An analysis of Australian graduate critical care nurse education

Fenella J. Gill, RN, BN, Paediatric Nursing Certificate, MNurs(Research)
Graduate Certificate Tertiary Teaching

Gavin D. Leslie, RN, IC Cert, PhD, BAppSc, Post Grad Dip(ClinNurs), FACNa

Carol Grech, RN, BN, Grad Dip Nsg (Crit Care), MN, PhD

Jos M. Latour, RN, PhD, FEfCCN

School of Nursing and Midwifery, Faculty of Health Sciences, Curtin
University, GPO Box U1987, Perth,Western Australia 6845, Australia
Princess Margaret Hospital for Children, Child and Adolescent Health
Services, Western Australia,Australia
School of Nursing and Midwifery, University of South Australia, GPO Box
2471, Adelaide, South Australia5001, Australia
School of Nursing and Midwifery, Faculty of Health, Education and Society,
Plymouth University, 8Portland Villas, Drake Circus, Plymouth PL4 8AA,
United Kingdom
Department of Pediatrics, Intensive Care Neonatology, Erasmus MC —
Sophia Children's Hospital, P.O. Box2060, 3000CB Rotterdam, The
Netherlands

1

Summary

Background: Preparation of specialist critical care nurses in Australia is at graduate level, although there remains considerable variation in courses offered in relation to qualification, content, assessment and outcomes. As higher education providers must now comply with the Australian Qualifications Framework (AQF) a study was conducted to examine existing critical care courses and graduate practice outcomes.

Methods: Twenty-two critical care courses were reviewed. Data sources included course provider, websites, course curricula and telephone interviews with course coordinators. A framework approach was used consisting of five key stages: preliminary immersion of raw data, conceptualising a thematic framework, indexing, charting, mapping and interpretation of data.

Findings: Analysis revealed considerable variations in course delivery and graduate practice out-comes. Most courses used professional competency standards as a framework for course curricula and clinical assessment, with inconsistency in their translation to graduate practice outcomes. Twenty-one courses included clinical assessment at graduate certificate level with no clinical assessment conducted at master level. The expected practice outcome for fifteen courses was safe practice with graduates not expected to practice at a specialist or team leadership level. Minimum graduate practice standards were not included in three courses as an expected outcome.

Conclusion: The AQF requires graduate nurse education to be compliant with academic outcome standards. The findings of our study indicate variations between courses and subsequent graduate practice outcomes. It is therefore timely to establish national critical care education graduate practice standards.

Introduction

Until the early 1990s specialty education programs for registered nurses in Australia were largely offered by healthcare facilities as vocationally based professional development courses. With the transition of undergraduate nurse preparation to the higher education sector completed by 1993 (Lusk, Russell, Rodgers, & Wilson-Barnett, 2001), the opportunity for specialty education to also be provided by universities as a graduate qualification developed momentum. This move was supported by a number of national reviews over the next two decades.

In 1997 findings from the National Review of Specialist Nurse Education were released. Funded by the Federal Government Department of Employment, Education, Training and Youth Affairs, the review identified inconsistencies impacting on specialty nurse education in Australia including variations in length of courses, type of qualification gained, the balance between clinical and theory components and course entry eligibility criteria. The review recommendations included calling for criteria to define a specialty, the educational preparation required for entry to the specialisation, and a framework for the provision of specialty nursing education (Russell, Gething, & Convery, 1997).

Five years later the National Review of Nursing Education: Our Duty of Care (Heath, 2002) again recommended the need for national consistency in nurse education including graduate specialty preparation. The National Nursing and Nursing Education Taskforce (2006) (N3ET) was subsequently set up to implement and monitor these recommendations together with recommendations from earlier reports including 'The Critical Care Workforce in Australia 2001–2011' (Australian Health Workforce Advisory Committee, 2002). The N3ET brought together a range of stakeholders and outcomes that included a number of reports and recommendations to initiate change towards national consistency in nursing and midwifery education, regulation and practice. The national specialisation framework for nursing and midwifery resulted which established criteria for recognition of a specialty. Eighteen national specialties met these criteria, along with 10 skill domains and 50

practice strands (National Nursing and Nursing Education Taskforce N3ET, 2006).

Of the nursing specialties identified by the N3ET Taskforce (2006), critical care has been well established in Australia since 1986 and specialty education courses widely offered across the country since the 1970s (Gill, Leslie, Grech, & Latour, 2012; Ogle, Bethune, Nugent, & Walker, 2002). More recently, an important driver for critical care nurse education has been professional health workforce standards (Australian College of Critical Care Nurses, 2003; Australian Council on Healthcare Standards, 2011; College of Intensive Care Medicine of Australia and New Zealand, 2010), which recommend that at least 50% of nurses working in an intensive care unit hold a critical care post registration qualification. While this recommendation has been widely accepted, there have been varying interpretations of what comprises a 'critical care qualification'.

Despite a call for greater consistency in graduate critical care courses (Australian Health Workforce Advisory Committee, 2002), and to establish consensus among stakeholders on desirable graduate outcomes (Australian College of Critical Care Nurses, 2006; Leslie, 2006), currently the graduate level to prepare qualified critical care nurses still remains unspecified. Whilst the variation in the award level, cost, content, assessment and outcomes of critical care courses may be viewed favourably by some prospective students and health services who have a wide choice of programs to select from, the confusion surrounding graduate outcomes and lack of practical transferability of the qualification is problematic. From an analysis of the findings and recommendations arising from national taskforces and other reviews into critical care graduate nurse education it was evident that a gap existed in current knowledge of expected outcomes from nurses who completed a critical care program.

