

# NSW intensive care unit (ICU) nursing clinical pathway

The *NSW intensive care unit (ICU) nursing clinical pathway* provides a professional development framework that facilitates both the delivery of clinical care and career direction planning for intensive care nurses.

This document has been designed to provide a suggested pathway as nurses develop from novice to expert, acquiring skills that enable them to deliver safe patient care. The completion of these skills within the defined stages will be dependent on the individual and is not time limited, however failure to progress should be identified and managed by the unit education team.

ICU nurses are critical care practitioners who:

- deliver holistic, patient care through integration of theoretical knowledge, clinical skills and practice
- collaboratively and effectively in a multidisciplinary team within the unit and hospital
- deliver care within a sound ethical and legal framework, demonstrate accountability for their actions and fulfil the role of patient and family advocate
- demonstrate advanced problem solving, communication skills and critical thinking
- provide safe and quality care and management of complex, critically ill patients.

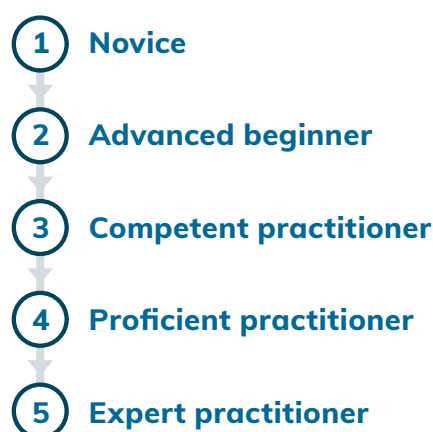
This document was developed in response to feedback and discussion at the ACI Intensive Care NSW (ICNSW) Nurse Leaders Group, which identified the need for nurses to have greater guidance for their professional development and career progression. The document also recognises the multitude of professional pathways that ICU nursing can offer. The pathway is dynamic and allows the clinician to progress at their own pace, developing skills to enhance their practice based on the level of ICU they are employed in.

To develop this document, a working group was formed consisting of members of the ICNSW Nurse Leaders Group, which included nurse unit managers, clinical nurse consultants and nurse educators, from both metropolitan and rural areas in NSW. The Australian College of Critical Care Nurses (ACCCN) were also involved in the development of this document.

## Introduction to the ICU nursing clinical pathway

Individualised nursing care should be integrated into nursing education and practice. This framework is based on the *Novice to Expert* introduced by Dr Patricia Benner in 1982, which was generated from the *Dreyfus Model of Skill Acquisition*.<sup>1</sup> *Novice to Expert* outlines how a nurse develops nursing knowledge, skills and clinical capability, while working to their full scope of practice to deliver comprehensive patient care. This is achieved through theoretical training, experiential learning and clinical experience over time.<sup>2-4</sup>

The five stages of *Novice to Expert* are (refer to Appendix 1 for outline of each stage):



This framework outlines actions ICU nurses should undertake as they develop their knowledge and skills across these stages. It has been aligned with the Australian College of Critical Care Nurses [Practice Standards for Critical Care Nurses](#), which are informed by the Nursing and Midwifery Board of Australia [Registered Nurse Standards for Practice](#).<sup>5,6</sup> It can guide nurses as they build on knowledge and skills through their clinical experience. This is designed to assist nurses to navigate through the stages, completing the necessary education, competency skill and assessment. The completion of skills through the framework is dependent on the individual with no set time period. As they progress, the type and complexity of the patient they are able to care for will expand.

