Student Nurses

Capital & Coast District Health Board
ŪPOKO KI TE URU HAUORA

Neonatal Intensive Care Unit

Student Name:

The Neonatal Intensive Care Unit

The Wellington Regional Hospital NICU has a capacity for 40 infants. The infants range from those born after 23 weeks gestation, through to sick term infants, or any infants requiring surgery. Their families originate from throughout the Central Region - Wellington, Blenheim, Nelson, Hastings, Wanganui, Palmerston North, Masterton and the Hutt Valley.

The unit provides a 24-hour emergency service to delivery suite and outlying hospitals for any baby in need of intensive care. To provide this service we can have up to 12-14 nursing staff on each shift. To supervise staff and maintain the general running of the department, each shift is managed by a clinical coordinator (ACNM). Any concerns or questions concerning infants or their families should be directed to this person.

There is a doctor, neonatal nurse practitioner/ specialist covering the unit at all times.

Philosophy of Care:

We will provide culturally appropriate holistic health care for all infants admitted to the Neonatal Intensive Care Unit, while maintaining the integrity and cohesiveness of the family unit. Our practice is based on the belief that each baby is an integral part of his/her family.

We recognize the need to maintain the individuality, dignity and confidentiality of every infant and his/her family.

Inherent in our practice is our belief in the importance of an evidence based multidisciplinary approach to neonatal care that includes and accepts input from the family.

Each member of the Neonatal Intensive Care Team has a responsibility to maintain a high level of professionalism in their work, while at the same time supporting and respecting other members of the team.

Gestational Model of Care:

The clinical environment in NICU is organized to nurse infants in groups of similar gestations. For example, extremely low birth weight infants are nursed together in a room with a low stimulus environment, with constant warm temperature, less light and noise.

Family Centered Nursing Care:

Parents are encouraged to do what they can for their infants who have been admitted to the unit. Parental activities can be limited if the infant is unwell. Parents can participate in daily care planning, decision making and attending to their babies needs e.g. kangaroo cuddles and performing infant cares.

Some of the different groups of infants you will see in NICU include:

- Extremely premature infants – can range from 23 weeks gestation and have complex needs such as respiratory care and intravenous nutrition.
- Late Preterm infants – 34 to 37/40 – variability in feeding ability, thermo regulation, wakefulness, large subset in NICU.
- 32-36 week infants – mainly Wellington infants who will go through to discharge
- 36+ week infants with more complex needs - including surgical infants e.g. abdominal wall defects, congenital diaphragmatic hernia.
- Transitional acute care infants – 36 weeks to post term infants – cold, hypoglycaemia, sepsis, jaundice, traumatic deliveries.
- Pre-discharge infants – have chronic complex care, or have been extremely low birth weight babies now establishing oral feeds and preparing for home.

Neonatal Multidisciplinary Team:

- Charge Nurse Manager: Rosemary Escott
- NICU Clinical Leader: Vaughan Richardson
- Neonatal Consultants
- Medical Staff and Neonatal Nurse Practitioners
- Associate Charge Nurse Managers
- Nurse Lecturer: Sandra Bryant
- Clinical Nurse Specialists: Marilyn Gibson and Jackie Chin-Poy
- Clinical Nurse Educators: Carol Gibson, Sarah Gillon, Georgina Wilson (Gina)
- Lactation consultant: Georgina Wilson (Gina)
- Registered Nurses
- NICU Community and Homecare Team: Carole Dunn, Helsa Fairless, Kezia Schroyen
- Flight Retrieval Team: Sarah Cody – Team Coordinator
- Biomedical Technician: Albert Mahapure
- Receptionists
- Health Care Associates
- Cleaner

Welcome!! We are looking forward working with you!

Contacts

Neonatal Unit	Main contact	Email for main contact	Phone number for ward/Unit
Clinical Nurse Educator	Sarah Gillon	Sarah.Gillon@ccdhb.org.nz	**DD**(04) 8060828
Clinical Nurse Lecturer	Sandra Bryant	Sandra.bryant@ccdhb.org.nz	**DD**(04) 8060837
Clinical Nurse Manager	Rosemary Escott		
Associate Clinical Nurse Manager	Various coordinators		**DD**(04) 8060802

Sarah Gillon is the Clinical Nurse Educator (CNE) for preceptorship coordinating student placements. Please email her for any enquiries during your placement. Sarah is part-time Educator and part-time Staff Nurse. Sandra Bryant is the educator team leader and is available Monday - Friday. Please contact the ACNM if you are unable to attend your rostered shift e.g. you are sick and email Sarah.