The Australian Qualifications Framework (AQF) has set national policy and standards for the regulation of qualifications across the education and training sector: determining the level of qualification, knowledge, skills, application of

knowledge and skills and volume of learning (Australian Government ComLaw, 2012; Australian Qualifications Framework Council, 2013). This has ensured that Australian qualifications can be benchmarked internationally. The regulation has included adopting consistent terminology which for tertiary education after basic degree studies included using the term graduate, replacing the formerly used term postgraduate (Australian Qualifications Framework Council, 2013).

As course providers gear up for compliance with the AQF, and its regulating authority, the Tertiary Education Quality and Standards Agency (2011), research into the existing status of graduate nurse education and specialities is timely. This paper reports a descriptive analysis of existing critical care courses' graduate practice outcomes across both the higher education sector and non-university organizations in Australia.

Methods

Research design

A national review of Australian critical care nursing courses (including both adult and paediatric specialties) was undertaken. Data sources included course provider websites, telephone interviews with course coordinators, documentation that consisted of curricula, course and unit outlines, and clinical practice assessment tools. The University Research Ethics Committee (SON&M 23-2011) approved the study. Data are reported collectively in order to avoid individually distinguishing participants or institutions.

Participants

Twenty three course providers were identified using the Australian College of Critical Care Nurses (ACCCN) database (n = 18) along with five additional courses that were identified by the research team. Support for the study was first obtained from two key stakeholders; The ACCCN Board of Directors agreed that the study aims were aligned with the College's goals and the College was supportive of the study and; at a 2011 meeting of the Australian and New Zealand Council of Deans: Nursing and Midwifery the study was promoted to heads of university nursing departments offering critical care

courses. Heads of university nursing departments and course coordinators from non-university critical care courses were then contacted by email and or by telephone, with a request to participate in the study.

Data collection

Initially the course provider websites were reviewed. Arrangements were made to conduct semi structured telephone interviews at convenient times with all course coordinators. The first part of the telephone interview was to clarify the course structure and sub-specialties offered and identify any partnership or collaboration with healthcare providers including pre and co-requisites for student clinical practice experience. A semi-structured interview guide based on three existing position statements on critical care nurse education (Australian College of Critical Care Nurses, 2006; The European federation of Critical Care Nursing associations, 2004; World Federation of Critical Care Nurses, 2005) which had previously been circulated to course coordinators was then used to guide the remainder of the interview. These three position statements were almost identical and in combination resulted in four central principles and 15 recommendations (Table 1).

After obtaining participant permission, the telephone interviews were audio-recorded. Notes were taken during each interview, and these were checked, added to and completed using multiple data sources: the audio-recording, course specific documentation and course websites.

Table 1 Interview guide.

Central Principles
1. Do nurses with critical care knowledge and expertise play an integral part in the education of critical care students?
2. Is a multidisciplinary, educational approach utilised?
3. How do you ensure your materials are based on the most current available information and research?
4. How do you foster the notion of life-long learning? (The completion of a course should not be seen as the end of personal development)

Recommendations
1. Programme curriculum: as a minimum the critical care dimensions of the following topics should be included in programmes (Yes or no)
- Anatomy and physiology
- Pathophysiology
- Pharmacology
- Hygiene and microbiology
- Clinical assessment (including interpretation of diagnostic and laboratory results)
- Illnesses and alterations of vital body functions
- Plans of care and nursing interventions
- Medical interventions and prescriptions with resulting nursing care responsibilities
- Psychosocial aspects (including cultural and spiritual needs of patient and family)
- Technology applications
- Responding to clinical emergencies
- Global critical care perspectives
- Patient and family education
- Multicultural issues
- Legal and ethical issues
- Professional nursing issues and roles in critical care, including clinical teaching strategies, Team leadership and management issues
- Use of current research findings to deliver evidence based multidisciplinary care
- Information technology
- Communication and interpersonal skills
- Caring for the carer (including dealing with stress and peer support)
- Health promotion and safety standards
2. How do you design and deliver the curricula to provide an appropriate (50%) mix of theoretical and clinical experience?
3. Can you describe your expected graduate clinical practice outcomes?
4. How do you assess the competence of students? What framework/s are used?
5. How are assessors trained?
6. How do you provide a balance between clinically oriented content and broader generic content that enables the specialist nurse to contribute to the profession through processes such as research, practice development and leadership?
7. Can you explain your collaboration/relationship with the health care provider?
8. How is the provision of appropriate clinical experience to facilitate the development of clinical competence managed? Is it a collaborative responsibility between education and health care providers?
9. Do students should have access to support and guidance from appropriately experienced staff such as clinical teachers and nurse preceptors?
10. How are clinical teachers and educators supported in their role? Is it by both education and health care providers?
11. Can you explain the policies and processes for recognition of prior learning and alternative entry pathways?
12. Can you explain any initiatives or strategies to help reduce the financial burden for students?
13. Can you explain whether you do or plan to offer your course externally/online/by distance education?
14. Do you have ideas to address the deficit of qualified critical care nurses?
15. Is there credit transfer within the higher education sector for nurses completing the course?