## Potential outcomes and benefits from the framework

- Professional development milestones
- Provide ICU nurses direction to self-regulate learning
- A succession planning pathway
- Standardisation of professional development pathways
- Promote a supportive, nurturing nursing workforce culture

### Benefits for the patient

- Ensure patient safety and consistent care

### Benefits for staff

- Provide career direction that is transparent
- Build confidence within the team
- Identify any knowledge, experience or skill gaps for their level of practice
- Sets consistent expectations

### Benefits for local health district (LHD)

- Transferability of skills of staff across different ICU services
- ICU networking and sharing of resources
- Standardised framework to link across the state
- Recognition of prior learning

### Benefits for NSW Health

- Streamlined efficiency
- Identification of magnet hospitals and factors that make them a magnet hospital for broader rollout
- Identify priority areas for staff skill development work
- Data to support professional development requirements

## Benner's stages of proficiency

### Novice stage

The novice ICU nurse may or may not have previous clinical nursing experience. They have theoretical knowledge and some degree of practical experience dependant on previous university clinical work experience. They do not yet have sufficient information on how to transfer the new knowledge and skills they are acquiring into practice when they face complex clinical management situations with critically ill patients.

The novice stage is divided in the framework into three levels:

- **Novice level 1** is the orientation and supernumerary phase.
- **Novice level 2** is the phase where they are allocated patients with close supervision from mentors, buddies and clinical educators.
- **Novice level 3** is the phase where they are allocated patients based on competencies and are assessed with minimal supervision.

### Advanced beginner stage

The advanced beginner nurse is slowly beginning to consolidate knowledge and build on their clinical skills. They are beginning to be able to care for ventilated patients with increasing confidence but still need the assistance of more experienced nurses for patient care. They focus on completing all ordered treatments and procedures. They are beginning to use critical thinking and problem-solving skills to deliver individualised patient-centred nursing care.

The advanced beginner stage is divided in the framework into two levels:

- The advanced beginner level 1 nurse is developing increasing independence in caring for the not too complex ICU patient.
- The advanced beginner level 2 nurse is demonstrating increasing knowledge and skills in managing the more complex ICU patient.

### Competent stage

The competent ICU nurse is consolidating their knowledge and skills and using it to deliver comprehensive care to critically ill patients. They are involved in quality projects and participate in evaluating how to provide evidenced-based care. They are continuing to learn new procedures and developing new clinical knowledge and skills that can be applied to patient care. They are learning ethical behaviours. In this stage they are working independently with minimal supervision required.

### Proficient stage

At the proficient stage, the nurse demonstrates new abilities for changing situations. They are analytical and adapt to different clinical situations such as patient deterioration and system crises. They use existing knowledge and skills to integrate a holistic approach to patient care and situations, or changing situations. By building on clinical knowledge and skills, they use it to preceptor, mentor and support nurses at the novice, advanced beginner and competent level. They use their knowledge and skills to serve as a leader and role model.

### Expert stage

The expert nurse has critical thinking skills to plan the patient care in line with the patient's actual conditions, concerns and needs. They can make critical clinical decisions by means of having intuitive ability or combining knowledge, technical and clinical skills for innovative solutions. They are able to integrate new technological development to individualised care practices. They are starting to look for leadership opportunities and expanding their experience into advanced nursing roles such as education, management, research and outreach services.

# Stage: Novice level 1

This is the supernumerary orientation phase where the novice level 1 nurse undertakes unit orientation.

## Respiratory

Practice standards 1.1, 8.1, 11.1, 11.2

- Blood gas machine accreditation
- Airway and respiratory system physical assessment

## Cardiac

Practice standards 8.1

- Basic life support
- Cardiovascular system physical assessment

## Neuro

Practice standards 5.4, 8.1, 9.1, 10.1

- Neurological assessment e.g. Glasgow coma scale
- Neurovascular assessment
- Pain and sedation assessment and management
- Delirium prevention, assessment and management

## Renal

Practice standards 8.1

- Renal system physical assessment

## Gastrointestinal tract

Practice standards 1.1, 8.1, 9.1, 11.1, 11.2

- Gastrointestinal system physical assessment
- Use of glucose testing devices

## Work health and safety

Practice standards 1.1, 6.1, 7.3, 10.1

Emergency safety procedures:

- Fire evacuation
- Air, oxygen or power failure
- Electronic medical record downtime process
- Manual handling
- Aseptic techniques
- Infection control, levels of precautions, donning and doffing

