Waikato District Health Board

Procedure

Admission to Level 1 & 2 Nurseries in Newborn Intensive Care Unit (NICU)

Procedure Responsibilities and Authorisation

Department Responsible for Procedure	NICU
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Document Facilitator Title	Associate Charge Nurse Manager
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Document Owner Title	Charge Nurse Manager
Target Audience	Nurses
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Procedure Review History

Version	Updated by	Date Updated	Summary of Changes
2	Tricia Ho	2007	update
3	Chantelle Hill	2012	Update to new format
4	Joyce Mok	2015	3-yearly update
5	Chantelle Hill	June 2017	Updating change in practice
6	Joyce Mok	Feb 2021	Due for review

Admission to Level 1 & 2 Nurseries in Newborn Intensive Care Unit (NICU)

1 Overview

1.1 Purpose

To outline the admission procedure to ensure infant receives prompt and appropriate monitoring and management; parents and family/whanau are informed and participate in partnership during the care process.

1.2 Scope

Waikato District Health Board (DHB) staff working in NICU

1.3 Patient / client group

Babies or infants in NICU

1.4 Indications

- Premature infant >32/40 and <36/40
- Low birthweight infant <2500 grams
- Infant with birthweight >5000 grams
- Infants with blood sugar levels <2.6 mmol/L after two dextrose gel treatment
- Infants exhibiting signs of mild respiratory distress: tachypnoea, grunting, cyanosis, in-drawing, nasal flaring
- Infants with surgical conditions, such as inguinal hernias, maxillofacial issues, ENT issues that are able to self-manage their ventilation.
- Neonatal Abstinence syndrome, requiring medical treatment
- Infant requiring close observation e.g. pyrexial, vomiting, abdominal distension, hypothermia and other signs of infection
- Infant with jaundice who needs treatment
- Infant admitted from home e.g. weight loss, poor feeding, dehydration, jaundice
- Re-admission from community at the discretion of the Senior Medical Officer (SMO)
- Step down from Level 3

2 Clinical Management

2.1 Competency required

- Registered Nurse who has completed Level 2 orientation
- Enrolled Nurse who has completed Level 2 orientation and under direction and delegation of Registered Nurse

2.2 Equipment

- Incubator (pre-warmed 33.5 - 34°C) for:
  - Infants with birthweight less than 2000 grams
  - Cold infants, e.g. axilla temperatures less than 36°C
  - Infants exhibiting signs of respiratory distress
  - Any infant requiring close observations which would be best achieved by using an incubator
- A cot for:
  - Infants with birthweight greater than 2000 grams, if temperature within normal range
  - Infants with no signs of respiratory distress
- Incubator/cot, phototherapy equipment and eye shield for jaundiced baby:
- SpO_2 monitor and lead, apnoea monitor, or cardio-respiratory monitor as indicated
- Stethoscope
- Laerdal bag and mask
- Suction apparatus set at 100mm Hg
- No. 8 & 10 suction catheters, as needed
- An intravenous infusion pump, if required
- Equipment for blood sugar monitoring
- Length measuring device e.g. small Perspex length-board (Ellard Instrumentation Ltd)
- Welcome Pack in Neonatal Trust bag for babies ≤33/40 or babies with complex needs; and Welcome Pack in plastic package for babies ≥34/40
- **Documentation:** red folder that includes:
  - General treatment sheet
  - Drug prescription chart
  - Stat prescription sheet
  - Laboratory result flow sheet
  - Individualised weight chart
  - Level 2 or Level 1 observation chart
  - Fluid record chart, as required
  - NICU admission and discharge form (A1170HWF)
  - Patient care plan and feeding plan
  - Individualised Treatment Threshold Graph for Babies with Neonatal Jaundice
  - Tamariki Ora Health Book
  - Pamphlets, e.g. “Patient Information – Newborn Intensive Care”
  - Level 2 nursing checklist

