 Surfactant administration in NICU
- o 5.1.4 (d) Volume targeted Ventilation in NICU

CPAP

- 12.2 CPAP in NICU using Hudson Prongs
- o 12.7 IPPV via Hudson Prongs
- High flow FiO2
 - o CPG 12.04 Nasal Cannula Respiratory Support in NICU

APPENDIX 1 Physical Assessment

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Neurological Assessment

- state of alertness
- activity
- range of spontaneous movements and symmetry,
- symmetry and positioning of facial features
- posture
- muscle tone
- strength of cry
- grasping

Skin Assessment (review CPG 5.3.9 Skincare guidelines for babies in NICU)

- colour
- jaundice (CPG16.03 Jaundice)
- oxygenation
- texture
- turgor
- newborn dry, lanugo, milia

- integrity; lesions, bruising, wounds, pressure injuries
- anomalies eg. Congenital dermal melanocytosis (Mongolian spot), birth marks such as Port wine stains, hemangiomoas, harlequin sign
- rashes and or excoriations

Head Assessment

General head

- shape, symmetry, molding, hair
- scalp clean no marks, bruising
- anterior and posterior fontanelles sunken or bulging
- sutures not overlapping or excessive wide, Craniosynostosis, or premature fusion of cranial sutures
- symmetry of structure, features and movement - birth injury such as facial nerve paralysis

Eyes:

- size and structure, eyebrows, eyelashes
- reacts to light
- eyelids oedema
- no discharge and redness
- sub-conjunctival haemorrhages
- sclera clear, jaundice
- cloudiness or abnormal iris such as coloboma
- conjunctivitis (CPG 11.01 Conjunctivitis in the Newborn
- eye pads if under phototherapy
- examination infants <32 weeks gestation or birth weight of ≤1500g will have an eye examination on reaching day 28 of life and at least 31 weeks (CPG 18.01 retinopathy of prematurity

Nose:

- position and symmetry of the nares and septum
- septum integrity (CPAP or nasal cannula)
- secretions or flaring
- Respiratory support equipment (see below)

Ears

- cartilage, tags
- position ears eyes same level
- structure
- patency of the external auditory meatus
- behind ears ensure no sloughing of skin
- ear canal vernex
- hearing test is it due?

Mouth & cheeks:

- size
- symmetry and movement
- shape and structure
- mucosa moist
- gums pink
- no thrush (white spots) on inner cheeks or tongue – if present check buttocks
- lips moist
- palate (hard/soft) (CPG 5.8.12 Cleft lip and Palate)
- Ebstein's pearls
- tongue moist
- tongue abnormalities macroglossia, short frenulum
- reflexes present such as sucking, rooting
- cheek skin clean and protected with tegaderm if securing tape required
- Respiratory support equipment(see below)

Jaw

micrognathia

Neck Assessment:

- structure
- symmetry and range of movement
- no webbing
- Skin sloughing , dirty, excoriation

Clavicles, arms and hands assessment

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length structure and number of digits proportions torn finger nails symmetry and movement (Erb's palsy) • any cannula or PICC line sites saturation monitoring sites **Chest and cardiorespiratory assessment:** Chest Cardiac: chest size, shape and symmetry skin colour xiphoid - protruding xiphoid, heart sounds - use stethoscope breast tissue - present, swollen heart rate number and position of nipples heart rhythm Respirations pulses: chest movement and effort with respiration brachial breath sounds – use stethoscope femoral Respiratory rate oedema on body Any recession blood pressure recordings **Abdominal Assessment:** shape and symmetry • umbilicus dry, redness, foul odor, cord clamp removed, stump clean major organs · distension, redness bowel sounds **Genitourinary Assessment** Has the baby passed urine? female genitalia: Daily urinalysis for infants in NICU, during clitoris noted their 1st week of life and it has been labia clean documented on flow chart (attended during discharge the night) Anus genitalia: anal position • skin - Perineum - clean, dry, redness, anal patency rashes eg. Thrush, passed meconium? male genitalia: Stool frequency and consistency penis foreskin clean testes descended and scrotum skin intact **Back Assessment:** spinal column check for dimples around coccyx scapulae and buttocks for symmetry Skin - skin tags **Neurological Assessment** behaviour movements posture cry muscle tone reflexes - palmer, plantar grasps Senses Touch – respond to tactile messages of vision (difficult in pre-term infants) Hearing - responds to sound if awake and pain and touch Taste – may respond to oral meds alert Smell – recognize smell of mother Skeletal / Legs and feet Assessment intact and straight spine structure and number of digits coccygeal dimple ? talipes equinovarus length - equal skin integrity -especially knees if nursed proportions prone

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symmetry

toenail beds pink and no torn toenails

APPENDIX 2 Purple Butterfly Stickers

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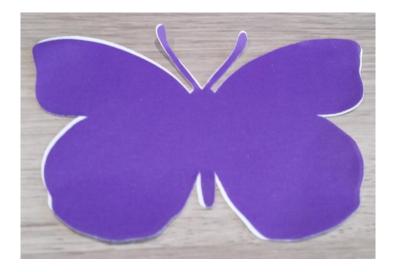
Purple Butterfly stickers are placed near the cot cards of infants who have lost one or more siblings in the same confinement. This acknowledges their loss and supports the parents by recognising the mixed feelings they may be experiencing.

It is the responsibility of the nurse caring for the infant & family to be aware of the family history and if there is no purple butterfly near the cot card to place one there. They can be located in a labelled box at the Ward Clerk's desk in the 2nd drawer of the small set of drawers behind the door.

To apply the purple butterfly to the cot surface remove the white backing and adhere the butterfly to the surface.

The butterfly can be cleaned as part of the normal cleaning procedure of the cot using neutral detergent wipes.

This practice is well recognised and used in other parts of the world, particularly the UK and is being promoted in Australia by the Australian Multiple Birth Association. Parents have chosen the use of the purple butterfly to make others aware that one or more of their babies has not survived.



References top

Australian Multiple Birth Association http://www.amba.org.au/

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FEEDBACK

Any feedback on this document should be sent to the Contact Officer listed on the front page.

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