## Evidence-based practice and safety

Practice standards 1.1, 1.4, 6.1, 7.2, 8.1, 9.1, 10.1, 10.3, 11.1, 11.2

- Safety checks of patient, equipment and environment
- Physical assessment (primary and secondary survey)
- Eye care, oral care and hygiene
- Medication administration and infusion devices
- Receiving and admitting a patient to ICU
- Documentation
- Clinical handover
- Pressure injury assessment, prevention and management
- Recognition and management of patients who are clinically deteriorating
- Handling of hazardous substances e.g. antineoplastic medication and waste

## Patient and family

Practice standards 1.1, 1.4, 2.1, 5.1, 5.2, 5.3, 10.1, 10.2

- Communicating with patients and families
- Ethical and legal responsibilities
- Patient centred-care
- Facilitation of virtual visiting of families to patients in isolation

## Education

Practice standards 1.3, 1.4, 3.1, 8.2, 12.1, 14.1

For example:

- Electronic health record access and training
- Access to area specific policies and procedures
- Incident management system (IMS+) notifier
- NSW Health and Education Training Institute (HETI) targeted cohort training
- Portfolio self-directed reflection

## Stage: Novice level 2

The novice level 2 nurse is allocated patients with close supervision from mentors, buddies and clinical educators.

### Respiratory

*Practice standards 8.2, 9.1, 11.2, 11.3*

- Basic airway management, use of adjuncts, bag-valve-mask
- Oxygen therapy including high flow nasal cannula
- EtCO<sub>2</sub> monitoring

### Cardiac

*Practice standards 1.1, 8.1, 8.2*

- Arterial blood pressure monitoring and troubleshooting
- Arterial line management including blood sampling
- Inotrope and vasopressor management
- Cardiac monitoring
- Basic rhythm and arrhythmia interpretation
- Interpret basics of 12 lead electrocardiogram (ECG)

### Neuro

*Practice standards 8.1, 9.1*

- Care of acute stroke patient and patients post thrombolysis or vascular intervention

### Renal

*Practice standards 8.1, 9.1, 11.1, 11.2*

- Indwelling urinary catheter (IDC) insertion
- Acute kidney injury – causes, assessment, prevention of complications, basics of management

### Gastrointestinal tract

*Practice standards 8.1, 8.2, 9.1*

- Fluid and electrolyte management
- Enteral feeding
- Total parenteral nutrition (TPN)

### Evidence-based practice and safety

*Practice standards 1.1, 5.4, 6.1, 7.1, 8.1, 10.1, 10.3*

- Transfer and discharge of a patient from ICU
- Blood transfusion accreditation
- Falls assessment, prevention and management
- Early and progressive mobility
- Use of mnemonics to guide practice, e.g. FASTHUGS (feeding, analgesia, sedation, thromboprophylaxis, hyperactive or hypoactive delirium, stress ulcer prophylaxis, glucose control)
- Supervised intrahospital transport of stable patients
- Central venous access devices post-insertion management
- Patient-controlled analgesia and nerve blocks

### Patient and family

*Practice standards 2.1, 4.1*

- Social worker, allied health referrals and involvement
- Involved and supported in end of life care

### Education

*Practice standards 3.1, 14.1*

For example:

- Introduction to ICU courses
- Transition to practice program (TTP) study days as applicable

## Stage: Novice level 3

The novice level 3 nurse is allocated patients with minimal supervision.