2.3 Procedure

2.3.1 Admission

- Perform hand hygiene.
- Ensure all appropriate equipment is set up and ready for use in advance of any admission to ensure prompt assessment of infant.
- Welcome parents to the Unit and introduce yourself.
- Provide information to the family and reassure them as able to ensure that parents and family/whanau understand their infant's condition or reason for admission.
- Gain history from health personnel/family, briefly reading through accompanying documentation if time permits.
- Check infant's identification (ID) bracelet or confirming with family to ensure infant's identification is correct.
- **All babies in NICU: mandatory requirement to have at least one ID label on their wrist/ankle.** When placing an ID label onto a baby this must be checked by 2 nurses. Maternal ID can be replaced on admission to NICU baby ID bracelet.
- Document on the safety checklist where the ID label is – wrist, foot.
- Assess infant's condition and vital signs.
- Don gloves, as required.
- Weigh infant on admission, unless already done in delivery suite or theatre. Inform NICU receptionist of the baby's weight; if out of hour receptionist of Women's Assessment Unit (WAU).
- Must weigh infants who are admitted from home/community or other hospital.
- Transfer infant into incubator or cot as appropriate.
- Apply oximeter or apnoea monitor as indicated.
- Check and document axilla temperature, heart rate (HR) and respiratory rate (RR), +/- SpO_2.
- Measure and document infant's head circumference and length.

2.3.2 Monitoring & Documentation

A. Indications and documentation for continuous SpO_2 monitoring

Indications

- Infants <32/40 gestation
- Infants on high or low nasal flow oxygen therapy
- Infants admitted with a recent history or signs of respiratory distress
- Infants with history or suspected of cyanotic episodes, desaturation or bradycardia
- Infant requiring close monitoring, e.g. history of maternal or infant pyrexia, PROM >24 hours, suspected sepsis

- Hypothermic infants: axilla temperature ≤ 36°C
- Infants with history of administration of drugs causing/potentially causing respiratory depression
- Infant who has Naloxone immediately after birth
- Infant with history of abnormal movements within the last 48 hours.

Documentation

- If on nasal flow, hourly gas flow, gas source (blender or wall), oxygen concentration (%), SpO_2 and HR, and 2 hourly of RR
- If in room air, 2 hourly SpO_2 and 1-2 hourly HR & RR as indicated by infant's condition
- Respirations must be manually counted
- Document apnoea, bradycardia, or desaturations

B. Indications and documentation for cardio-respiratory SpO_2 waveform monitoring:

Indications

- Infants transferred from Level 3 with risk of apnoea, e.g. 30-35/40.
- Infants with history of antenatal/perinatal/postnatal abnormal cardiac rhythm, e.g. Supraventricular Tachycardia (SVT)
- Infants receiving anti-arrhythmia medication

Documentation:

- Hourly or 2-hourly SpO_2, HR, and RR (respirations should be manually counted) as indicated by infant's condition.
- Document apnoea, bradycardia, or desaturations

C. Indications and documentation for apnoea monitoring:

Indications

- Infants with a history of apnoeic episodes without associated desaturations
- Infants receiving caffeine medication and/or within 5 days of its withdrawal
- Hypothermic infants (axilla temperature ≤ 36°C)
- Infants ≤ 33/40 gestation

Note:

No apnoea monitoring in incubators as per manufacturer's recommendations, if baby needs monitoring the baby should have an oximeter or cardio-respiratory monitor.

D. Documentation required for infants on apnoea monitor:

- Minimum 3-4 hourly manual count RR and HR
- Document all apnoea

E. Infants for whom routine monitoring is not automatically indicated:

- Term/near term infants admitted or re-admitted to NICU: blood sugar ≥ 2.6mmol/L, with problems not related to respiratory symptoms, e.g. jaundice requiring phototherapy.
- Stable infants who have progressed to term/near term & no longer receiving respiratory stimulants for ≥ 5 days
- Infant of diabetic mother with stable blood sugars ≥ 2.6mmol/L for 24 hours
- Stable infants of ≥ 35/40 gestation on admission or of corrected age who have had no respiratory symptoms for minimum of 5 days

F. Level 1 observations for infants who are not on monitoring or are rooming in:

- Monitor and document vital signs minimum once a shift: axilla temperature, manual count RR and HR

2.3.3 Blood sugar level monitoring

- As per Hypoglycaemia – Guidelines for management (3122): Check blood sugar level via heel prick if infant is at risk of developing hypoglycaemia to detect hypoglycaemia; document results of blood sugar.
- Some infants may have feed before blood sugar is taken, as per instructions of Neonatal Nurse Practitioner (NNP)/Clinical Nurse Specialist (CNS)/Registrar.
- If indicated, blood gas may be required on admission.
- Report and record any abnormal findings to Registrar/NNP/CNS to ensure appropriate treatment is commenced.