Your Preceptor

For your short placements e.g. 3 weeks, it is unlikely that you will be assigned a specific preceptor therefore you will be working with a mixture of staff nurses. For your longer placements e.g. 9 weeks, you will be assigned to a few preceptor staff nurses for your clinical placement and direct supervision. However there may be circumstances where it is necessary that you work with another nurse. These nurses are the people you should make aware of your objectives for the week and the assessments you are required to have completed before the end of your placement. Please provide evaluations and/ or other paperwork to your preceptor in a timely fashion (i.e. not on the due date!!). You preceptor will not complete any evaluations if you give it to them on your last days in the unit. The CNE for preceptorship will liaise with the preceptors and can do assessments if necessary. If you have any concerns or questions do not hesitate to contact the CNE for preceptorship as listed above.

Expectations of the Student Nurse while in the Neonatal Intensive Care Unit

Shifts for your short placement e.g. 3 weeks, are 8hr shifts Monday-Thursday and a mixture of morning or afternoons. Longer placements e.g. 9 weeks, follow your preceptor's roster which is 12hr shifts and rotating day and night shifts. Ideally you will be given your roster a few weeks prior to starting your placement.

Air transports are performed by NICU staff frequently – students are restricted in this experience due to aviation safety rules and room for parents.

When you first come onto a shift please report to the staff meeting room for handover. You will then be allocated a nurse and patient room.

A more thorough handover is then provided at the infant bedside. Initially you will take handover with your preceptor /buddy. This allows you to observe the staff nurse role in NICU.

You will begin taking a patient load, usually in your second week, but should still have direct supervision for activities where you do not feel safe or competent. You will be planning and prioritizing patient needs for your shift. You must let the ACNM/preceptor know if you feel the workload you have received is not safe as soon as you are aware of this feeling.

Personal belongings and valuables should be kept in your allocated locker. A locker is set aside in the staff changing rooms. This locker is shared with other students. You will have to provide your own padlock.

Parents can visit their infants at any time. Other visitors are limited to visiting between 1530hrs – 1800hrs. A parent should accompany friends or relatives unless they are on a nominated list of "allowable visitors" and only 2 people at the bedside. Only siblings can visit the baby – no other children. Visitors are not able to touch the baby due to infection control considerations.

The Home Care Team are involved with discharge planning for the Wellington based infants and will follow them up in the community where necessary. It is possible for you to arrange some time with the HCT when doing home visits or clinic in the community.

Infection prevention and control (IPC):

Each room has a guideline by the sink for the correct hand washing procedure. Hands are washed on starting the shift, before and after breaks and whenever gel build-up/ other is evident. Alcohol gel is the primary hand hygiene (HH) product and is available in all clinical areas and at all cot sides. Disposable gloves are also worn for all infant contact in NICU. Hands are gelled before removing gloves from the glove box and again after removing gloves following infant contact. Please be mindful of the five moments of hand hygiene: before touching a patient, before a procedure, after a procedure or contact with bodily fluids, after touching a patient and after touching a patients' surroundings and/ or equipment. On your first day, you will receive a detailed education session on IPC and HH practices in the NICU. Hand cream is available, but should not be applied just before infant contact. Please let your preceptor or shift ACNM if you have any concerns about the skin integrity of your hands or the products used in NICU.

The shifts in the Neonatal Unit are:

Morning (AM)	:	0700hrs to 1530hrs
Afternoon (PM)	:	1500hrs to 2330hrs
Night (N)	:	2300hrs to 0730hrs
Long Day (LD)	:	0700hrs to 1930hrs
Long Night (LN)	:	1900hrs to 0730hrs

Student Do's and Don'ts:

Ensure there is nursing staff present in the rooms at all times.