### Respiratory

*Practice standards 8.2*

- Basic arterial blood gas (ABG) analysis and interpretation
- Non-invasive ventilation
- Care of patients with a tracheostomy
- Assisting with extubation
- Mechanical ventilation basics
- Suctioning

### Neuro

*Practice standards 8.1, 8.2*

- Basic management of neuroscience patient
- Management of a stable patient with external ventricular drain

### Renal

*Practice standards 8.1, 8.2, 9.1*

- Bladder irrigation
- Electrolyte and acid/base balance

### Gastrointestinal tract

*Practice standards 8.2, 9.1, 11.1*

- Intra-abdominal pressure (IAP) monitoring set up
- Nasogastric tube insertion and management
- Glycaemic control – diabetic ketoacidosis, hyperosmolar hyperglycemic syndrome, euglycaemic diabetic ketoacidosis

### Evidence-based practice and safety

*Practice standards 8.1, 9.1, 11.2, 11.3*

- Epidural care and regional nerve block care and management
- Transversus abdominis plane (TAP) blocks and nerve blocks care and management
- Sepsis and multi-organ dysfunction assessment and management

### Patient and family

*Practice standards 2.1*

- Communicating with patients with a tracheostomy or who are intubated

### Education

*Practice standards 3.1, 14.1*

For example:

- TTP study days as applicable

## Stage: Advanced beginner Level 1

The advanced beginner level 1 nurse is given increased independence in caring for basic ICU patients.

### Respiratory

Practice standards 8.1, 8.2, 11.1, 11.2

- Application of ABG analysis to non-invasive and invasive ventilation and clinical deterioration
- Understanding of emergency management for patients with a tracheostomy
- Underwater seal drainage management and troubleshooting
- Preparing for intubation
- Increasing knowledge about ventilation modes

### Cardiac

Practice standards 8.1, 8.2, 9.1, 11.1, 11.2

- Clinical application and understanding of inotrope management in different clinical scenarios
- Increasing ability to interpret ECG results and rhythms
- Massive transfusion protocols

### Neuro

Practice standards 9.1, 10.1, 11.2

- Manage and escalate neurological deterioration
- Care of patients with spinal injuries, e.g. log-rolling, immobilisation

### Renal

Practice standards 11.1

- Increasing understanding of renal system and clinical presentations

### Gastrointestinal tract

Practice standards 11.1

- Management of complex gastro presentations, e.g. liver failure, pancreatitis, gastrointestinal tract bleeding
- Understanding and management of refeeding syndrome
- Faecal management system

### Evidence-based practice and safety

Practice standards 8.1, 8.2, 9.1, 11.1

- Safe transfer of stable ICU patients
- Supervised intrahospital transfer of unstable patients
- Increasing capacity to identify and escalate clinical deterioration

### Patient and family

Practice standards 1.4, 2.1, 5.1, 5.2, 5.4, 5.5, 10.1, 10.2, 10.3

- Aware of organ and tissue donation criteria and referral process of organ and tissue donation
- Increasing capacity to provide patient and family-centred care
- Increasing capacity to personalise planning care
- Able to support family through the bereavement period

### Education

Practice standards 3.1, 14.1, 14.2

For example:

- Cannulation course as required
- Advanced life support workshop
- Continue to attend local ICU workshops aiming for consolidation of ICU skills

## Stage: Advanced beginner Level 2

The advanced beginner level 2 nurse is demonstrating increasing knowledge and skills in managing the more complex ICU patient.

### Respiratory

Practice standards 8.1, 8.2, 9.1, 11.1, 11.2, 11.3

- Advanced airway management
- Mechanical ventilation advanced concepts

### Cardiac

Practice standards 8.1, 8.2, 9.1, 11.1, 11.2, 11.3

- Advanced life support
- Advanced haemodynamic monitoring
- Cardiac output and its determinants invasive and non-invasive monitoring)
- Shock patients
- Cardiac pacing transvenous and epicardial

### Neuro

Practice standards 8.1, 8.2, 9.1, 10.1, 10.2, 10.3 11.3

- Care of complex neurological presentations e.g. subarachnoid hemorrhage, intracranial pressure monitoring
- Care of neurotrauma or neuroscience patient