NB: If the NNP/CNS/Registrar is planning to inset a peripheral intravenous (IV) cannula or obtain blood from the infant, it may be appropriate to obtain blood sugar sample at the same time.

2.3.4 After admission

- Assist NNP/CNS/Registrar with procedures as appropriate.
- Administer fluids, medications and feed as prescribed.
- Discuss with parents about their desired method of feeding. Obtain parental consent if infant is to be fed with milk formula; and document in *NICU Admission and Discharge form* (A1770HWF), care plan and clinical notes.
- Explain to parents the procedures, blood tests, etc., which are required or have been done.
- Answer parents' questions as able and provide opportunity for the parents to talk with Registrar/CNS/NNP.
- Explain to parents NICU policies, e.g. visiting policy, hand hygiene, etc.

- Give parents appropriate information pamphlets, e.g. Parent Information – Newborn Intensive Care, Jaundice, etc.
- Complete *NICU Admission and Discharge form (A1770HWF)* to obtain essential information pertaining to care of infant and parental/family/whanau's wishes.
- Provide photograph for parents, if required.
- Fill in Tamariki Ora Health Book and commence care plan if time permits.

If NICU Receptionist is on duty:

- Inform receptionist of infant's admission so that she can record the admission and arrange for identification stickers to be made available. An identification number is required prior to other hospital personnel processing any tests/procedures required.

If a Receptionist is NOT on duty:

- Coordinator/ACNM to complete the *NICU Registration Admission* form and scan to the WAU receptionist: MATERNITYBOOKINGFORMS@waikatodhb.health.nz
- WAU Receptionist will print/ bring to NICU the identification stickers and computer front sheet.
- NICU staff must document all admissions in the "Admission Book" in the office to ensure accurate documentation and provide information used for statistical purposes.

Clinical records:

- If the infant is delivered in the Waikato Hospital, the receptionist will be able to find the infant's clinical records from the "Medical Office" department.

3 Patient information

- Parent Information – Newborn Intensive Care
- Jaundice
- Hypoglycaemia

4 Audit

4.1 Indicators

- There is documented evidence that all physiological tests and investigations are taken at the designated time and intervals as described within the procedure.
- There is documented evidence that all babies have an ID bracelet on as per S2.3.1
- There is documented evidence that a blood sugar has been taken as per S2.3.3
- All admissions to Level 1 & 2 are recorded in the Admission Book.

5 Evidence base

5.1 Bibliography

- Kenner, C. et al. (ed.) (2020). *Comprehensive neonatal nursing care*. Sixth edition. New York: Springer Publishing.
- Gardner, S. et al. (Eds.) (2020). *Merenstein & Gardner's handbook of neonatal intensive care*. 9th edition. St. Louis, Missouri: Elsevier.
- Wolters Kluwer (2020). Admission to floor, pediatric. *Lippincott Procedures*

5.2 Associated Waikato DHB Documents

- Waikato DHB policy: Breastfeeding (Ref. 0132)
- Waikato DHB policy: Artificial feeding (Ref. 1901)
- Waikato DHB NICU medical protocol: Admission – Newborn Service policy (Ref. 2290)
- Waikato DHB NICU medical protocol: Hypoglycaemia – Management of (Ref. 3122)
- Waikato DHB NICU nursing procedure: Heel Prick for Blood Sampling in Neonates (Ref. 4352)
- Waikato DHB NICU nursing procedure: Phototherapy – Management in Newborn Intensive Care Unit (Ref. 4944)