Due to infant safety, CCDHB protocols and Healthcare issues, Student nurses:

Can't do:

- No Intravenous drug/fluid administration at all (may participate in drug calculation for learning experience)
- Long line changes: cannot be the sterile person (may be the unsterile assistant if properly directed by a RN and follow NICU IPC protocol, but may not double check TPN/Lipids/other infusions even if assisting with a LL change)
- Not to participate in any IV procedures
- No running blood gas samples in machine – as you need a swipe card – requires training by Lab tech
- May not access/sample/ flush a UAC or PAL in any way whatsoever (May also not calibrate or level a UAC/PAL).
- No documenting complex observations on any level 3 infant e.g. ventilated babies
- Don't silence monitor alarms unless checked first with RN
- Never the second person to check any fluid or drug – always has to be two RNs

Can do:

- Heel pricks – provided they are supervised
- Cares – supervised initially. Then checked by RN and infant assessment performed.
- Assist with long line fluid changes - being the unsterile person only, directed by RN. They may not double check TPN/Lipids/other infusions even if assisting with a LL change.
- Checking of tubes – e.g. OGT/NGT placement prior to feeding – show RN aspirate and pH strip prior to starting bolus feed.
- Inserting OGT/NGT under supervision
- Administer tube feeds (initially supervised)
- Setting up an admission bed space – level 2 bed
- Stocking up a stock cart ("hippo")
- Can prepare Oral meds - needs to be checked and signed by 2 RN's
- Document vital signs on level 2 chart/ level 3 chart as long as baby not ventilated or complex observations (check with RN)
- Skin assessment chart

A few expectations of student nurses working in the Neonatal Unit are:

- It is expected that you arrive on time for your shift and if you are going to be late or you are unwell and cannot come to call the unit on (04) 8060802
- You must complete the full shift that you are allocated to work – if you are unable to do so please discuss this with your nurse, preceptor or nurse educator. A lot of learning occurs at quiet times in the unit!
- It is important to work as a team, helping when a nurse has several feeds due, or is busy assisting parents or medical staff
- Maintain a clean and tidy patient environment e.g. damp dusting, de-cluttering the work space, re-stocking infant stock cart ("hippo")
- It is important for your preceptor or the nurse you are working with that he/she is aware of your objectives
- Due to infection prevention and control a clean uniform must be worn, long hair must be tied back, cardigans must not be worn when working in the clinical area. The only hand jewelry that may be worn is a flat band that is symbolic of a union/ marriage. Nails must be short and smooth. No artificial nails may be worn. No wrist watches or nasal piercings may be worn. Please comply with the NICU infection prevention and control notification emailed to you by your student coordinator.
- If you are not achieving your objective please see the CNE or your preceptor (before the last week in the unit)
- Please ensure all documentation you need to complete for the polytechnic/ university is accomplished before the last days in the unit – your preceptor will **not** complete any paper that is given to him or her if it is given in the last days of your placement

Safety Measures in Neonatal Intensive Care Unit

Patient Bedside Checks (will be shown to you):

- Emergency equipment check - check that there is a working suction and resuscitation device (neopuff or ambu bag) and that required equipment is within reach of each baby. Ensure the pressures set on the neopuff are suitable for each individual infant
- Check evacuation box is at patient bedside and is complete
- If infants are on monitoring equipment, then parameter settings should be checked and alarms activated
- Check brakes are on all equipment
- Check that patient has ID label on

Swipe Cards:

- You will each be given a swipe card to use for access to the Unit for the duration of the placement
- It is imperative that when your placement ends, that you hand in your swipe card back to the CNE or an ACNM

Manual Handling:

- It is important to identify hazards in your workspace when you orientate
- Adjust incubator height to your preference
- When moving equipment in the Unit assess whether you need a second person to assist you
- When moving the compactors in the store room be aware of the correct movement to avoid injuring your back
- Be aware of safe posture when assisting breast feeding mothers, opening doors, bathing an infant

What to do if a patient has a respiratory arrest:

- Notify nursing staff in your room immediately
- Stimulate the baby
- Press RED emergency bell at patient's bedside
- Prepare neopuff for use by increasing flow (if you know how)
- Retrieve emergency resuscitation trolley from outside either room F or C
- Assist nursing and medical staff as directed
- Document time of events on some paper
- Debrief with staff and preceptor

What to do in the event of a fire:

- If fire is an obvious threat, set off nearest fire alarm
- Let staff and ACNM know of danger
- Determine location of smoke or fire by listening to type of alarm e.g. constant or intermittent.
- If there is fire in your patient room, immediately prepare to evacuate to an adjacent fire cell as directed by your preceptor or staff nurse
- Ensure all patients, visitors and staff are safe

Treasure Hunt

This list is designed to help you become familiar with the environment, but is by no means exhaustive of all the things you will be required to locate.