### Renal

Practice standards 8.1, 8.2, 9.1, 11.1, 11.2

- Renal replacement therapy

### Gastrointestinal tract

Practice standards 8.1, 8.2, 9.1, 10.1, 10.2, 10.3, 11.1, 11.2, 11.3

- Complex abdominal surgical patients

### Evidence-based practice and safety

Practice standards 8.1, 8.2, 9.1, 11.1, 11.2, 11.3

- Care of patients with shock (septic, cardiogenic, hypovolemic, neurogenic and obstructive)
- Trauma patients
- Obstetric emergencies
- HELLP (haemolysis, elevated liver enzymes, low platelet count) syndrome

### Patient and family

Practice standards 4.1

- Donation after brain death or donation after cardiac death patients awaiting organ retrieval

### Education

Practice standards 3.1, 14.1, 14.2

For example:

- Consider enrolling in postgraduate courses
- Ongoing attendance at ICU workshops and courses to advance clinical skills e.g. advanced mechanical ventilation, temporary pacing, trauma, advanced haemodynamic monitoring



## Stage: Competent

The competent nurse is consolidating their skills and knowledge and developing confidence and capability in the management of complex ICU patients.

### Respiratory

*Practice standards 8.1, 8.2, 10.3, 11.1, 11.2, 11.3*

- Developing knowledge in veno-venous extracorporeal membrane oxygenation (ECMO)
- Developing confidence with complex ventilation strategies

### Evidence-based practice and safety

*Practice standards 1.5, 12.1, 12.2, 14.3*

- Engaging in committees and audits
- Membership of professional body
- Involvement in quality improvement activities

### Cardiac

*Practice standards 8.1, 8.2, 9.1, 10.3, 11.1, 11.2, 11.3*

- Developing knowledge in advanced cardiac supportive management including:
  - intra-aortic balloon pump
  - ventricular assist device
  - veno-arterial ECMO

### Education

*Practice standards 3.1, 14.1, 14.2*

For example:

- Postgraduate study
- Progress professional development in clinical education
- Clinical supervision course
- Management research streams
- Seek mentor for professional practice
- Team leader workshop

## Stage: Proficient

The proficient nurse is analytical and can adapt to different clinical situations such as patient deterioration and system crises. They use their knowledge and skills to serve as a leader and role model.

- Analytical and fluid to cope with different clinical situation such as patient and system crises.
- Use knowledge and skills to build on holistic approach to patient care and situations.
- Implement individualised nursing care based on responsibility, thinking, ethical discernment.
- Actively involved in health and safety, may take on the role of health and safety representative of the unit
- Building on clinical knowledge and skills and using it to preceptor, coach and support nurses at the novice, advanced beginner and competent level, for example:
  - Preceptorship of new staff
  - Team leading or in-charge of shifts in the unit
  - Working towards being a clinical nurse specialist
  - Involvement in quality improvement and research projects

Practice standards 8.2, 9.1, 11.2, 11.3

### Education

Practice standards 3.1, 14.1, 14.2

For example:

- Reading nursing journals to refresh knowledge and expand on evidence-based practice
- Attending local, state and national forums
- Preceptor workshops
- Life long learning
- Postgraduate masters courses

## Stage: Expert

The expert nurse responds in a fluid automatic manner. They can make critical clinical decisions by means of having intuitive ability or combining knowledge, technical and clinical skills for innovative solutions.

- Involved in developing and delivering training and education programs
- Policy and guideline review and development. Involved in the accreditation process.
- Ability to integrate new technological development to individualised care practices. Scientific and technological knowledge of expert nurses can be used to guide less experienced nurses to plan and implement the individualised care.
- Expert nurses may fulfil one of the following roles:
  - Nurse unit managers (NUM)
  - Nurse managers (NM)
  - Clinical nurse educators (CNE)
  - Nurse educators (NE)
  - ICU clinical nurse consultant (CNC)
  - ICU nurse practitioners (NP)
  - ICU liaison nurse

Practice standards 8.2, 9.1, 11.2, 11.3

### Education

Practice standards – All

For example:

- Attending local, local health district and state-wide collaborative groups PhD
- Ongoing professional development leadership course
- Presenting at workshops, conferences, forums
- Publishing in journal articles

## References

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