Based on: ACCCN position statement on the provision of critical care nurse education (Australian College of Critical Care Nurses, 2006), Position statement on post-registration critical care nursing education within Europe (The European Federation of Critical Care Nursing Associations, 2004), Position statement on the provision of critical care nursing education – Declaration of Madrid (World Federation of Critical Care Nurses, 2005).

Data analysis

The deductive analytical process used to synthesise and interpret the qualitative data was based on the Framework Approach (Pope, Ziebland, & Mays, 2000; Ritchie & Lewis, 2003; Ritchie & Spencer, 1994). As outlined in Figure 1 this consisted of systematically working through five key stages: the preliminary immersion in the raw data, setting up a thematic framework, indexing, charting, mapping and interpretation.

Findings

Of the 23 course providers identified, 22 agreed to participate in the study, consisting of 18 university courses and four non-university (hospital, health

service or college) courses. Course coordinators were telephone interviewed (interview duration ranged from 35 - 90 minutes) between November 2011 and May 2012. Several course coordinators provided additional documentation (not available on the course website) such as curricula, unit outlines, assessment details and clinical assessment tools. The findings as illustrated in Figure 1 revealed nine main issues that influenced graduate practice outcomes.

STEP 1. Initial analysis: The preliminary immersion in the raw data to become familiar with the range and diversity of data, listing of ideas and recurrent themes.	• Completion of interview guides using the multiple data sources (websites, documents, interviews) • Thorough review of the data • Listing ideas & recurrent themes. • Highlighting key points relevant to the research aims which were to review the graduate practice outcomes for Australian critical care courses and explore the keys factors determining outcomes"	
STEP 2. Setting up a thematic framework from interview guide Issues, concepts and themes were sorted, examined and referenced.	• 22 sub themes topics categorised into 4 main themes reflecting the different stakeholder perspectives: Course providers, Health care providers, Students, Nursing profession • Terms used that stayed close to the topics emerging from the data set	Subthemes / topics: • Type of course • Background of students • Clinical experience required pre-course • Clinical time during course • Course outcomes: level • Course outcomes: generic versus critical care specific • Delivery of course: nurses plus others' contribution • Reviewing materials • Life long learning
		Curriculum topics • Theory – clinical mix • Use of ACCCN Competency Standards • Competency assessment • Assessor training • Course provider and health care provider relationship & collaboration • Recognition of prior learning • Strategies to support students • Access to the course • Innovative ideas
STEP 3. Indexing: Systematically apply the thematic framework to the textual data.	• Development of tables to index subtheme data for each case. • Formulation of the original data in a reduced form • Avoids too much abstraction at an early stage	Indexing: • Course Providers, specialties and award exit points • Course learning outcomes • Definitions of graduate clinical practice outcomes • Clinical practice requirements • Student clinical performance assessment
STEP 4. Charting: Rearranging the data into the thematic framework, building a picture of the data as a whole.	• Review of the charted data and review of each interview guide to identify any gaps that may have occurred in the transfer of data • Concentrating on one main theme at a time to make sure all data are synthesised across all of the cases"	
STEP 5. Mapping and interpretation of the data; Finding patterns, associations, weighing up the salience and dynamics of issues to provide explanations for the findings.	• Multiple associations between graduate practice outcomes and the four main stakeholder perspectives. • Organisation into nine main issues	Main issues: 1. Course structure 2. Contexts for student clinical practice 3. Course provider articulated graduate outcomes 4. Course expectations for graduate clinical practice
		5. Course delivery and theory content 6. Student clinical practice experience 7. Student clinical practice assessment 8. Healthcare employer and critical care nursing profession

Figure 1   Framework analysis stages.

1. Course structure

The courses offered by the four non-university providers were titled as certificate, graduate certificate or postgraduate certificate. While differences in terminology existed, all of these plus 16 of the 18 university courses had an exit award point at the graduate certificate level. All 18 of the university courses were nested within or articulated with a master program. Five of the master award programs included the specialty in the award nomenclature. Table 2 details the critical care specialties offered, the first award exit point and the award completion points.

Table 2 Course providers, specialties and award exit points.

Course provider		Specialties offered	First award exit point	Award completion point
Number	Type			
1	U	IC, Cor, HD, PIC	Graduate certificate	Master (clinical)
2	U	IC, Cor, Card, HD, PIC	Graduate certificate	Master (clinical)
3	N	CC (IC/Cor), Card	Postgraduate certificate	Postgraduate certificate
4	U	IC, Card	Graduate certificate	Master (generic)
5	U	RCC (ED, Card, IC), IC, Card	Graduate certificate	Master (generic)
6	U	RCC, IC, Card	Graduate certificate	Master (specialty)
7	U	CC (IC)	Graduate certificate	Master (generic)
8	U	CC (IC)	Graduate certificate	Master (generic)
9	U	CC, RCC, PCC	Postgraduate diploma	Master (generic)
10	U	CC	Graduate certificate	Master (clinical)
11	U	IC, Card	Graduate diploma	Master (generic)
12	U	CC (IC/Cor/ED/HD)	Graduate certificate	Master (specialty)
13	N	PCC	Certificate	Certificate
14	U	IC, Card, PCC	Postgraduate certificate	Master (specialty)
15	U	CC (IC/Cor)	Graduate certificate	Master (generic)
16	U	IC	Graduate certificate	Master (generic)
17	U	CC	Graduate certificate	Master (generic)
18	U	IC	Graduate certificate	Master (specialty)
19	U	CC (IC/Card/ED) and trauma	Graduate certificate	Master (generic)
20	N	CC, IC, Cor, PIC	Graduate certificate	Graduate certificate
21	N	IC	Professional certificate	Professional certificate
22	U	CC (IC/Cor/ED)	Graduate certificate	Master (specialty)