☐	Pyxis Medication Machine	☐	Admission documentation
☐	Controlled Drug cupboard	☐	Clinical policies & procedures
☐	Expressing Room	☐	NICU drug monographs
☐	Expressing Equipment	☐	White wash/feed pottles
☐	Clinical Nurse Manager Office	☐	Portable vitals machine
☐	CNE/ACNM Office	☐	Suction Equipment
	Baths/green wash bowls	☐	Scales
☐	Intravenous Fluids and equipment	☐	Bio-hazard bags
☐	Heel prick lancets	☐	Suction catheters
☐	Store room/compactors	☐	Thermometers/ECG leads
☐	Staff tea room	☐	Incubators/cots
☐	Resuscitation trolley x2	☐	Photocopier
☐	Dirty utility room	☐	Patient charts
☐	Milk freezer and fridge	☐	Laboratory forms
☐	Dressing trolley and Materials	☐	New sharps containers
☐	Infant feeding equipment	☐	Incident Reporting
☐	Jaundice equipment	☐	Air/oxygen cylinders
☐	Emergency bell	☐	Sterile Gloves
☐	Adult resus trolley	☐	PTS system
☐	Where to store your bags	☐	Drug Fridge
☐	Linen supplies/warm linen	☐	Hand washing gel
☐	Blood gas machine	☐	Home Care Team office
☐	Neonatal Trust Shop	☐	Whanau Room
☐	Lockers/Toilets	☐	Filtered water
☐	Hospital phone directory	☐	Wound cupboard
☐	Transport Room	☐	Clean IV pumps

(Mark on the Map: Fire Exits, Fire Extinguishers, Fire Alarms, Fire Doors, Transport Incubators, Transport Packs, Stairs, Lifts, Adult Resuscitation Box)

Objectives

Bathing and hygiene cares: ❖ Infant bathing and hygiene needs according to weight and gestation ❖ How often are cares performed ❖ Involvement from family
Developmental Care: ❖ Positioning in cots, safe sleeping ❖ Developmental positioning in incubators, warming beds ❖ Frequency of handling of neonates
Thermoregulation: ❖ Temperature taking and maintenance of – i.e. being able to respond appropriately if temp is unstable ❖ How to read and adjust incubator temperatures ❖ Appropriate stage for graduation to a cot, dressing up for a cot, safe sleeping
Management of an NGT or OGT tube: ❖ Insertion and fixing of O/G tube, checking for position ❖ Signs of feed tolerance/intolerance – especially when oral feeding or feed volumes increasing ❖ Use of feeding equipment ❖ Positioning for feeding – tube, breast, bottle ❖ Care of breast milk and formula
❖ Weighing – frequency and charting ❖ Significance of excessive weight gain or loss
Monitoring: ❖ Able to place ECG leads ❖ Set up an apnoea monitor ❖ Manage placement and use of saturation monitor ❖ State normal range of RR, HR and SaO2 for a neonate

- Understand basic responsibilities if alarms ring – how to respond
- How to check that infants are correctly identified

IV Therapy:

- Use of pumps
- Documentation of IV therapy, IV site condition
- Priming an IV line
- Taking out an IV
- Observe long-line management – what is TPN

Tests and Investigations:

Observe-

- Eye checks
- Any radiological tests

All the following are taken usually by heel prick – students should attempt the test with full supervision -

- What is the Guthrie/Metabolic Screening Test, when is it taken, documentation and follow up
- Blood sugar levels – when are they taken, how often, normal ranges
- Serum bilirubin tests – frequency of test, response to test result
- Haemoglobin - when is it taken

Oxygen Therapy:

- Be aware of appropriate saturation limits for individual infants
- Side effects of O_2 toxicity
- Basic understanding of Retinopathy of Prematurity – need for eye checks
- Delivery of low flow oxygen

Admission & Discharge:

- Observe a delivery, the neonatal assessment following delivery
- A discharge assessment
- Documentation

- Requirements for legal report writing
- Charting of vital signs
- Drug therapy
- Fluid balance – input/output

Emergency Equipment:

- Neopuff and suction checks
- Alarm parameters on monitors
- Emergency call bells in NICU
- Procedures for fire, earthquake or power/gas failure.