U, university; N, non-university; CC, critical care (adult); RCC, rural critical care (adult); IC, intensive care; Cor, coronary care; Card, cardiac nursing; HD, high dependency; PIC, paediatric intensive care; PCC, paediatric critical care; ED, emergency.

2. Contexts for student clinical practice

Course providers offered between one and five separate critical care specialty programs. Thirteen programs were titled critical care. This meant that the content was pitched broadly to address the areas of intensive care, coronary care, cardiac nursing or for some, a combination of emergency nursing, high dependency nursing and/or trauma nursing. Two critical care programs were only offered to nurses working in intensive care settings. Two critical care programs targeted recruitment of students from rural critical care and acute care nursing areas, and this was reflected in the course focus. Other specific specialty programs offered were: coronary care (six), cardiac nursing (seven), high dependency nursing (two), paediatric intensive care or critical care (five).

3. Articulated course graduate outcomes

A range of descriptions about courses, course aims and or graduate learning outcomes were examined. The amount of detail varied from three sentences explaining the course structure and overall outcomes to highly detailed accounts of course aims and objectives, learning objectives and graduate qualities. There was little consistency in the terminology used. Those courses where only broad outcomes were listed were courses where the critical care specialty program was a component of a generic award, and ten courses listed the generic university graduate outcomes only. Eight courses identified critical care graduate outcomes. Nine of the university courses specified the outcomes for the first award exit point, whereas the remaining courses articulated the outcomes for Master level. One course distinguished between graduate certificate, diploma and master level outcomes. Five courses identified that graduate practice outcomes should reflect professional or specialty competency standards. Seven courses specified the graduate practice outcome level as 'competent', for the other courses a variety of different terms was used with the exception of one course where the graduate practice outcome level was not described at all. Table 3 lists the graduate practice outcomes level as articulated for each course.

Table 3 Graduate practice outcomes.

Course provider	Graduate practice outcome level
1	In accordance with specialty competency standards
2	Enhance specialty knowledge and competence (description of course structure only)
3	Beginning specialist nurse
4	Enhance practice by expanding knowledge and skills
5	Leadership and specialty expertise
6	Specialise in intensive care nursing (description of course structure only)
7	Advanced practice role
8	Advanced practice nurse
9	Clinically proficient graduate
10	Beginning specialist practitioner
11	Be able to care for the critically ill
12	Competence
13	Competence
14	Competence
15	Advanced nursing practice
16	Competence
17	Safe and competent practice
18	Clinical leaders
19	Not described
20	Competence
21	Competence
22	Clinical expertise

Course coordinators anecdotally reported that students with less critical care experience than previous years were now commencing courses, which was impacting on graduate practice outcome levels. They also reported only a small minority of students continued further than the first award exit point which could be driven by industrial award course allowance payments.

4. Course expectations for graduate clinical practice outcomes

Given that course expectations for graduate clinical practice outcomes were not always formally or explicitly articulated, course coordinators were asked to identify their expectations for graduates' clinical practice level based on two levels of outcome, either 'safe practice' or 'team leader' which all course coordinators readily recognised and understood. (see Box 2.).

Box 2.

Definitions of graduate clinical practice outcomes

Safe clinical practice

- Can safely care for most critically ill patients
- Will require support when situation is rapidly changing or care becomes more complex

Team leader

- Acts as a resource to others
- Coordinates care for a group of patients
- Can care for the sickest patients

The expectations for outcome levels varied: for 15 courses the outcome level was expected to be safe, for three courses the level was expected to be team leader, and for one course the expected outcome level at certificate level was safe and at diploma level team leader. For two courses no practice level was determined and for one course the practice outcome was determined by the healthcare employer expectations. For two courses the first award exit point was at diploma level and the outcome level for both was expected to be 'safe'.

5. Course delivery and theory content

Some courses appeared to be structured to achieve desired graduate outcomes. Others consisted of a number of separate units (no scaffolding of learning evident) that collectively resulted in an award. For some courses the course coordinator had a clear understanding and knowledge of the whole course and expected graduate outcomes, whilst for some courses an individual who was aware of the whole of the specialty course curriculum and critical care graduate outcomes could not be identified.

Nine courses were delivered by internal mode only, eight courses were offered in both internal and online or external modes. Of note were five courses available only online or external, and for two of these courses there were no specified graduate practice outcome. The specialty content of courses was delivered predominantly at the graduate certificate level. The more broad content applicable to generic graduate outcomes was delivered

more often at diploma level. Master level work consisted of students conducting a self-directed project or minor thesis.

Teaching in all courses was delivered by nurses with critical care qualifications and experience. In addition 13 courses used a range of other critical care disciplines, primarily medical (with some allied health: pharmacy, physiotherapy, dietetics) to either input to the curricula and/or to deliver lectures. For a few courses there were arrangements with the healthcare provider to deliver the 'clinical' or practice components. For three courses there was no input from other health disciplines except that students could access appropriate clinical experts in their practice area.

All university course providers recognised prior learning by students for credit transfer (based on experience or completion of other courses such as ICU transition programs). By taking advantage of this fast tracking, students were required to enroll in the graduate diploma or master level award. Course coordinators reported that this pathway often meant that these students had less developed generic academic skills, but may have had more clinical experience than other students.

All courses reported to cover all of the content topics (Table 1) recommended in the combined position statements on critical care education (Australian College of Critical Care Nurses, 2006; The European federation of Critical Care Nursing associations, 2004; World Federation of Critical Care Nurses, 2005). For one course, 'non-critical care' subjects in the diploma level could be completed before the certificate level if students were clinically inexperienced and therefore considered to be ill prepared to achieve the certificate level outcomes for the 'clinical practice' components. A review of course materials was undertaken annually or bi-annually by most course providers as required by TEQSA (2011).

6. **Student clinical practice experience**

Across the 22 courses, there was variation in the amount of critical care clinical experience required as a pre-requisite to commencing the course,

ranging from nil (12 courses) to 12 months experience (six courses); with some courses also requiring employer support before offering a place (Table 4). Healthcare employer support generally meant being aware and approving of the student undertaking the course, and could also mean agreeing to provide clinical supervision, facilitate clinical rotations, and or study leave.

For 19 of the courses, a minimum number of hours per week working (or clinical supervised time) in the specialty area during the course were also specified. Two courses also required students to complete a specified number of clinical practice hours (140 and 160 hours) to pass the clinical component of the course. If the student was studying part-time (e.g. undertaking the certificate over three or four semesters), the minimum amount of clinical practice required was adjusted pro rata (Table 4).

Table 4 Clinical practice requirements.

Prerequisite critical care experience	Number of courses	Minimum amount of clinical practice required during course	Number of courses
Nil	13	Be employed	4
Desirable	1	0.4 FTE[a]	1
3 months	1	0.5—0.6 FTE	13
6—12 months	2	0.8 FTE	3
12 months	5	1.0 FTE	1

[a] 1.0 FTE, full time employment.

In addition to the amount of pre-course and intra-course student critical care experience, there was a wide variety in critical care experiences in the students' practice settings. For example, nine courses enrolled students who worked in Level II or III (College of Intensive Care Medicine of Australia and New Zealand, 2010) intensive care or coronary care settings, whilst three courses enrolled students who worked in rural and regional critical care or acute care settings. In four courses hospital employers required students to rotate to other critical care areas during the course, and for three courses the course coordinators arranged or facilitated student rotations to other (higher or lower acuity or different specialty) settings to enable a wider range of student clinical experiences.

The clinical support provided to students during the course varied ranging from no support (if there was no university – healthcare employer partnership)

to dedicated course educators working alongside students. For 18 courses a model for clinical support was used where experienced clinical staff acted as resources either informally or named as student preceptors, facilitators or assessors.

7. Student clinical practice assessment

For 21 of the 22 courses investigated, student clinical performance was assessed in some form. For 17 courses the ACCCN Competency Standards (Australian College of Critical Care Nurses, 2002) were used as the guiding framework for clinical performance assessment. For two courses it was articulated that the Competency Standards had been modified to reflect outcomes appropriate for course graduates.

As shown in Table 5 the most commonly used models for rating clinical performance were Benner's novice to expert model (1984) and Bondy's rating scale (1983), in five courses, the rating scale had been modified. One course used a combination of both models. One course used Tolhurst and Bonner's clinical assessment criteria (2000), consisting of a combination of ACCCN Competency Standards (2002), Bondy's scale and Benner's model. Eight courses either did not use or did not identify a model or rating scale.

Student clinical performance assessment was most commonly undertaken in the healthcare setting by clinical staff with varying amounts of collaboration, support and preparation from the course provider. Assessors were sometimes appointed as adjunct university staff or accredited by the course provider in some form. Assessor inter-rater reliability was inconsistently addressed. Direct assessment by observation and discussion with an assessor was the most common form of student clinical performance assessment.

Table 5 Student clinical performance assessment.

Assessment	4 Benner competent (or modified) 8 Bondy supervised or independent (or modified) 9 Other framework or not specified/referenced
Competency standards	17 ACCCN or modified/adapted 2 ANMC 1 ANCI 1 No standards identified
Clinical practice assessed by	3 Course Clinical Educator (plus 1 Course Coordinator) 20 Healthcare Provider Clinical Facilitator 5 Student self assessment

The nature of clinical practice assessment varied and included: written assessments, direct observation of practice, sampling of practice in core areas or detailed evidence of meeting all of the Competency Standards and associated elements. Clinical assessment could include individual skill assessment or aspects of each competency (e.g. turns on oxygen flow to 10l/min, performs a primary assessment), skills could be grouped as competencies for core business or 'entrustable professional activities' (Frank et al., 2010) such as 'provides nursing care for the mechanically ventilated patient', or the requirement could be left for the student to demonstrate achievement of the ACCCN Competency Standards. Lists of essential and desirable skills to be achieved were commonly used.

For 18 courses clinical performance assessment was confined to the certificate level. Clinical assessment at the diploma level was undertaken for the two university courses where the diploma level was the first exit point. One course required clinical performance assessment at both certificate level and diploma level. No course included clinical performance assessment at master level.

8. **Healthcare employer and the critical care nursing profession: expectations, influence and support**

The healthcare employer and the critical care nursing profession both influenced graduate practice outcomes. These stakeholders drove the

demand for nurses working in critical care to hold graduate qualifications, directed the course focus and content, the mode of delivery, as well as the student course entry criteria. The level of clinical support provided to students depended on the perceived value by the healthcare employer and the willingness of experienced nurses working in the clinical area to contribute to student learning. As already noted, the Australian workforce standards for nurses working in intensive care (Australian College of Critical Care Nurses, 2003; Australian Council on Healthcare Standards, 2011; College of Intensive Care Medicine of Australia and New Zealand, 2010) impacted on healthcare employers' demand for 'qualified' critical care nurses. Flexibility for students to work and or study part- time was determined by the healthcare employer.

9. **Relationships between course providers, healthcare employers and the critical care nursing profession**

Most courses had input from and an ongoing relationship with healthcare employers and the critical care nursing profession. Fourteen courses were steered by some form of collaborative advisory board or operated a clinical partnership arrangement. Eleven courses had input from practicing critical care nurses as assessors, lecturers, or course coordinators. For the three courses without a collaborative arrangement or formal link with healthcare employers, the course coordinators reported that this was a weakness for their course. Collaboration with the critical care nursing profession then was reported to be reliant on individual contacts and personal relationships.

Discussion

This paper builds on Aitken, Currey, Marshall, and Elliott (2006) earlier work examining 16 university critical care courses, and provides a contemporary overview of Australian courses preparing 'qualified' critical care nurses., Analysis of 22 courses revealed considerable variations exist in delivery and graduate practice outcomes. Most courses reported that the ACCCN Competency Standards (Australian College of Critical Care Nurses, 2002) were used as a framework for course curricula and as a basis for clinical assessment tools, yet there remains inconsistency in their translation to graduate practice outcomes. For some courses there was a separation

between the theoretical and clinical practice development components of the course. Clinical practice assessment was often managed in the healthcare setting and graduate practice outcome level was then determined by local standards not by the course provider. This could result in a disjointed rather than coordinated approach to the achievement of graduate outcomes. Importantly there was an inconsistency in the level of importance placed on graduates meeting any clinical practice outcome standards. In fact a minimum clinical practice outcome was not always a course outcome criterion.

For almost all courses where clinical practice assessment was undertaken, it was reported that assessment was a component of the graduate certificate only. The expected graduate practice outcome for most courses was safe practice, meaning that the graduate could care for most critically ill patients but would require support. The graduate was not expected to practice at team leader level. This outcome level was influenced by many factors, including the pre-course practice entry level, local expectations and the practice setting.

It appears that for the certificate level, the graduate practice outcome has been established at safe practice. A leadership level of practice was more of an expectation in a broad sense at graduate diploma and master level, where interestingly critical care specific clinical practice was not assessed. This finding was in contrast to earlier work by Marshall, Currey, Aitken, and Elliott (2007) and Aitken, Currey, Marshall, and Elliott (2008) where critical care nursing stakeholders identified different outcome expectations for graduate certificate, diploma and master level. It is interesting that stakeholders identified a graded level in leadership and practice as this is not reflected in clinical assessment in awards beyond graduate certificate. Consideration needs to be given whether the current system meets the critical care nursing profession's expectations for the preparation of 'qualified' critical care nurses.

It was noted that two university courses required graduates to complete a minimum number of practice hours. This suggests that despite the movement towards competency or outcomes based approaches to graduate education (Iobst et al., 2010; LeCuyer, DeSocio, Brody, Schlick, & Menkens, 2009), it

appears that the structure or process based educational system still operates within Australian graduate nurse education. Whilst we know that nurses' competency levels develop rapidly over the first few years of their clinical experience, Takase (2012) identified that competency development is not linear or stepwise. Competency development is impacted on by many factors and different aspects of competency develop at different rates. This knowledge about competency development highlights the need for a consistent competency based outcomes approach to developing and measuring graduate clinical practice and the need to move away from minimum practice hours to minimum practice outcomes.

Inconsistencies in the level of academic qualifications in the higher education sector have been addressed by the AQF (2011, 2013). The TEQSA (2011) specifies that standards achieved by students should be benchmarked against similar courses of study. Interpretation and application of this standard for critical care nurse education is and will remain problematic if only generic academic standards are used. For instance all courses indicated that all of the recommended course content topics were covered with students also required to be working (and often assessed) within their clinical specialty for the duration of the course. The majority of courses required students to be working at least 0.5FTE or the equivalent to a half time workload. Thus the overall volume of learning in the courses appeared to be large in relation to the AQF (2013). An interesting finding was that there was a clear lack of emphasis on psycho-emotional care beyond crisis and death which contrasts with our earlier study exploring health consumers' priorities for critical care nurse education (Gill, Leslie, Grech, & Latour, 2013).

Among all of the inconsistency in course delivery and clinical practice assessment it was reassuring that most courses used the two guiding documents produced by the ACCCN; Position Statement on the Provision of Critical Care Nurse Education (2006), and the Competency Standards for Specialist Critical Care Nurses (2002). However, these documents have not been consistently interpreted as evidenced by the wide variety in courses and

graduate practice outcomes. It appears that these documents lack sufficient direction in setting graduate practice standards.

Whilst N3ET established a broad framework around specialty nursing a framework for specialty education has yet to be developed and graduate course providers awarding specialist qualifications currently remain largely unregulated in terms of practice outcomes. In the UK, the National Competency Framework for Critical Care Nurses was developed to reduce the variation that existed between courses (Price, 2013). With the advent of the AQF, and the need to comply with the national framework it is now imperative to address the variation in Australian critical care courses by developing and implementing AQF compliant graduate practice outcome standards.

A limitation to the study was that the same types of data for each course were not always available to the researchers. Issues around intellectual property and maintaining competitive market share meant that some course providers chose not to divulge all their course materials. A further challenge in making comparisons between courses was that terminology used in course documents was inconsistent. For example, the titles used for graduate certificate or graduate diploma level qualifications, and how graduate learning outcomes were articulated differed between courses as well as from the AQF taxonomy (2013).

Conclusion
The analysis of graduate critical care courses revealed wide variations between courses and subsequent graduate practice outcomes which are likely to be representative of many other specialties in nursing. Most courses reported the professional competency standards were used to guide course curricula and clinical assessment tools, although there was inconsistency in their translation. Most courses included clinical practice assessment at graduate certificate level with no clinical assessment being undertaken beyond that. The expected practice outcome for most courses was safe practice with graduates not expected to practice at 'specialist' or team leader

level. Minimum graduate practice standards were not always an expected outcome.

Soon all specialty nursing course providers will be required to be compliant with academic outcome standards (Australian Qualifications Framework Council, 2013; Tertiary Education Quality and Standards Agency, 2011). Importantly what is lacking is an equivalent framework to regulate graduate practice outcome standards as this example from critical care demonstrates. It is timely to establish national course practice standards for each specialty, aligning with the AQF qualification learning outcome descriptors. Achieving national adoption of graduate practice standards will then require a regulatory process that ideally will fit within a framework for specialty nurse education.

References

Aitken, L., Currey, J., Marshall, A., & Elliott, D. (2006). The diversity of critical care nursing education in Australian universities. *Australian Critical Care, 19*(2), 46-52.

Aitken, L., Currey, J., Marshall, A., & Elliott, D. (2008). Discrimination of educational outcomes between differing levels of critical care programmes by selected stakeholders in Australia: A mixed-method approach. *Intensive and Critical Care Nursing, 24*(2), 68-77. doi:10.1016/j.iccn.2007.09.001

Australian College of Critical Care Nurses. (2002). *Competency Standards for Specialist Critical Care Nurses* (2nd ed.). Perth, Western Australia: Cambridge Media.

Australian College of Critical Care Nurses. (2003). Position statement on intensive care nurse staffing. [Internet]. Retrieved from http://www.acccn.com.au/images/stories/downloads/staffing_intensive_care_nursing.pdf

Australian College of Critical Care Nurses. (2006). ACCCN position statement on the provision of critical care nurse education. [Internet]. Retrieved from http://www.acccn.com.au/images/stories/downloads/provision_CC_nursing_edu.pdf

Australian Council on Healthcare Standards. (2011). Intensive care clinical indicators user manual. [internet]. Retrieved from http://www.achs.org.au/.

Australian Government ComLaw. (2012). *Higher Education Standards Framework*: Industry, Innovation, Science, Research and Tertiary Education.Retrieved from http://www.comlaw.gov.au/Details/F2012L00003/Download

Australian Health Workforce Advisory Committee. (2002). The critical care nursing workforce in Australia 2001-2011. [internet]. Retrieved from http://www.ahwo.gov.au/documents/Publications/2002/The critical care nurse workforce in Australia.pdf

Australian Qualifications Framework Council. (2011). *Australian Qualifications Framework* (First ed.). South Australia: Australian Qualifications Framework Council.

Australian Qualifications Framework Council. (2013). *Australian Qualifications Framework* (2nd ed.). South Australia: Australian Qualifications Framework Council.

Benner, P. (1984). *From novice to expert: Excellence and power in clinical nursing practice.* Menlo Park: Addison Wesley.

Bondy, K. (1983). Criterion-referenced definitions for rating scales in clinical evaluation. *Journal of Nursing Education, 22*(9), 376-382.

College of Intensive Care Medicine of Australia and New Zealand. (2010). Minimum standards for intensive care units. [internet]. Retrieved from http://www.cicm.org.au/cmsfiles/IC-01 Minimum Standards For Intensive Care Units - Current September 2011.pdf

Frank, J. R., Snell, L. S., Cate, O. T., Holmboe, E. S., Carraccio, C., Swing, S. R., . . . Harris, K. A. (2010). Competency-based medical education: theory to

practice. *Medical Teacher, 32*(8), 638-645. doi:doi:10.3109/0142159X.2010.501190

Gill, F. J., Leslie, G. D., Grech, C., & Latour, J. M. (2012). A review of critical care nursing staffing, education and practice standards. *Australian Critical Care, 25*(4), 224-237. doi:10.1016/j.aucc.2011.12.056

Gill, F. J., Leslie, G. D., Grech, C., & Latour, J. M. (2013). Health consumers' experiences in Australian critical care Units: postgraduate nurse education implications. *Nursing in Critical Care, 18*(2), 93-102. doi:10.1111/j.1478-5153.2012.00543.x

Heath, P. (2002). *Our duty of care: National review of nursing education*. Canberra: Commonwealth of Australia. Retrieved from http://www.google.com.au/url?sa=t&rct=j&q=heath p. our duty of care%3A national review of nursing education. canberra%3A departments of education%2C science and technology%2C and health and ageing%2C 2002.&source=web&cd=3&cad=rja&ved=0CDsQFjAC&url=http%3A%2F %2Fwww.voced.edu.au%2Fcontent%2Fngv16709&ei=kNYmUf7oO6PNm AWCwoCgDQ&usg=AFQjCNEHcKfS1cmC45Fv4o- 4wBm2yXLdKg&sig2=hT8DPn_XjjkyTbh5HlDyBA&bvm=bv.42768644,d.d GY

Iobst, W. F., Sherbino, J., Cate, O. T., Richardson, D. L., Dath, D., Swing, S. R., . . . Frank, J. R. (2010). Competency-based medical education in postgraduate medical education. *Medical Teacher, 32*(8), 651-656. doi:doi:10.3109/0142159X.2010.500709

LeCuyer, E., DeSocio, J., Brody, M., Schlick, R., & Menkens, R. (2009). From Objectives to Competencies: Operationalizing the NONPF PMHNP Competencies for Use in a Graduate Curriculum. *Archives of Psychiatric Nursing, 23*(3), 185-199. doi:10.1016/j.apnu.2008.06.004

Leslie, G. D. (2006). Specialty preparation for critical care nursing. *Australian Critical Care, 19*(2), 43-43. doi:10.1016/s1036-7314(06)80007-x

Lusk, B., Russell, R. L., Rodgers, J., & Wilson-Barnett, J. (2001). Preregistration nursing education in Australia, New Zealand, the United Kingdom, and the United States of America. *Journal of Nursing Education, 40*(5), 197-202. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=20010 72451&site=ehost-live

Marshall, A., Currey, J., Aitken, L., & Elliott, D. (2007). Key stakeholders' expectations of educational outcomes from Australian critical care nursing courses: A Delphi study. *Australian Critical Care, 20*(3), 89-99. doi:10.1016/j.aucc.2007.05.001

National Nursing and Nursing Education Taskforce. (2006). *National Nursing and Nursing Education Taskforce Final Report*.

National Nursing and Nursing Education Taskforce N3ET. (2006). *A National Specialisation Framework for Nursing and Midwifery: Defining and identifying specialty areas of practice in Australia*. Melbourne, Victoria: Department of Human Services. Retrieved from ttp://http://www.nnnet.gov.au/downloads/recsp_framework.pdf

Ogle, K., Bethune, E., Nugent, P., & Walker, A. (2002). *Nursing Education and Graduates – Part 1; Profiles for 1999, and 2000, with projections for 2001*. Canberra: Commonwealth of Australia.

Pope, C., Ziebland, S., & Mays, N. (2000). Analysing qualitative data. *British Medical Journal, 320*(January 8), 114-116. Retrieved from http://edocs.library.curtin.edu.au/eres_display.cgi?url=dc60090915.pdf&copyright=1

Price, A. (2013). National Critical Care Competency Framework. *Nursing in Critical Care, 18*(2), 103-104. doi:10.1111/nicc.nicc12013_1

Ritchie, J., & Lewis, J. (Eds.). (2003). *Qualitative research practice: A guide for social science students and researchers.* London: Sage Publications Ltd.

Ritchie, J., & Spencer, L. (1994). Qualitative data analysis for applied policy research. In A. Bryman & R. Burgess (Eds.), *Analysing Qualitative Data.* London: Routledge.

Russell, L., Gething, L., & Convery, R. (1997). *National review of specialist nurse education*. Commonwealth of Australia.

Takase, M. (2012). The relationship between the levels of nurses' competence and the length of their clinical experience: a tentative model for nursing competence development. *Journal of Clinical Nursing*, no-no. doi:10.1111/j.1365-2702.2012.04239.x

Tertiary Education Quality and Standards Agency. (2011). Retrieved from http://www.teqsa.gov.au/

The European federation of Critical Care Nursing associations. (2004). Position statement on post-registration critical care nursing education within Europe. [internet]. Retrieved from http://www.efccna.org/.

Tolhurst, G., & Bonner, A. (2000). Development of Clinical Assessment Criteria for Postgraduate Nursing Students. *Collegian (Royal College of Nursing, Australia), 7*(2), 20-25. Retrieved from http://linkinghub.elsevier.com/retrieve/pii/S1322769608603613?showall=true

World Federation of Critical Care Nurses. (2005). Position statement on the provision of critical care nursing education - Declaration of Madrid. [Internet]. Retrieved from http://en.wfccn.org/pub_education.php