Breastfeeding and infant feeding related policies:

- Breastfeeding
- Breastfeeding the preterm and low birth weight infant on the Neonatal Unit
- Infant Feeding Guidelines
- Breast milk – expressing, storage and use
- Disinfection of expressing equipment
- Administration of wrong breast milk
- Cup feeding guidelines
- Supplementary tube feeding guidelines
- Mastitis Guidelines
- Nipple shield Guidelines

Common Presentations/Clinical conditions to the Neonatal Intensive Care Unit

Common presentations to the NICU include:

- RDS - Respiratory distress syndrome
- BPD – Bronchopulmonary dysplasia
- TTN – Transient tachypnoea of the newborn
- Apnoea's of prematurity
- Anaemia of prematurity
- Gastro-oesophageal reflux (Disease)
- Jaundice
- Hypothermia
- Hypoglycaemia
- Sepsis – Group B Strep
- Surgical – hernias, cardiac, gastric, spine, eyes

Common Medications

All drugs and fluids should be doubled checked by two registered nurses. Please see "student do's and don'ts" regarding IV and oral drugs)

Fluid Management:

There is a set formula for working out fluid and nutritional requirements for the neonate in a day

mls / kg / 24 hours mls / kg / day

Infants are generally commenced on 60mls / kg / day and increase by 15ml increments each day up to a total of 150mls / kg / day.

Fluids and nutrition are provided by

- IV Fluids and additives: D10W and additives
- Parental nutrition (TPN) and lipids
- Breast milk and Human Milk Fortifier
- Formula: Standard Infant Formula, Low Birth Weight (LBW), Special formula's

Note: Additives such as Sodium and Potassium are included in maintenance IV fluids after 48 hours of age. All infants with potassium in their IV fluids should have cardiac monitoring (see IV protocol).

Monitoring of fluid and nutritional status:

There are several methods to check that infants are receiving adequate fluid and nutrition

- Weight changes: a lack of weight gain, or too big a weight gain
- Blood sugars: these require monitoring while changes are being made to fluid volumes, types of delivery or feed strengths are being altered
- Electrolytes: indicate the infants hydration status
- Wet nappies
- Skin condition

Formula for Feed Volumes:

mls X weight (in kgs) = mls in 24 hours

Then divide the volume by the frequency of feed,

e.g. 60 x 2kg = 120ml. Then divide 120ml by 12 for 2 hourly feed volume. (As there are 12 x 2 hourly feeds in 24 hours).

Drug Therapy:

Understanding of why, when, frequency of, and delivery mode of the following (5 rights – person, time, drug, route, dose)

- Amoxycillin
- Gentamicin
- Caffeine
- Vitadol C
- NaCl replacements
- Phosphate and Calcium supplements

Drug Calculation:

$$\frac{\text{What you want}}{\text{What you have got}} \times \frac{\text{volume}}{1} = \text{dose to be given}$$

Evaluation of Student's Clinical Skills (students to bring and show preceptor nurse every shift)

Student: _____ Date of placement:

This evaluation is intended to offer feedback to your preceptor for the day in the clinical area.

Clinical Skill		Demo Date/sign	Supervised Date/sign	Independent Date/sign	Comments Date/sign
Hand-washing/ gelling					
Safety Checks					
Heel prick					
Baby temperature					
Baby eye, mouth cares					
Baby nappy change					
Checking OGT, NGT prior to feeds					
Insertion of OGT, NGT tubes					
Test aspirate for pH level					
Administer OGT/NGT feeds					
Preparing Oral medications					
Documentation of level 2/ stable level 3 babies charts					
Assist with longline changes					
Set-up new admission level 2 space					
Stocking-up 'Hippo'					
Baby bath					
Workload planning on an 8 hour chart					
Skin assessment chart					
Damp dust work-space					

Additional comments: