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A U S T R A L I A

The identification of the role and competencies of the graduate nurse in recognising and responding to the deteriorating patient in an acute ward environment: A mixed methods study

A thesis submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy

School of Nursing and Midwifery

The University of Notre Dame Australia, Fremantle

2018

Steven Peter Hardman

Candidates number

20103899

Declaration

I declare that this thesis is an account of my research, and contains as its main content work that has not been previously submitted for an award of degree, or diploma in any university or other institution. To the best of my knowledge, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Signed

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right.

Steven Peter Hardman

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My PhD journey has been a long road, one which I would not have been able to complete without the help of many people. I wish to thank those who have provided help, support and guidance throughout my study.

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Steve

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Glossary of Terms

Key terms utilised within this thesis include:

Acuity: the level of severity of an illness. This is one of the parameters considered in patient classification systems that are designed to serve as guidelines for allocation of nursing staff, to justify staffing decisions, and to aid in long-range projection of staffing and budget.

Acute health care facility: A hospital or other health care facility providing health care services to patients for short periods of acute illness, injury or recovery.

Acute illness: any illness characterized by signs and symptoms of rapid onset and short duration. It may be severe and impair normal functioning.

ACSQHC: Australian Commission on Safety and Quality in Health Care.

Advance care directive: Instructions that consent to, or refuse the future use of specified medical treatments (also known as a health care directive, advance plan or other similar term).

Advanced life support: The preservation or restoration of life by the establishment and/or maintenance of airway, breathing and circulation using invasive techniques such as defibrillation, advanced airway management, intravenous access and drug therapy.

Adverse drug reaction: A drug response that is noxious and unintended, and which occurs at doses normally used or tested in humans for the prophylaxis, diagnosis or therapy of disease, or for the modification of physiological function.⁴

Adverse event: An incident in which harm resulted to a person receiving health care.

Attending medical officer or team: The treating doctor or team with primary responsibility for caring for the patient.

Chain of response (COR): outlined by the Department of Health, UK (2009), discussed several roles along a continuum from escalation, including the role of: the alerter; the recorder; the recogniser; the primary responder; the secondary responder; and the tertiary responder. Reflected the need for escalating levels of intervention in the care of the deteriorating ward patient.

Clinical communication: An exchange of information that occurs between treating clinicians. Communication can be formal (when a message conforms to a predetermined structure for example in a health record or stored electronic data) or informal (when the structure of the message is determined solely by the relevant parties; for example a face-to-face or telephone conversation).¹⁰

Clinical deterioration: the progressive decline in the physiological state of the patient leading to a homeostatic imbalance and organ dysfunction.

Clinical handover: The transfer of professional responsibility and accountability for some or all aspects of care for a patient, or group of patients, to another person or professional group on a temporary or permanent basis.¹²

Competency-based training: An approach to training that places emphasis on what a person can do in the workplace as a result of training completion.

Comorbidity: Two or more diseases or conditions occurring at the same time, such as depression and anxiety.

Critically ill patient: defined as those patients who are at high risk for actual or potential life-threatening health problems. The more critically ill the patient is, the

more likely he or she is to be highly vulnerable, unstable and complex, thereby requiring intense and vigilant nursing care.

Definitive disposition: The location, such as a ward or hospital, to which the patient will be transferred after initial stabilisation.

Definitive care: The clinical care required to maintain the stabilisation achieved and, where possible, to restore the patient to health.

Deteriorating patient: a patient experiencing progressive decline in the physiological status leading to homeostatic imbalance and potential organ dysfunction.

Emergency assistance: Clinical advice or assistance provided when the patient's condition has deteriorated severely. This assistance is provided as part of the rapid response system, and is additional to the care provided by the attending medical officer or team.

Escalation protocol: The protocol that sets out the organisational response required for different levels of abnormal physiological measurements or other observed deterioration. The protocol applies to the care of all patients at all times.

Early Warning Score (EWS): a guide used to quickly determine the severity of illness of a patient based on their vital signs.

Graduate registered nurse (GRN): a nurse who is a recent graduate (within the last two years) of an accredited school of nursing, and is registered with an appropriate Nursing and Midwifery Board and licenced to practice.

Hospital: A healthcare facility licensed by the respective regulator as a hospital or declared as a hospital.

Monitoring plan: A written plan that documents the type and frequency of observations to be recorded.

Morbidity: refers to ill health in an individual and to levels of ill health in a population or group.

Mortality: death

Patient: A person receiving health care. Synonyms for ‘patient’ include consumer and client.

Rapid response system (RRS): Formal hospital systems to support staff to promptly and reliably recognise patients who are clinically deteriorating, and to respond appropriately to stabilise the patient. The system often includes a “track and trigger” arm alongside a medical emergency team.

Risk: The chance of something happening that will have a negative impact. It is measured by consequences and likelihood.

Serious adverse events: events in which harm resulted to a person receiving health care or untoward occurrences that resulted in life threatening events or death.

Suboptimal care: defined as delayed or inappropriate management of the deteriorating patient including significant delays in diagnosis, treatment and referral of the acutely unwell or deteriorating patients, inadequate or incomplete physical assessment and inappropriate or delayed clinical management

Track and trigger systems: Physiological ‘track and trigger’ systems rely on periodic observation of selected basic physiological signs (‘tracking’) with predetermined calling or response criteria (‘trigger’) for requesting the attendance of staff who have specific competencies in the management of acute illness and/or critical care.

Treatment-limiting decisions: Decisions that involve the reduction, withdrawal or withholding of life-sustaining treatment. These may include ‘no cardiopulmonary resuscitation’ (CPR), ‘not for resuscitation’ and ‘do not resuscitate’ orders.

Abstract

The identification of the role and competencies of the graduate nurse in recognising and responding to the deteriorating patient in an acute ward environment: A mixed method study.

Patients' physiological condition can be unstable for prolonged periods before transfer to critical care units. Thus, it is imperative that ward based nurses are able to recognise, respond and initially manage patients with a deteriorating condition. Unfortunately, warning signs of physiological decline are often missed, or ignored by both experienced and newly graduated registered nurses. Complex systems and processes to recognise and respond to clinical deterioration have been developed to try to prevent, or mitigate the risk of this occurrence. These systems and processes have, however, stopped short of allocating roles and specifying the required competencies needed by health care professionals, including newly graduated registered nurses. This study aimed to investigate the key elements of the role undertaken by the graduate registered nurse in recognising and responding to the deteriorating ward patient.

Method: The study employed a partially mixed method explanatory design with four phases. Initially a two part online quantitative questionnaire tool was developed, tested and distributed to over 900 graduate registered nurses. The intent was to firstly explore the role newly graduated nurses in the management of the deteriorating ward patient and the factors impacting on the role. Secondly, it was aimed at investigating the clinical competencies used and the level of intervention nurses provided. Following analysis of the quantitative data, a qualitative phase utilising focus groups provided further clarification of the graduate nurses' role, and factors impacting on the role.

Findings: Seventy-nine competencies were identified and utilised by the majority of graduate nurses. The most relevant related to the recognition of deterioration in the ward patient, the assessment and monitoring of vital organ function and the need to call for help. Several factors impacted the graduate nurses'

role including: the need to gain permission to act; confidence; knowledge; negative emotions; lack of clarity; and ward support. Numerous ways of improving capabilities and performance were suggested. These included; the need for clearly defined competency statements; competency based assessment; organisational role delineation; mentorship; specialised multidisciplinary training; and improvements in undergraduate and post-graduate education.

Conclusion: This study was the first to investigate the role of the graduate registered nurse and the acute care competencies utilised in managing the deteriorating patient from both a quantitative and qualitative perspective. To effectively enable graduates to provide safe, timely management: hierarchical barriers need to be removed, support given for clinical competency standards to be utilised, and specialist education provided.

Chapter 1

Introduction and background

Introduction

This first chapter of the thesis introduces an overview of the problem of clinical deterioration and the challenges of recognising and responding to the deteriorating patient in the acute ward environment. It portrays the difficulties faced by the graduate registered nurse transitioning to the registered nurse role. These issues are discussed within the context of the national and international literature. The chapter will also sketch the purpose and significance of the study together with a brief description of the researcher location in the study. A plan of thesis will conclude the chapter.

The problem of clinical deterioration

Acute care hospitals have an increasing proportion of patients with higher acuity and complex co-morbidities, expanding the likelihood of developing serious illness, organ dysfunction and clinical deterioration during their hospital stay (ACSQHC, 2017). Over the last decade, studies have highlighted that a significant proportion of these patients experience serious adverse events, which can lead to a cardiac arrest and unplanned admission to the intensive care unit (Allen, Elliott, & Jackson, 2017; Anesi, 2017; McGloin, Adam, & Singer, 1999; McQuillan et al., 1998; NICE, 2007; Schein, Hazday, Pena, Ruben, & Sprung, 1990; Smith, Prytherch, Schmidt, Featherstone, & Higgins, 2008; Story, Shelton, Poustie, Colin-Thome, & McNicol, 2004). These changes to patients' condition have often led to an increase in the demand for critical care services including critical care beds.

There is considerable agreement that clinical deterioration of hospital patients is detectable and preventable in many cases (Allen, Elliott, & Jackson, 2017; Anesi,

2017; Buist, Bernard, Nguyen, Moore, & Anderson, 2004; Cardoso et al., 2011; Davies, DeVita, Ayinla, & Perez, 2014; DeVita et al., 2006; McQuillan et al., 1998; NCEPOD, 2005). Warning signs such as respiratory dysfunction, altered conscious state and circulatory compromise often exist for many hours before cardiac arrest occurs (Goldhill & McNarry, 2004). The detection of clinical deterioration in ward patients is often seen as the role of the registered nurse (RN) as they are often viewed as responsible for the observation, monitoring and interpretation of patient vital signs (Allen, Elliott, & Jackson, 2017; Anesi, 2017; Clarke, 2004; Considine & Botti, 2004; Liaw, Scherpbier, Klainin-Yobas, & Rethans, 2011; Massey, Aitken, & Chaboyer, 2010). This role places them in a key position to detect changes and abnormalities in the patient's condition.

This demand for critical care beds has left acutely ill deteriorating patients to be managed by junior nursing and medical staff within the general ward environment (ACSQHC, 2010; ACSQHC, 2017; Rattray et al., 2011). It is suggested, however, that staff working within this environment, are often ill-equipped to manage the acutely ill deteriorating patient (Gao et al., 2007; NICE, 2007; National Patient Safety Agency, 2007).

Despite significant agreement that accurate assessment of vital signs is essential for the early recognition of the deteriorating patient, it is concerning that several studies have identified that vital sign monitoring is frequently poorly performed by RNs (Cardona-Morrell et al., 2016; Goldhill, McNarry, Mandersloot, & McGinley, 2005; Mitchell & Van Leuvan, 2008). Overlooked changes to vital signs, often results in: poor clinical decision making; delays in seeking advice; suboptimal management; serious adverse events; and increased morbidity (Allen, Elliott, & Jackson, 2017; Anesi, 2017; Buist et al., 2004; Franklin & Mathew, 1994; Goldhill & McNarry, 2004; Lighthall, Markar, & Hsiung, 2009; Ludikhuizen, Smorenburg, de Rooij, & de Jonge, 2012; McGloin et al., 1999; McQuillan et al., 1998; Schein et al., 1990).

There has been a renewed emphasis both nationally and internationally by government departments to provide hospital wide systems that are designed to reduce

the incidence of patient deterioration, adverse events and to mitigate clinical risk (ACSQHC, 2017; ACSQHC, 2008; Allen, Elliott, & Jackson, 2017; Anesi, 2017; CECNSW, 2008; Department of Health, 2009; NCEPOD, 2005; NICE, 2007; NPSA, 2007). One such system developed in the UK, recommended the use of a Rapid Response System (RRS) for all adult patients within acute care hospital settings (NICE, 2007). The RRS system includes a ‘track and trigger’ system for recognising changes in the patient’s physiological condition alongside the provision of a medical emergency team, and the utilisation of skilled clinicians to provide rapid intervention to the deteriorating ward patient (ACSQHC, 2017; Allen, Elliott, & Jackson, 2017; Anesi, 2017; Cardoso et al., 2011; Devita et al., 2006; NICE, 2007).

The NICE also advocated that staff caring for patients in acute hospital settings should have competencies in monitoring, measurement, interpretation, and response to the deteriorating patient. These competencies were to be appropriate to the level of care that staff provided. Unfortunately, the guidance did not advocate specific roles, or the requisite competencies relevant to specific healthcare professional groups, including RNs, working within the acute care ward setting (NICE, 2007).

Similarly, in Australia, the Australian Commission on Safety and Quality in Health Care ACSQHC provided a framework of eight key elements essential for the prompt, reliable recognition and response to clinical deterioration (ACSQHC, 2010). The elements included four clinical processes and four organisational prerequisites (ACSQHC, 2010). The broad clinical processes advocated the use of a hospital wide RRS, similar to those advocated in the UK. Additionally, in 2014, the ACSQHC identified core competencies for recognising and responding to clinical deterioration in acute care hospitals. Fundamental to these competencies, was the necessity that healthcare professionals should be able to: accurately assess patients; interpret signs and symptoms; recognise the urgency of a situation; communicate effectively; and provide immediate escalation and interventions (ACSQHC, 2014; ACSQHC, 2017). These competencies, however, did not delineate the expected roles, or the level of competency required by the different healthcare professional groups (ACSQHC, 2017).

It is clear that a lack of clarification concerning the expectations of a specific role can lead to a number of problems for the RN (Amos, 2001; Brief, Sell, Aldag, & Melone, 1979; Burke, Tompkins, & Davis, 1991; Lambert & Lambert, 2001; Lima, Newall, Kinney, Jordan, & Hamilton, 2014; Posner & Randolph, 1980; Purling & King, 2012; Wolff, Pesut, & Regan, 2010). A lack of role clarification can lead to: lower productivity; tension; anxiety; low self-efficacy; dissatisfaction; ill health; absenteeism; increased staff turnover; and poor quality patient care (Bandura, 1977; Casey, Fink, Krugman, & Propst, 2004; Higgins, Spencer, & Kane, 2010; Kramer, Brewer, & Maguire, 2013; Mooney, 2007; Pike & O'Donnell, 2010). These problems have a negative impact on the nurse and the provision of care to the patient (Garrett & McDaniel, 2001; Janssen, 2009).

Graduate registered nurses (GRN) are considered to be novice newly qualified RNs who have completed an undergraduate nursing program and are working within their initial first 12 months of their registration (Missen, McKenna, & Beauchamp, 2016; Purling & King, 2012). A plethora of studies exist that discuss issues of GRN transition, general levels of competence on registration, and the clinical challenges they have experienced (Amos, 2001; Burger et al., 2010; Callaghan, Tak-Ying, & Wyatt, 2000; Casey et al., 2004; Chang & Hancock, 2003; Della Ratta, 2016; Ebright, Urden, Patterson, & Chalko, 2004; Kramer et al., 2013; Lambert & Lambert, 2001; Lu, While, & Louise Barriball, 2008; Meechan, Jones, & Valler-Jones, 2011; Missen et al., 2016; Mooney, 2007; Morrow, 2009; Munroe et al., 2015; Purling & King, 2012; Whitehead, 2001).

These studies have identified that transition into a workplace is fast-paced and challenging, with high levels of acuity and complexity of care (Della Ratta, 2016). The sense of initial excitement and achievement in the transition from student to qualified nurse can rapidly change to feelings of anxiety, uncertainty and fear, as the reality of a clinically demanding environment replaces academia (Delaney, 2003; Duchscher, 2009a; Goodwin-Esola, Deely, & Powell, 2009).

It is seen as essential that GRNs are able to practise safely and competently applying their knowledge and skills learnt in their undergraduate education (Hickey,

2009; Meechan et al., 2011). They are expected to work autonomously, dealing with increasingly complex patients, often with high workloads and increasingly complicated technology (Morrow, 2009). Nursing authorities and hospital managers expect that GRNs demonstrate competence and critical thinking in the provision of patient care, and be able to assume responsibility and accountability in a safe and professional manner (Nursing and Midwifery Board of Australia, 2016; Wolff et al., 2010). These expectations also extend to the GRNs capabilities of responding to the acutely ill patient (Purling & King, 2012).

Graduate nurses become rapidly immersed in the nursing team and the provision of complex care to acutely unwell patients. This care often involves responsibility for making key decisions about patient management (Ebright et al, 2004; Burger et al, 2010). Compounding the complexity of patient care is the increasing level of acuity in the hospital setting (ACSQHC, 2010). It is recognised GRNs are required to be competent in complex assessment and specialised clinical skills for an increasing number of critically ill ward patients (ACSQHC, 2014).

A number of barriers have been identified as influencing the RNs ability to recognise and respond to clinical deterioration. These barriers include: education; workload; ward culture and communication; negative emotions; level of experience; and the track and trigger systems used (Aitken, Marshall, Elliott, & McKinley, 2009; Andrews & Waterman, 2005; Bell & Redelmeier, 2001; Cioffi, 2000; Cioffi, Conway, Everist, Scott, & Senior, 2010; Crispin & Daffurn, 1998; Donohue & Endacott, 2010; Endacott & Westley, 2006; Endacott, Kidd, Chaboyer, & Edington, 2007; Jones, King, & Wilson, 2009; Liaw et al., 2011; Maggs & Mallet, 2010; Massey, Aitken, & Chaboyer, 2009; Massey, Chaboyer, & Aitken, 2014; Massey, Aitken, & Chaboyer, 2015; Odell, 2010; Quirke, Coombs, & McEldowney, 2011; Salamonson, Heere, Everett, & Davidson, 2006; Smith et al., 2008; Tee, Calzavacca, Licari, Goldsmith, & Bellomo, 2008; Wood, Douglas, & Priest, 2004). Such barriers need to be addressed if GRNs are to provide optimal care to the ward patient.

Aim of the study

The aim of this study was to identify the role of the graduate registered nurse in recognising and responding to the deteriorating patient in the acute ward environment and the relevant competencies needed to undertake this role.

Research questions

1. What is the role of the newly graduated registered nurse in relation to the identification, assessment and management of the acutely deteriorating ward patient?
2. What factors influence the role of the graduate registered nurse in the management of the acutely deteriorating ward patient?
3. Which acute care competencies are important to the graduate registered nurse in the management of the deteriorating ward patient?
4. At what level are graduate registered nurses working within the clinical setting in relation to the key acute care competencies?
5. How do we improve the capabilities of graduate registered nurses to assess and manage the acutely deteriorating ward patient?

Significance

Whilst it is recognized that GRNs have a general role to play in detecting the deteriorating patient they are apprehensive about their specific role and the associated competencies. Unfortunately, the guidance from organisations such as NICE and ACSQHC have not specified roles, or the requisite competencies. Significantly, there was a paucity of studies that have specifically investigated the role undertaken by graduate nurses, or the key competencies required to manage the deteriorating patient.

This study will redress the deficits within the literature and provide clarity with regards to the current role undertaken by GRNs in the recognition and response to the clinically deteriorating ward patient. Whilst it is important to delineate the role of GRN, there also needs to be clarification of the acute care competencies and the level of complexity involved. Moreover, the identification of the factors influencing the role of GRNs will facilitate the development of coping strategies to assist them in adjusting to the organizational environment (Chang & Hancock, 2003). Importantly, this study will help to improve the capabilities of the GRNs in managing the patient whose condition is deteriorating and ensure that future clinical actions are appropriate. These measures should result in positive outcomes for patients.

Context underpinning the study

This study was conducted within the Perth metropolitan area, which is the capital city of Western Australia (WA). The population of WA is over two million people and covers a land mass of approximately 6,400 square kilometres (Australian Bureau of Statistics, 2017). Currently within the Perth metropolitan area there are 12 acute public hospitals, nine of which operate an Emergency Department (ED). Also there are 16 privately funded acute hospitals, one of which operates an ED service.

There are four universities in Perth that offer an undergraduate degree in nursing: Curtin University; Edith Cowan University; Murdoch University, and the University of Notre Dame Australia. All the schools of nursing are accredited by the Australian Nursing and Midwifery Accreditation Council (ANMAC, 2017). Graduate registered nurses (GRNs) are those nurses who have completed an undergraduate nursing program and are working within their first year of qualification, in an acute hospital in the Perth metropolitan area.

Most GRNs are enrolled on the GradConnect program, coordinated by the Nursing and Midwifery Office of Western Australia this is an online recruitment system providing a choice of employment opportunities for the newly qualified nurse.

At the time of conducting this study, there were 1226 GRNs registered with the GradConnect program.

To answer the research questions, it was decided that a mixture of research methods and methodologies was required. For the most part, objectivism underscores the development and testing of questionnaires that were used to survey the GRNs in the first part of the study. Since the second part of the study required a subjective component, it is appropriate that the researcher acknowledges personal experiences and beliefs that could have shaped the analysis and interpretation of data. This reflexivity is important from a qualitative perspective being identified as a resource rather than a source of bias (Liamputtong, 2009). Thus, the following expose details the researcher's experience and is written in the first person.

Researchers location within the study

My journey as a RN began in the North West of England. I completed the "Project 2000" which provided extensive practical experience, alongside university based education. From time to time in my new RN role, I observed ward patients becoming acutely unwell, often showing abnormal vital signs, and commonly developing difficulties with breathing, blood pressure and altered consciousness. At the time, I was bewildered why these patients became so unwell, and how this happened so quickly. This stimulated my need to know more, triggering my interest and ultimately, guided my career path and passion for clinical deterioration and critical illness.

Over the years I have specialised as a critical care nurse in both civilian and military life. In my experience the majority of patients admitted to intensive care units (ICU) have been in the hospital for some time, often on the wards for hours or days with declining organ function. Commonly, the course of deterioration was detected by nursing staff, but minimal treatment or intervention was provided. Eventually these deteriorating patients would often decline to the point of peri-arrest, requiring urgent emergency treatment and resuscitation, followed by admission to the intensive care unit (ICU). Frequently, the deteriorating ward patients have been admitted to ICU with

multiple organ failure, requiring prolonged admission and complex invasive treatments. The outcome for these patients was generally been poor, commonly resulting in protracted hospital stays, worsening comorbidities or death.

The plight of the deteriorating ward patient instilled a purpose in me, to improve their outcome. Currently, in my role as a university lecturer, specifically in critical care skills, my focus is to ensure that the new graduate nurse is adequately prepared and competent to recognise and respond to clinical deterioration. Thus, the objective of this study was to investigate how the recognition and response of nursing staff to clinical deterioration could be improved. In particular this meant there was a need to delineate the role and competencies of the GRN, since they were emotionally vulnerable to emergency situations.

Plan of Thesis Chapters

The format for the thesis chapters will be as follows:

Chapter 2. Literature review: provides a critical review and synthesis of the current literature. It begins with an explanation of the conceptual framework used to guide the literature review. This is followed by a critical discussion of concepts surrounding: clinical deterioration; the registered nurses' role in clinical deterioration; and the graduate nurses' role in managing clinical deterioration.

Chapter 3. Methodology: provides a discussion of the mixed methods research (MMR) approach used within this study together with the rationale for using an explanatory MMR design. A brief synopsis of philosophy of pragmatism which underscores MMR approach used, will be provided. The chapter will then outline the study design and the four sequential phases of the study.

Chapter 4. Phase 1 Development of the questionnaires: provides a discussion of the development of the phase 1 questionnaires (Q-Role and the Q-Comp). The processes used for the development of the Q-Role will initially be provided, including an overview of the expert panel review and the test for reliability. This will then be

followed by a discussion of the development of the Q-Comp, including an overview of the validity and reliability tests.

Chapter 5. Quantitative data collection and analysis: outlines the data collection and data analysis of phase 2 of the study. To begin, the chapter will describe the population, sample and recruitment processes used for the phase 2. Next, the administration and data collection processes used for the Q-Role and Q-Comp will be provided. Finally, the data analysis techniques, including the statistical methods employed for phase 2 of the study, will be outlined.

Chapter 6. Quantitative findings: provides an outline of the findings from the phase 2 data collection. Initially the Q-Role findings will be presented, including the demographic data and the core findings concerning the role of the GRN. Next, the findings of the Q-Comp will be presented. The findings will be subdivided into parts 1, 2 and 3, outlining the demographic data and the key findings related to the acute care competencies used by the GRNs.

Chapter 7. Qualitative data collection and analysis: describes the qualitative phase of the study. It includes data collection and analysis including the data analysis techniques.

Chapter 8. Qualitative findings: provides a description of the findings from the focus group interviews undertaken in phase 3. The emergent themes and subthemes from the data analysis are presented along with examples of narrative from the GRNs to support the themes.

Chapter 9. Discussion, Limitations and Recommendations: provides a synthesis of meta-inferences and discussion of findings from the quantitative and qualitative phases of the study. The meta-inferences will be presented to answer the research questions and linked with current literature. The chapter will provide a discussion of the limitation of the study followed by key recommendations from the study.

Summary

This current chapter has provided an introduction to the thesis. It began with an overview of the problem of clinical deterioration and the challenges of recognising and responding to the deteriorating patient in the acute ward environment. It discussed some of the difficulties faced by the graduate registered nurse transitioning to the registered nurse role. The chapter also outlined the purpose and significance of the study together with a brief description of the researcher location in the study. A plan of thesis concluded the chapter.

Chapter 2

Literature Review

Introduction

The previous chapter provided a background and justification for the study. Chapter 2 provides a comprehensive narrative literature review of the main concepts. The intent is to afford the reader a comprehensive overview of the relevant concepts and to highlight significant areas of research, identifying gaps and supporting the research questions. It will begin with an explanation of the conceptual framework that was produced from the literature review. A critical discussion of concepts in the conceptual framework include: clinical deterioration; the registered nurses' role in clinical deterioration; and the graduate nurses' role in managing clinical deterioration.

The literature was searched using several scholarly databases including: British Medical Journal Best Practice; CINAHL; Cochrane Library; Informit Health Collection; Joanna Briggs Institute; Medline; ScienceDirect; Scopus; and Summon. The key search terms used for the literature review included: clinical deterioration; deteriorating patient; suboptimal care; adverse events; cardiac arrest, patient assessment; vital signs; critical illness; monitoring; rapid response; early warning score; medical emergency team; nurse; registered nurse; graduate registered nurse; education; self-efficacy; clinical competency; scope of practice; and competency standard.

Conceptual Framework

A conceptual framework for this study was created following a narrative review of the literature on the concepts of clinical deterioration, and the role and competencies related to the registered nurse (RN) and GRN role in recognizing and responding to a patient whose condition is deteriorating. It has been included to provide a basis for the organisation of concepts related to these phenomena and helps to guide the reader

through the collection and analysis of data in order to answer the research questions (Fain, 2015). It was clear that many concepts were imbedded in the phenomena (see Figure 1).

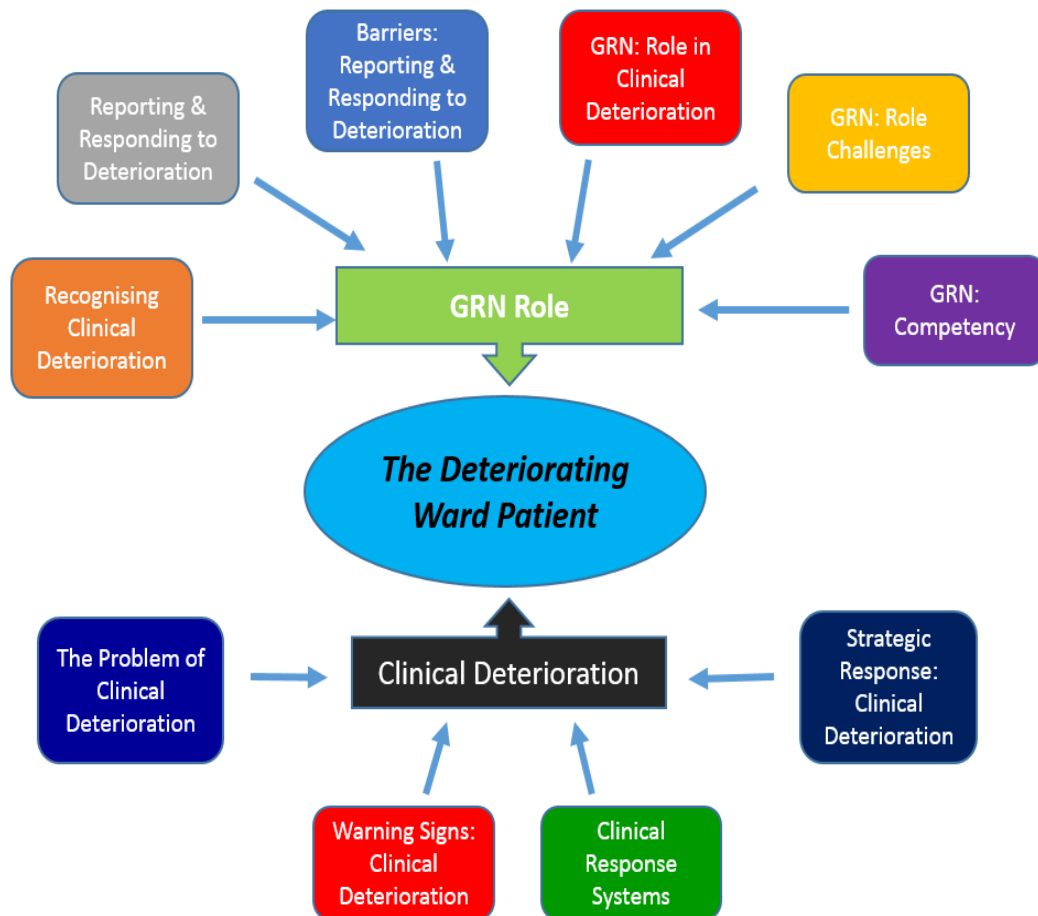


Figure 1. Conceptual framework for study

At the centre of the conceptual framework was the deteriorating ward patient, since the main purpose of the study was to understand the graduate registered nurse (GRN) role and competency in the management of such a patient. It was, therefore, necessary to grasp a clear understanding of the concept of the deteriorating patient, to enable linkages to be made to other studies. For the purpose of this study such a

patient was seen as one whose clinical condition acutely declines, often associated with symptomatic changes in condition, organ dysfunction and an increased risk of adverse events, including unplanned admission to critical care, cardiac arrest, and death. Having considered the concept of the deteriorating ward patient, the conceptual framework focused upon understanding factors surrounding the phenomenon. Such factors included the warning signs of clinical deterioration and the current responses to patients with such a condition, including the clinical systems. The conceptual framework then focused upon the role of the RN and the possible barriers encountered that could influence the recognition, reporting, and response to clinical deterioration in the ward patient. Whilst a GRN was the focus of this study, it was evident that there was a significant paucity in the literature concerning the GRN and their role and competency in the detection and management of the deteriorating patient. Since the aim of this study was to identify the role and competencies undertaken by the GRN in response to clinical deterioration, it was pertinent to investigate the challenges they faced in the development of their role, and the use of competency standards.

The problem of clinical deterioration

In exploring the concept of clinical deterioration, there has been an expanding volume of literature within the last two decades focusing on acute illness and the deteriorating hospital patient. Despite the plethora of literature very few authors have provided an explicit definition of the term deteriorating patient. One definition, however, stated that:

A deteriorating patient is one who moves from one clinical state to a worse clinical state which increases their individual risk of morbidity, including organ dysfunction, protracted hospital stay, disability, or death (Jones, Mitchell, Hillman, & Story, 2013, p.1031)

A second similar definition used a dimensional analysis technique to explore the literature focusing upon the acute care and intensive care (ICU) nurses' perspectives of patient deterioration. It described patient deterioration as: 'an evolving, predictable and symptomatic process of worsening physiology towards critical illness (Lavoie, Pepin, & Alderson, 2016).

Despite few definitions of patient deterioration, numerous national and international studies have highlighted the consequences of this condition. Such outcomes have been associated with increased adverse events, extended hospital stay and higher rates of mortality (Baker et al., 2004; Bellomo et al., 2004; Buist et al., 2004; Franklin & Mathew, 1994; Hodgetts et al., 2002; Hogan et al., 2012; Jones, Mitchell, Hillman, & Story, 2013; Matlow et al., 2012; McGloin et al., 1999; McQuillan et al., 1998; Seward et al., 2003).

There is worldwide acknowledgment of the need to ensure all healthcare practitioners involved in the management of hospital patients have the capability to recognize and respond to patient deterioration in a timely and effective manner (ACSQHC, 2010; IHI, 2017; NICE, 2007). There are a number of key factors that have led to the patient's deteriorating condition within the ward area. One of which is suboptimal care.

Suboptimal care

The concept of suboptimal care has been defined as:

Clearly inappropriate or inadequate treatment. Non-recognition of an abnormality clearly apparent from physiological recordings or laboratory data, but which had either not been identified in the case records or not acted upon with any obvious therapeutic intervention (McGloin et al, 1999, p. 256).

Suboptimal care has been recognised as a significant problem both nationally and internationally (Allen, Elliott, & Jackson, 2017; Anesi, 2017; McQuillan et al., 1998; Quirke et al., 2011). Numerous studies have identified core themes, or attributes related to suboptimal care including: significant delays in diagnosis; treatment and referral of acutely unwell or deteriorating patients; inadequate or incomplete physical assessment; and inappropriate or delayed clinical management (Allen, Elliott, & Jackson, 2017; Anesi, 2017; Franklin & Mathew, 1994; Hodgetts et al., 2002; McGloin et al., 1999; Schein et al., 1990; Seward et al., 2003).

Suboptimal care was first studied in the UK to evaluate the quality of care received by patients prior to admission to intensive care units (McQuillan et al., 1998). The study examined the antecedents and consequences of suboptimal care in a sample of 100 patients including the quality of care provided prior to admission to an ICU. Specifically the study focused upon the adequacy of the initial assessment of the patient including the management of airway, and the evaluation of breathing and circulation. Two assessors rated the quality of medical care, its suitability and the timeliness of admission to the ICU. The findings suggested that 54% of patients had received suboptimal care (McQuillan et al., 1998).

A later study conducted by an independent UK organization; the National Confidential Enquiry into Patient Outcome and Death (NCEPOD), highlighted the problem of suboptimal care. In 2005, a report by NCEPOD found that initial treatment of acutely ill patients was often delayed or inappropriate, despite significant health service funding to improve the management of acute illness, and patient deterioration within the UK hospital setting. Many patients were often physiologically unstable on the wards for prolonged periods before admission to ICU. In addition the assessment, history and examination of these patients, were often incomplete. Of the patients who died within the ICU, 21% of the deaths were thought to be avoidable had there been appropriate initial assessment and management. The report focused upon the medical practitioners providing acute care within the hospital setting (NCEPOD, 2005). The report, however, did not mention the role of nurses in preventing suboptimal care.

More recently, a literature review and concept analysis of the term “suboptimal care” was undertaken aimed at clarifying why and how suboptimal care occurred. Findings included: delays in diagnosis, treatment or referral; poor assessment; and inadequate or inappropriate patient management. Additionally, the study found related contextual antecedents that were categorized into patient complexity, healthcare workforce, organizational and education related factors (Quirke et al., 2011).

Clearly, although suboptimal care has been studied, it remains imperative to improve the recognition and response to patient deterioration. Since nurses are implicitly involved in this process, an understanding and clarification of their role in

the ward area may improve care. Delay is a significant factor in the pathway of clinical deterioration for the ward patient. Improving the nurses' ability to recognise and provide a timely response, is a key factor in tackling the ongoing problem of suboptimal care.

Serious adverse events

Suboptimal care of the deteriorating ward patient has been linked to the occurrence of serious adverse events such as cardiac arrest during hospital admission. The Australian Institute of Health and Welfare (2008) explained serious adverse events as those in which harm resulted to someone receiving health care (AIHW, 2008). Serious adverse events were discussed as patient safety incidents that included unintended, or unexpected events that could have led, or did lead to harm for one, or more patients receiving healthcare (The National Health Service England Patient Safety Domain, 2015).

A number of studies concentrating on the deteriorating patient found that serious adverse events often included unplanned admission to intensive care units, cardiac arrests and unexpected deaths (Cardoso et al., 2011; McGloin et al., 1999; McQuillan et al., 1998; Smith et al., 2008; Story et al., 2004; Volchenboum et al., 2016). In many cases, these adverse events were both preventable and avoidable if physiological warning signs had been recognised, appropriate help summoned, and timely intervention and treatment provided (Allen, Elliott, & Jackson, 2017; Anesi, 2017; Cardoso et al., 2011; Buist et al., 2004; McGloin et al., 1999; McQuillan et al., 1998; Volchenboum et al., 2016; Wilson, Harrison, Gibberd & Hamilton., 1999).

A UK retrospective case record review of 1000 adults who died between 2009 and 2010 was conducted in ten acute care hospitals. Physicians reviewed the cases to identify problems in care that contributed to death, taking into account the patients overall condition. It was found that 5.2% of deaths had a 50%, or greater chance of being preventable. The deaths were related to poor clinical monitoring, diagnostic errors, and inadequate drug or fluid management of the patients (Hogan et al., 2012). The study suggested there would have been 11,859 preventable adult deaths. The

majority (60%) occurred in elderly, frail patients with multiple comorbidities (Hogan et al., 2012).

Suboptimal care, serious adverse events, a failure to recognise patient deterioration and increased mortality have been linked to levels of staffing and resources. A retrospective study looking at the levels of mortality in out-of-hours emergency medical admissions to an UK acute hospital were analysed retrospectively for 15,595 patients admitted under the care of physicians. The study calculated mortality in emergency medical admissions and compared mortality in all out-of-hours periods with in-hours periods. It was found that total mortality for patients was increased for medical admissions at night and in all out-of-hours periods. It was concluded that a lack of resources including reduced staffing levels and skill mix along with organisational factors and severity of illness influenced the increase in out-of-hours adverse events and mortality (Maggs & Mallet, 2010). Whilst the study was significant in highlighting the problem of suboptimal care, it was limited to one district general hospital and did not statistically correct for the patients underlying comorbidities.

Warning signs of clinical deterioration.

There is considerable agreement that clinical deterioration of hospital patients is detectable and preventable in many cases (Allen, Elliott, & Jackson, 2017; Anesi, 2017; Buist et al., 2004; Cardoso et al., 2011; DeVita et al., 2006; McGloin et al., 1999; McQuillan et al., 1998). Warning signs of clinical deterioration such as respiratory dysfunction, altered conscious state and circulatory compromise often exist for many hours before cardiac arrest occurs (Goldhill & McNarry, 2004).

Abnormalities in blood pressure, respiratory rate, heart rate, conscious level and oxygen saturation, are common, prior to serious adverse events such as cardiac arrest (Buist et al., 2004). Effective vital sign observation and initiating timely and appropriate intervention to ward patients, is often the key to identifying and appropriately managing the deteriorating patient (ACSQHC, 2017; NICE, 2007; Odell, Victor & Oliver, 2009).

A prospective observational study conducted in a US hospital evaluated the frequency of abnormal vital signs and their association with critical events including mortality, cardiac arrests and unplanned ICU admission. Over a four month period vital signs from medical and surgical inpatients were recorded and compared with records of cardiac arrests, mortality and ICU admissions. It was found that abnormal vital signs were present in 16% of patients, with 35% of these patients experiencing a critical event. Comparatively, of the 84% of patients with normal vital signs, only 2.5% experienced a critical event. Survival was significantly lower in patients with abnormal vital signs at both 30 days and at 1 year following discharge and patients with abnormal vital signs had twice the length of stay of patients with normal vital signs (Lighthall et al., 2009).

A large multi-centre international prospective study was undertaken in 90 hospitals across Australia, New Zealand and the UK to investigate incidences of serious physiological abnormalities preceding primary adverse events (Kause et al., 2004). The primary events measured in the study included in-hospital deaths, cardiac arrests, and unanticipated ICU admissions. Over the study period of three days, 68 hospitals reported 638 primary events including 308 (48.3%) deaths, 141 (22.1%) cardiac arrests, and 189 (29.6%) unplanned ICU admissions. Around 60% (383) of the primary events were preceded by a total of 1032 documented serious physiological abnormalities. The most common derangements were hypotension and a fall in the Glasgow Coma Scale (Kause et al., 2004).

Warning signs of impending cardiac arrest are often present for considerable periods of time (Schein et al., 1990). The antecedents of cardiopulmonary arrest were prospectively studied in 64 US ward patients who had suffered a cardiopulmonary arrest. The aim was to identify underlying disease processes, presenting complaints, changes in clinical observations and common clinical features. The study found that 76% of patients who arrested on the general hospital ward had predominantly respiratory and metabolic derangements immediately prior to the event. Fifty four patients (84%) had altered vital signs demonstrating clinical deterioration within eight hours of arrest. Other changes included derangement in respiratory function and

mental status. Only five patients (8%) survived to discharge. The study concluded that recognising changing physiology and increased efforts to predict and prevent cardiopulmonary arrest might prove beneficial to the patients' outcome (Schein et al., 1990).

An Australian prospective study conducted in five general hospital ward areas aimed to determine the predictive value of selected abnormal clinical observations in a ward patients and the link to in-hospital mortality. During the study period, 6303 patients were admitted to the wards with 564 (8.9%) of patients experiencing 1598 clinically abnormal events. From those 564 patients, 146 (26%) died whilst in hospital. The two most common abnormal clinical events that occurred were oxygen desaturation (51% of all events) and hypotension (17.3% of all events). Using linear regression, six clinical observations were identified as significant predictors of in-hospital mortality. These included a decrease in Glasgow Coma Score, the onset of coma, hypotension, significantly reduced respiratory rate, decreased oxygen saturation and profound bradycardia. The presence of any one of the six events was associated with a 680% increase in the risk of mortality (Buist et al., 2004).

The evidence from these previous studies clearly point to an association between abnormal physiology with altered vital signs and an increase in the risk of patient deterioration, cardiac arrest and higher mortality (Buist et al., 2004; DeVita et al., 2006; Goldhill & McNarry, 2004; Kause et al., 2004; Lighthall et al., 2009; McGloin et al., 1999; Schein et al., 1990). It is crucial that healthcare teams, including graduate nurses, have the competency to recognize the changes in the vital signs that are associated with patient deterioration, and to implement appropriate intervention. There is clear evidence suggesting that should changes in vital signs be missed or not recognized, this can often lead to poor clinical decision making, delays in seeking advice, suboptimal management and serious adverse events with an increase in patient morbidity and mortality (Buist et al., 2004; Goldhill & McNarry, 2004; Lighthall et al., 2009; Schein et al., 1990). The findings from these studies provide justification to investigate graduate nurses' role and competencies in recognizing signs of clinical deterioration.

Clinical Response Systems

In an effort to tackle the problem of patient deterioration, a number of response systems have been developed and tested to try to improve recognition and response. The main goals of these systems have been to: improve patient outcome; reduce the number of adverse events; reduce length of hospital stay; and reduce mortality rates in the acutely ill patient (Allen, Elliott, & Jackson, 2017; Anesi, 2017; Massey et al., 2009).

One system introduced was the “Rapid Response System” or the “RRS”. The RRS operates across a hospital and is aimed at the early detection of the seriously ill or deteriorating patients. The system uses the criteria of abnormal vital signs or concerns about the patient’s condition, to initiate a call for help (Hillman, Chen, & Jones, 2014). It facilitates members of the hospital staff to advocate for the patient, and raise concerns about the patient’s condition. Recently in Australia, there has been a concerted effort to include patients, their relatives, administrative staff, non-qualified healthcare workers, together with health professionals, in the processes of recognition of patient deterioration and the escalation of patient management (Albutt, O’Hara, Conner, Fletcher, & Lawton, 2017). Detection of physiological abnormality, usually related to altered vital signs, acts as a “trigger” for a staff member to call for help from the RRS. An initial coordinated response to assess and stabilise the deteriorating patient from the rapid response team is led by a clinician who possesses expert knowledge, skills and experience (Hillman et al., 2014).

The RRS is often termed as a ‘track and trigger’ system, with two distinct pathways. The first pathway is a ‘tracking’ or detection pathway (often known as early warning score) that utilises the criteria of pre-defined physiological signs of clinical deterioration. This first pathway generates a risk stratification score reflecting the ability of the patient to maintain normal physiological perfusion and organ function (DeVita et al., 2006).

The second pathway is the clinical “response”. It uses the risk stratification score to determine the appropriate level of clinical response. If a high risk score is generated, an immediate response is provided by the RRS, a team of expert clinicians. The aim of the response is to provide appropriate and timely intervention at the bedside, and to prevent further deterioration (DeVita, 2005; Smith et al., 2008).

Studies evaluating the RRS have uncovered inconsistencies within the literature evaluating the use of RRS track and trigger system. Some studies have called for more comprehensive data to support the effectiveness of RRS. These studies have used outcome measures such as unexpected death and unintended ICU admission to question the effectiveness of RRS in the hospital setting. One such Australian study used a large cluster randomised trial with the aim of evaluating the impact of the introduction of an RRS in 23 hospitals using a medical emergency team (MET). The primary outcome measures were the number of cardiac arrests, unexpected deaths, or unplanned ICU admission during a 6-month study period. It was found that the introduction of the RRS increased the overall calling incidence for a MET. Despite the increased number of calls for help in RRS hospitals, the study found no significant difference in outcomes for patients in the MET system or the control hospitals. The study concluded that the RRS significantly increased emergency team calls, but did not substantially affect the outcome in relation to unplanned ICU admission, cardiac arrest or unexpected death (Hillman et al., 2005).

In 2010, a systematic review and meta-analysis of the international literature was conducted to determine the effect of RRS on reducing cardiopulmonary arrest and hospital mortality rates. Eighteen studies were identified involving nearly 1.3 million hospital admissions. The findings suggested that the implementation of a RRS in adults was associated with a 33.8% reduction in rates of cardiopulmonary arrest, outside the intensive care unit, but was not associated with lower hospital mortality rates. It was concluded that despite RRS reducing the number of cardiac arrests, there was a lack of evidence to support their effectiveness in reducing hospital mortality (Chan, Jain, Nallmothu, Berg, & Sasson, 2010).

In contrast to the previous review there were a plethora of studies that provided evidence to support the effectiveness of RRS. One such study aimed at determining whether the introduction of RRS and a MET would decrease the rate of adverse outcomes in patients undergoing major surgery. The MET consisted of ICU based medical staff who responded to concerns raised by nursing and medical staff in the ward areas. The study compared a control group of 1,116 patients to an intervention group of 1,067 patients over consecutive four month periods. The study found a significant reduction in adverse outcomes, 336 in control group vs 136 in the intervention group, with a 57.8% reduction in relative risk. There was a large decrease in the number of respiratory failures, strokes, sepsis and acute renal failures in the intervention group with a significant reduction in emergency ICU admissions and death. Length of hospital stay also decreased by four days in the intervention group. It was concluded that the introduction of an RRS was associated with a reduced incidence of postoperative adverse outcomes, postoperative mortality rate, and mean duration of hospital stay (Bellomo et al., 2004).

A prospective, before-and-after study was undertaken to determine whether the introduction of a multi-faceted RRS to detect clinical deterioration in patients, would decrease the rate of predefined adverse outcomes. The outcome measures included: the number of unplanned ICU admissions; the number of MET reviews; unexpected hospital deaths; vital sign documentation frequency; and incidences of medical reviews following clinical deterioration. Significant reductions were seen in unplanned ICU admissions and unexpected deaths during the intervention period. The number of medical reviews for patients with significant clinical instability, the number of patients receiving a MET call and the frequency of vital sign recording all increased significantly during the intervention period. It was concluded the introduction of RRS decreased unplanned ICU admissions and unexpected hospital deaths and increased monitoring of vital signs and triggering of a medical review (Mitchell et al., 2010). The study acknowledged some limitations with regards to the lack of a control group and the pre and post intervention groups potentially being unmatched in terms of severity of condition. A further possible bias may have been staff awareness, which may have led to a Hawthorne effect thus potentially affecting the results.

Likewise, the findings of a retrospective study conducted in a 350-bed community hospital in the US, suggested that there was a decrease in the overall hospital mortality related to the effects of a RRS. There was also a reduction in the number of cardiac arrests and unplanned ICU admissions decreased from 45% to 29% (Dacey et al., 2007). The authors concluded that the use of an RRS improved the timely management and ultimately the quality of care delivered to ward patients (Dacey et al., 2007).

An investigation into whether a MET system could reduce the incidence of adverse events, highlighted a significant underutilisation of both the RRS and the MET team. Despite patients meeting documented MET calling criteria, only 30% of these patients actually had a MET called. A conclusion from the study identified that many nurses lacked an understanding of the importance of monitoring, documentation and responding to changes in vital signs (Hillman et al., 2005).

A further retrospective comparative study aimed at evaluating a nurse led, after-hours, rapid response system (RRS), and the effect it had on the number of MET calls and adverse events within the hospital. Within the study, an audit of two groups of 150, randomly selected patient's, medical records was undertaken. One group of patients was admitted prior to, and the other after the introduction of the nurse led RRS. The study found that the use of a nurse led RRS did not alter the number of adverse events experienced by patients out of hours. It did, however, suggest that using a reduction in the number of adverse events (such as unplanned ICU admission) as a measure of success for the out-of-hours RRS, may have been misleading. The study identified that the number of unplanned ICU admissions could increase due to improved surveillance and appropriate referral of the patient by the nurse led RRS. It also found a significant level of underutilization of the MET. Although the study identified 45% of patients in the intervention group fulfilled the criteria for MET call, only 2.6% had a MET call activated. Possible reasons for the underutilization of the MET included continuing suboptimal care and delay in activating the MET, or possibly due to successful management of the patients by the nurse led RRS, negating the need for a MET (Massey et al., 2015).

A similar study to determine the prevalence of MET call criteria and the subsequent patient outcomes, was undertaken in 10 Australian hospitals. Of 1688 patients recruited, 3.26% (n = 55) fulfilled MET call criteria at the time of recording a single set of vital signs. None of the 55 patients identified received a MET call within 30 min of being identified. Only 2 (3.6%) of the patients had a MET call within the subsequent 24 hours. It was noted that in-hospital mortality was significantly higher for patients fulfilling MET call criteria (9.1%) compared to those that did not (2.6%) (Bucknall, Jones, Bellomo, & Staples, 2013).

It could be argued that whilst some nurses know the criteria for a MET call, they are reluctant to take action. This reluctance could be associated with a: fear of being reprimanded; misunderstanding the MET activation criteria; allegiance to the home or ward medical team access to advice and support; and improvement in the patient's condition without intervention (Bucknall et al., 2013; Massey et al., 2014; Odell, Victor, & Oliver, 2009).

The problem of failure to call the MET, despite patients meeting the MET call criteria was the impetus for an Australian study to investigate initiatives to improve the use of the RRS and the effect on the number of in-hospital cardiac arrests. The study was undertaken in a 400 bed metropolitan hospital. As part of the study, three initiatives were undertaken: an orientation program for new doctors; professional development for medical registrars; and the use of ICU liaison nurses. It was found that the incidence of cardiac arrests reduced from 2.4/1000 admissions in the year 2000 to 0.66/1000 admissions in 2005. It was concluded that RRS supported by multifaceted education for clinical staff significantly reduced the incidence of cardiac arrest (Buist, Harrison, Abaloz, & Dyke, 2007).

Further systematic literature reviews have also provided support for the use of RRS. A review and meta-analysis of the effectiveness of RRS on rates of in-hospital cardiopulmonary arrest and mortality concluded that the implementation of an RRS was associated with a reduction in cardiopulmonary arrests and hospital mortality (Maharaj, Raffaele, & Wendon, 2015; Solomon, Corwin, Barclay, Quddusi, & Dannenberg, 2016). Abnormality in commonly measured vital signs such as heart rate,

respiratory rate, blood pressure, conscious level and increasing early warning scores were associated with worse outcome for patients and an increase in mortality (Donohue & Endacott, 2010; Goldhill et al., 2005; Jonsson, Jonsdottir, Möller, & Baldursdottir, 2011; Paterson et al., 2006; Smith et al., 2008). Further the literature review identified that the presence of a physician in the RRS did not significantly alter mortality reduction (Maharaj et al., 2015).

The nature of the deteriorating patient and the number of variables, made it difficult to provide clear evidence that the RRS was responsible for the improvement in the patient's condition and outcome. It is clear from these studies, however, that the implementation of the RRS demonstrated a positive effect on the recognition of patient deterioration, which in turn reduced the number of in-hospital cardiac arrests and unplanned ICU admissions.

The Strategic Response

Despite a lack of clear evidence as to the effectiveness of the RRS to improve patient outcomes, many countries have introduced such systems to address the problem of patient deterioration. Internationally, the problem has been a concern to health providers and health care professionals. One of the initial leads in addressing these concerns came from the US Institute for Healthcare Improvement (IHI). In 2004, it instituted a safety and quality improvement campaign: "The 100,000 Lives Campaign". This initiative was introduced into the US healthcare system, to reduce morbidity and mortality related to avoidable deaths. One of the core aims of the campaign was to deploy RR teams to patients at risk of cardiac or respiratory arrest. This led to a nationwide adoption of the RRS within 1,500 US hospitals and subsequently led to a significant reduction in the rates of cardiac arrests, lengths of stay in the ICU, and mortality rates (IHI, 2017).

Following the IHI campaign, many countries implemented similar initiatives to improve healthcare safety and quality focusing upon recognising and responding to patient deterioration. These countries have included: Brazil, the Instituto Qualisa de Gestão; Canada, the Canadian Patient Safety Institute; Denmark, the Operation Life

campaign; Scotland, the Patient Safety Alliance; Wales with 1,000 Lives Campaign; and the UK (IHI, 2017).

The UK has been particularly influential in the development of systems to address the issue of patient deterioration. In 1999, the National Institute for Health and Care Excellence (NICE) was inaugurated as a special health authority, to reduce variation in the availability and quality of treatment and care in the NHS (NICE, 2017). Currently, the remit of NICE is to provide national guidance and advice to improve health and social care. One of the areas that NICE focuses upon is the treatment and care of the acutely ill hospital patient.

In 2007, NICE released the CG50 guidelines namely “Acutely ill adults in hospital: recognising and responding to deterioration”. These guidelines recommended the use of RRS for all adult patients within acute care hospital settings in the UK (NICE, 2007). The use of RRS was supported by wide ranging recommendations related to patient management, staff education and the need for competence of healthcare staff caring for the acutely ill patient (NICE, 2007). More specifically, the CG50 guidelines provided specific suggestions concerning all healthcare staff in the acute hospital setting. These guidelines recommended: competencies in monitoring; measurement of patient vital signs and physiology; interpretation of vital sign measurements; and prompt response to the acutely ill patient (NICE, 2007). It was recommended that these competencies were to be at an appropriate level of care, commensurate with the healthcare professionals’ scope of practice. The aim was to detect physiological decline in at risk patients and to provide timely clinical intervention. It was envisaged that the competencies would improve both morbidity and mortality, and reduce the incidence of suboptimal care (NICE, 2007).

In 2009, a competency framework designed by the UK Department of Health (UKDH) “Competencies for Recognising and Responding to Acutely Ill Patients in Hospital” (CRRAPH) was produced in support of the NICE CG50 guidelines (Department of Health, 2009). The competency framework outlined specific detailed competency standards for healthcare staff involved in responding to patient deterioration. The work was led by the UKDH, in collaboration with a

multidisciplinary group of expert practitioners, including nurses and training providers (Department of Health, 2009). The CRRAPH framework used a number of pre-existing competency standards developed by the European Society of Intensive Care Medicine (ESICM), the Foundation Programme for post-registration doctors, the Curriculum for Intensive Care Medicine and the Critical Care Advanced Practitioner competencies (Department of Health, 2009). Consensus agreement from the multidisciplinary group helped to finalise the CRRAPH framework. Significantly, the validity of the selected competencies have not, as yet, been tested or validated by any group of healthcare professionals. Thus, one of the aims of this study was to measure the validity of the competency standards documented in the framework, with a group of graduate nurses.

A secondary aim of the competency framework was to support the use of a 'graded response strategy'. This strategy reflected the need for escalating levels of intervention in the care of a deteriorating ward patient. The NICE CG50 guidelines outlined the need for a two tiered response strategy. The first tier included the use of a ward level response, which ranged from an increased level of physiological monitoring, to a patient review by the senior nursing staff, together with calling the medical team responsible for patient care. The second tier response was the use of a dedicated hospital team with specific advanced skills in managing the critically ill patient to review and implement appropriate treatment, following ward level interventions (NICE, 2007).

The CRRAPH competency framework discussed the need for a 'chain of response' (COR) identifying several escalating roles along a continuum (see Figure 2 below).

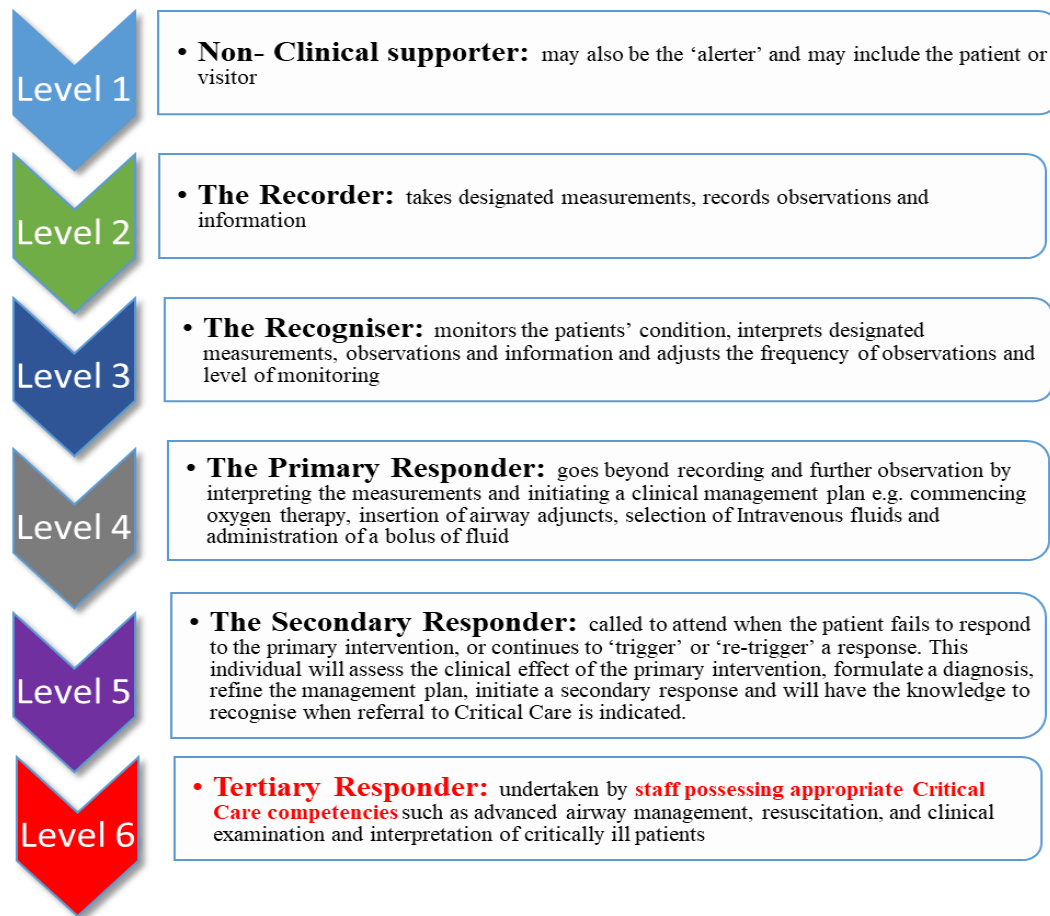


Figure 2. The “Chain of Response” (Department of Health, 2009).

Each of the roles outlined in the COR recommended competency standards related to the patient’s management. The roles were divided from level 1 to 6: level 1 “the alerter”; level 2 “the recorder”; level 3 “the recogniser”; level 4 “the primary responder”; level 5 “the secondary responder”; and finally level 6 “the tertiary responder” The roles escalated in both complexity and responsibility, from the most basic, level 1, to the technically advanced, level 6 (Department of Health, 2009). Whilst the roles were given names, the UKDH competency framework did not provide any recommendation for the allocation of the roles to any one professional group. This action was intentional to provide the organisation implementing the competency framework, maximum flexibility to assign roles based upon professional skill mix (Department of Health, 2009).

Significantly, no studies could be located that determined the validity or relevance of the UKDH competency framework to any specific professional group. One of the key aims of this study was to redress this gap in the literature. This was to be achieved by establishing the validity of the CRRAPH competencies in the GRN role. Also, the study aimed to validate the “chain of response” (COR) levels associated with the acute care competencies by identifying the level and complexity of the role undertaken by GRNs when managing the deteriorating ward patient.

Nurse competencies

Nursing competency standards define the minimum levels of performance that all nurses must demonstrate when providing nursing care (Walker & Godfrey 2008). These standards generally represent a group of specific skills, processes or procedures requiring expertise through the application of appropriate knowledge, skills, abilities and behaviours to perform the tasks skillfully and with confidence (Axley, 2008).

In the early 1990s the Australian Nursing and Midwifery Council (ANMC) introduced a set of national competency standards for registered nurses. The national competency standards defined core competencies to facilitate the assessment of the RN performance, and define the expected standards for practice (ANMAC, 2006). These core competencies were used to guide universities in designing undergraduate curricula leading to a level 1 registered nurse qualification. The use of competency standards has been advocated as a means to clarify the expectations of the nurse’s role and performance, and to clearly articulate the scope of practice of a nurse in a particular setting (Watson, Stimpson, Topping, & Porock, 2002). Moreover, the attainment of specific competency standard by the individual was used as a measure of academic achievement from a program of study often referred to as a competency-based model of education (Axley, 2008).

With regards to the deteriorating hospital patient, both undergraduate and post-graduate professional education for all staff including nurses, was seen to be fundamental to the provision of any hospital-based solution to identifying and managing the deteriorating patient (ACSQCH, 2010; ACSQHC, 2014; ACSQHC,

2017). This education was supported by an abundance of studies recommending the need for improved education, clinical skills and a focus on competencies for healthcare professionals, dealing with the acutely unwell deteriorating ward patient (Cutler, 2002; Haines & Coad, 2001; Liaw et al., 2011; McQuillan et al., 1998; Smith & Poplett, 2004; Smith et al., 2008).

In 2008, the ACSQHC released a paper entitled “Recognising and Responding to Clinical Deterioration: A background paper” (ACSQHC, 2008). The intent was to tackle the problem of clinical deterioration with a national strategy of initiatives, aimed to improve patient safety and enhance the quality of care provided in Australia (ACSQHC, 2008). In April 2010, this initiative was followed by the ACSQHC releasing the “National Consensus Statement: Essential elements for recognising and responding to clinical deterioration framework”. This document was endorsed by the Australian Federal Health Ministers and based upon the UKDH model. The framework described 8 elements and focused on clinical competence essential for the prompt, reliable recognition and response to clinical deterioration in acute health care facilities across the nation (ACSQHC, 2010). (see Table 1 below).

Table 1

ACSQHC: Essential Elements for Recognising and Responding to Clinical Deterioration.

Clinical Processes	Organisational Prerequisites
1. Measurement and documentation of observations	5 <u>Organisational</u> supports
2. Escalation of care	6 Education
3. Rapid response systems	7 Evaluation, audit and feedback
4. Clinical communication	8 Technological systems and supports

Within the eight elements of the framework, half were broad clinical processes, and the other half focused on organisational prerequisites. The clinical processes were based on assessment, ‘tracking’ the patient’s physiological variances and ‘triggering’ the appropriate escalation of care provision. These processes were to be supported by effective clinical communication and the well-resourced RRS. There was also a call for the provision of an audit and evaluation system to facilitate quality improvement and lessons learnt. The aim was to provide a hospital wide safety net for ward patients who experienced sudden acute physiological deterioration, or complex needs outside the normal ward staffs level of expertise (ACSQHC, 2010; DeVita et al., 2006).

Within the National Consensus Statement, the major organizational element of “education”, mandated that healthcare facilities should have an educated and appropriate skilled workforce to provide appropriate care for the deteriorating patient (ACSQHC, 2010). The “education” element outlined a number of key functions that all healthcare professionals working within the acute care setting should be able to perform. These functions included: the systematic assessment of the patient; understanding and interpreting abnormal physiological parameters; initiating appropriate early interventions for deteriorating patients; and responding with life-sustaining measures in the event of severe or rapid deterioration (ACSQHC, 2010).

In 2012, the Australian focus on the deteriorating patient saw the ACSQHC release the “National Safety and Quality Health Service (NSQHS) Standards” (ACSQHC, 2012). The main purpose of the NSQHS standards was patient safety. It was believed that harm could be minimised by improving the quality of healthcare service, implementing a quality assurance mechanism and evaluating the system. Such an audit was to ensure minimum standards of safety and quality (ACSQHC, 2011). The intent of “Standard 9” of the NSQHS Standards, was to ensure prompt recognition and appropriate timely action in dealing with a deteriorating patient in a hospital setting. This standard was based on the ACSQHC National Consensus Statement, which mandated policies, procedures and protocols within all public and private hospitals. In 2013, all public and private hospitals in Australia were assessed against the NSQHS Standards (ACSQHC, 2010).

Concerns were raised by healthcare professionals, with regards to the NSQHS “Standard 9” recommendations; unfortunately no details were provided as to who raised the concerns. These people felt that the NSQHS recommendations did not go far enough in clarifying the roles of staff and the training they would require to undertake these roles (ACSQHC, 2014). Initially, the NSQHS document advocated that the clinical workforce be trained and proficient in “basic life support” and that a clinician, who could provide “advanced life support” should be within the hospital. In 2013, the feedback received from the healthcare professionals by the ACSQHC, raised further questions regarding, which clinicians needed basic life support education and whether this was sufficient to ensure adequate levels of competency in the skills required to recognise and respond to clinical deterioration (ACSQHC, 2014).

In 2014, in response to the concerns raised by healthcare professionals, the ACSQHC launched a consultation paper: “National Safety and Quality Health Service Standards: Training and competencies for recognising and responding to clinical deterioration in acute care”. The paper was aimed at identifying core competencies and training for recognising and responding to clinical deterioration in acute care hospitals, in order to meet the requirements of the NSQHS Standards (ACSQHC, 2014). The paper provided an overview of key safety and quality issues and approaches to training. The ACSQHC advocated that all “clinicians” should possess the necessary skills and knowledge, to keep patients safe, and to avoid preventable harm to the deteriorating patient. The term “clinician” referred to “doctors, nurses and allied health professionals who provide direct patient care” (ACSQHC, 2014, p 1). Fundamental components of successful recognition and response, included the necessity that clinicians should be able to: accurately assess patients; interpret signs and symptoms; recognise the urgency of a situation; communicate effectively; and provide immediate escalation and interventions (ACSQHC, 2014).

The ACSQHC recognised that when clinicians lacked the requisite skills to identify and initiate early interventions, deteriorating patients may receive less than optimal care, leading to serious adverse outcomes (ACSQHC, 2014; NICE, 2007; McGloin et al., 1999; Schein et al., 1990; Smith et al., 2008; Story et al., 2004). To

date, there has not been any specific conclusion to the ACSQHC consultation process. In a private conversation between the researcher and the chief project officer for the ACSQHC, it was apparent that the ACSQHC had no specific plans to release a prescriptive list of competencies for managing the deteriorating patient (Chief project officer, ACSQHC, personal communication, July 19, 2017).

In April 2017, a draft second edition of the NSQHS Standards was released for consultation. Within it, a more detailed section detailing the standard for “Recognising and Responding to Acute Deterioration” was provided. The new standard included the need for clarity of clinical roles and a focus on competencies and skills required to manage the deteriorating patient. The NSQHS consultation also provided a more detailed description of the processes related to governance, together with a requirement for further processes including audit, that support clinicians who respond to clinical deterioration (NSQHC, 2017). The new NSQHS Standards emphasised the need for clinicians to participate in competency-based training to ensure they have the skills and knowledge to recognise and respond to the deterioration patient, and that such training is appropriate to their role. The NSQHS Standards (2017) stated:

Clinicians who provide clinical care need skills in providing essential emergency interventions for common causes and symptoms of life-threatening physiological deterioration while awaiting help. These include skills in essential emergency management of conditions such as airway obstruction, hypoxia, respiratory distress or suppression, arrhythmia, hypotension, fluid overload, seizures and sepsis (NSQHS Standards Consultation, 2017 p. 394)

As yet, both the ACSQHC and the NSQHS have not provided specific detail as to the core clinical competencies required by healthcare professionals in the management and the deteriorating patient. There also continues to be a lack of delineation of roles in relation to professional groups and the expected competencies of these professions in the management of the deteriorating patient within the Australian healthcare setting. A core aim of this current study was to provide insight into the role and competencies used by the graduate registered nurse when managing the deteriorating patient.

The Registered Nurse and Clinical Deterioration

Recognising clinical deterioration.

Registered nurses contribution in recognising and responding to the deteriorating ward patient has received considerable attention within the literature (Jones,et al., 2009; Liaw et al., 2011; Massey et al., 2014; Massey, Chaboyer, & Anderson, 2017; Odell et al., 2009; Purling & King, 2012). Research evidence points to the RN being a pivotal contributor to the successful rescue of the deteriorating ward patient (Andrews & Waterman, 2005; Cox, James, & Hunt, 2006; Endacott & Westley, 2006; Endacott et al., 2007; Gazarian, Henneman, & Chandler, 2010; Massey et al., 2014). There does not, however, appear to be any studies that clearly define the RN role. The majority of studies reviewed have broadly focused on the need for ward nurses to recognise and respond to clinical deterioration, activate the RRS, and summon the MET.

The lack of clarification within the literature of the expected role of the registered nurse is problematic, resulting in role ambiguity, anxiety, inconsistent practice and a lack of intervention to the deteriorating patient. As nurses are in constant contact with patients they have a key role in observation and surveillance of the ward patient (Aiken, Clarke, Silber, & Sloane, 2003). Observance includes the recognition of physiological abnormalities, (Clarke, 2004; Considine & Botti, 2004; Massey et al., 2010). Furthermore, it is suggested a nurse's professional responsibility is to comprehend and identify the significance of patient observations (Hogan, 2006; Kisiel & Perkins, 2006). Patient survival often depends on the nurse's decision to summon assistance (Cioffi, 2000). Effective observation of vital signs and initiating timely and appropriate intervention to ward patients, are often the key to providing appropriate and timely management to the deteriorating patient (NICE, 2007; Odell et al., 2009). It is one of the core aims of this current study to provide some clarity as to the role undertaken by the graduate registered nurse.

Patient's vital signs are commonly reported by nurses as quantifiable physiological indicators, which can act as warning signs that the patient is deteriorating (Gazarian et al., 2010). It is often the changes in these vital signs that are reported to medical staff, in order to gain approval for interventions (Andrews & Waterman, 2005). The cornerstone of many RRS systems are the effective recording of the patients vital signs (Subbe & Welch, 2013).

Whilst objective measures of vital signs were seen by many to be the best way to identify clinical deterioration in the patient, some authors have raised concerns (Cioffi, 2000; Lavoie et al., 2016). It was argued that, depending on clinicians experience and background, the concept of patient deterioration was viewed differently. Acute care ward nurses appeared to be less dependent on objective vital sign measurements to identify patient deterioration. They often seemed to use more subjective cues such as noisy breathing and increase respiratory effort (Cioffi, 2000). This perspective was supported by the suggestion that changes in vital signs were not always present and in some cases were seen to be less sensitive than subjective assessment in identifying clinical deterioration (Lavoie et al, 2016). The literature suggests that patients can be found pulseless, apnoeic, and unresponsive in spite of having normal vital signs at the point of their last measurement (Skrifvars, Nurmi, Ikola, Saarinen, & Castrén, 2006).

Registered nurses' previous experience with similar patients, presenting with similar conditions, may provide RNs with an insight into the usual or expected trajectory and severity of the illness. This insight may be interpreted as intuition and trigger the RN to respond (Gazarian et al., 2010). Knowing the patient and the use of intuition has been linked to the recognition of the deteriorating patient. Subjective cues are often stated by nurses as, "gut feelings" or "sixth sense" (Cioffi, 2000; Cox et al., 2006; Massey et al., 2014). Although experienced nurses' report intuitive feelings, they often confirm their suspicions by undertaking vital sign recordings (Odell et al., 2009). A key component in recognizing patient deterioration was often predicated on nurses knowing or having familiarity with the patient (Andrews & Waterman, 2005; Cioffi, 2000; Cox et al., 2006; Gazarian et al., 2010).

Despite some discussion as to the best method for identifying patients who are deteriorating, it was generally agreed that some form of physiological monitoring was required for the early recognition. It was seen as essential that early recognition would provide an appropriate and timely response (Buist et al., 2004; Franklin & Mathew, 1994; Goldhill & McNarry, 2004; McQuillan et al., 1998; Lighthall et al., 2009; Ludikhuize et al., 2012). As previously alluded to, the lack of recognition of patient deterioration has been highlighted as factor in suboptimal care and has been attributed to the inferior assessment skills of both nursing and medical staff (McGloin et al., 1999; McQuillan et al., 1998). Despite significant agreement that accurate assessment of vital signs was essential for the early recognition of the deteriorating patient, it was particular concerning that several studies identified that monitoring of vital signs was often infrequent, incomplete or poorly performed by the nursing staff (Cardona-Morrell et al., 2016; Mitchell & Van Leuvan, 2008). A contributing factor to the problem of poor vital sign monitoring was the attitudes of nursing staff. The recording of vital signs was often viewed as ritualistic and of low priority by RNs, despite the evidence from studies of its importance in the recognition of patient deterioration (Hogan, 2006).

Further problems in vital sign measurement, was reported in an Australian retrospective observational study conducted on the vital signs charts of 62 ward patients. A total of 1597 vital signs were recorded for the patient group. The study found inconsistencies in the recordings, with a significantly lower recording of respiratory rate in comparison to blood pressure, heart rate and temperature. The study concluded that the inconsistencies to perform vital sign measurements could underpin the failure to recognise the deteriorating ward patient (Mitchell & Van Leuvan, 2008).

A further Australian observational study of 42 nurses working in an acute care hospital, aimed to establish a profile of nurses' vital signs monitoring practices, related dialogue, and adherence to hospital protocols. The study found inconsistent practices in the selection of vital signs to be measured and the nurses' responses to the measurements. The participants appeared to rely on clinical judgement or time availability, rather than on hospital policy. Incomplete sets of vital sign observations

were common with only 6% to 21% of full vital signs being recorded. The study concluded that the inconsistent practices could have adversely impacted on the identification of deteriorating patient (Cardona-Morell et al., 2016).

A small descriptive study using focus groups was undertaken in the UK to explore the reasoning behind the lack of patient vital sign observations and the values and beliefs about patient monitoring. Participants in the study felt that vital sign observations were routine and of little importance, moreover, the task was often delegated to less qualified staff. They also felt that they lacked knowledge and skills to undertake and interpret vital signs appropriately. The study also found that there was a lack of clarity in the required frequency of vital sign observation, which led to disparity between staff and between ward areas (Hogan, 2006). Unfortunately, the study lacked details in terms of sample numbers, population or the number of focus groups. Although the study was small the findings are a sad indictment of registered nurses educational preparation for their role and it serves as evidence that some nurses are unprepared for clinical practice.

In a small UK study that used triangulation and a combination of participant observation and semi-structured interviews, the authors aimed to uncover the practice of recording vital sign observations of general ward patients. The study focused upon how these observations were used in patient assessment. It identified concerns that the task of recording vital signs was often delegated to unqualified healthcare assistants, who relied on electronic equipment. This practice was related to the registered nurse being taken away from the bed side to perform other duties. This occurrence could have led to information about vital cues being missed and the patient's condition deteriorating (Wheatley, 2006). Whilst this study concurred with other studies, it was limited to one hospital and two wards, with 10 registered nurses and 10 healthcare assistants. Limitations notwithstanding, however, it compels registered nurses to become vigilant in their scope of clinical practice. It identifies the importance of experience and expertise in the assessment of the patient's condition and identification of clinical deterioration.

The early warning scoring system used to track the patient's vital signs and trigger the RSS was identified in some studies as a barrier to vital sign recording and activation of the RRS. A literature review aimed at comparing single parameter track and trigger systems (SPTTS), identified that some systems are poor at differentiating between patients at risk of deterioration and those with transient abnormality (Smith et al., 2008). This lack of differentiation, between transient abnormality, and patient deterioration was identified as being problematic for nurses. The frequency of triggering from a SPTTS could have potentially desensitized nursing staff over time. Moreover, it could potentially lead to a point where abnormal vital signs may not be viewed as significant by the nursing staff leading to suboptimal care and further adverse events (Smith & Aitken, 2016).

Several studies commented on the reliance of equipment to monitor vital signs (Cox et al., 2006; Hogan, 2006; Wheatley, 2006). The evidence from these studies suggested nurses focused less on their sensory skills of assessment missed vital cues in detecting patient deterioration (Cox et al., 2006; Wheatley, 2006). As previously mentioned subtle cues such as noisy breathing and agitation can appear prior to changes in the patient's vital signs (Cioffi et al., 2010; Gazarian et al., 2010).

With the advent of increased medical technology, it is not uncommon for nurses to use a variety of tools to measure vital signs. It is argued, however, that a reliance on the use of electronic monitoring equipment has led to de-skilling of registered nurses, with the result they are less capable of performing competent physical assessment of the patient (Wheatley, 2006). A descriptive study exploring experienced nurses' perceptions of graduate nurse competence in acute care, identified concerns with regards to assessment skills. The study found that experienced nurses felt that graduates were over reliant on equipment and did not possess the skills to adequately assess the patient (Hartigan, Murphy, Flynn, & Walshe, 2010). The studies discussing the lack of vital signs recordings provide some useful insight into the perceptions and practices of registered nurses. It is worth noting, however, that these studies could not be generalized to a larger population as they used small sample sizes and a descriptive methodology. As such these studies could be considered less

significant. Nevertheless, registered nurses should be diligent and less complacent about the significance of measuring and recording vital signs.

Reporting and responding to clinical deterioration.

As nurses are primarily responsible for taking and recording vital signs, they play a vital role in summoning help to the deteriorating patients and achieving a positive outcome (Andrews & Waterman, 2005; Cox et al., 2006; Endacott & Westley, 2006; Endacott et al., 2007; Gazarian et al., 2010; Liaw et al., 2011; Massey et al., 2014; Massey et al., 2015). The early call for help and activation of the RRS provides the patient with appropriate and timely intervention to prevent further physiological decline (Buist et al., 2004; Franklin & Mathew, 1994; Goldhill & McNarry, 2004; Lighthall et al., 2009; Ludikhuize et al., 2012; McQuillan et al., 1998; Subbe & Welch, 2015).

Expectations of the registered nurse.

The literature concerning the expectations of the registered nurse in the management of the deteriorating patient is vague. Despite recommendations by the ACSQHC, NICE and the development by the UKDH of the CRRAPH competency standards for healthcare staff, no specific recommendations or guidance has been provided as to the expected role, or level of intervention to be provided by the registered nurse. The implied expectation of registered nurses in the Australian health system appears to suggest that “calling for help” and having the skills to provide cardiopulmonary resuscitation to a patient in cardiac arrest is all that is required (ACSQHC, 2010; NSQHS, 2012).

A number of studies have described the level of intervention provided by nurses when a patient’s condition is deteriorating. Some provide a basic level of intervention prior to the arrival of the RRS team, such as the: administration of supplemental oxygen; suctioning of the airway; positioning of the patient; and preparing intravenous fluids (Considine & Botti 2004; Donohue & Endacott, 2010).

Despite a number of studies advocating that nurses should provide interventions to stabilize the deteriorating patient prior to arrival of the MET (Bobay, Fiorelli, & Anderson, 2008; Brunt, 2005; Clarke, 2004; Considine & Botti, 2004; Donohue & Endacott, 2010; Liaw et al., 2011; Odell et al., 2009), none have recommended or mandated specific interventions that registered nurses should be enabled to undertake, prior to arrival of the MET.

It has been argued that the registered nurse level of intervention for the deteriorating patient should extend beyond basic interventions to include administration of supplemental oxygen, intravenous cannulation and ECG recording. It is suggested that although nurses are constrained by medical orders, they should make decisions regarding the administration of drugs and intravenous fluids in response to physiological abnormalities detected. Some experienced nurses, however, have made appropriate clinical judgments, acting beyond the medical direction and have advised junior doctors. These nurses determine the need for consultation, the level of urgency, and the seniority of medical doctor required to manage the patient's problem (Considine & Botti, 2004). This level of performance, however, has caused some internal conflict concerning roles and the scope of their practice (Cutler, 2002).

Scope of practice.

The “scope of practice” for nurses has received considerable attention within the contemporary literature. In a broad definition, the nursing scope of practice was seen to:

Describe the competencies (knowledge, skills and judgement), professional accountabilities and responsibilities of the nurse. It provides the foundation for establishing standards of nursing practice, nursing education, nursing roles and responsibilities (The International Council of Nurses; 2013 p 2).

The definition of the “scope of practice” was a contentious issue. It is viewed by some to be poorly defined, and difficult to interpret, due to inconsistent language within the literature (Birks, Davis, Smithson, & Cant, 2016; Duffield, Gardner, Chang,

Fry, & Stasa, 2011). The lack of clarity in the understanding of scope of practice and its application to new and existing nursing roles creates significant anxiety amongst practicing nurses, including role ambiguity and role stress (Birks et al., 2016).

A qualitative study was undertaken in Australia to discover the educational needs of RNs regarding the law. Within the study, 30 RNs were involved in several semi-structured focus groups. The study found considerable levels of anxiety and confusion amongst the participants regarding their scope of practice. In particular, RNs were concerned about the occurrence of adverse events, and the possible professional and legal consequences that they might have faced if they were judged to have worked outside their scope of practice. The law was seen to form a 'ceiling' to clinical practice. A way of minimizing the risk of legal consequences, if nurses were uncertain about their scope of practice, was to defer to staff with higher authority. The study identified that nurse managers used the threat of legal consequences to control nurses' clinical practice. The anxiety and stress associated with the perception of legal consequences changed the way nurse's practice, making them fearful, reluctant to make decision and at time unwilling to take action for fear of retribution (Savage, Knight, & Knight, 2011). Whilst the findings of the study are limited by sample size and methods, they provide a valid insight into the potential cost of poorly defined roles and scope of practice and the constraints this may place upon nurse.

Barriers to recognising & responding.

Thus far, this literature review has established the importance of nurses recognizing and managing the deteriorating patient. A delay in calling for help and activating the RRS leads to poor patient outcomes and doubles in-hospital mortality (Downey et al., 2008; Fuhrmann, Lippert, Perner, & Østergaard, 2008; Tee et al., 2008). The weakest link in the chain of survival of deteriorating patients is the reporting of physiological abnormalities and the activation of the RRS (Subbe & Welch, 2013). Several studies have identified that RNs are often reluctant, or afraid to activate the RRS and call for the MET team (Crispin & Daffurn, 1998; Jones et al., 2006; Massey et al., 2014; Salamonson et al., 2006; Santiano et al., 2011; Subbe & Welch, 2013; Tee et al., 2008).

The literature has highlighted the barriers influencing the nurse in recognising and responding to clinical deterioration. These barriers include: education; the workload of the nurses; ward culture and communication; negative emotions; level of experience; and the track and trigger systems used (Andrews & Waterman, 2005; Bell & Redelmeier, 2001; Cioffi, 2000; Cox et al., 2006; Crispin & Daffurn, 1998; Donohue & Endacott, 2010; Endacott et al., 2007; Jones et al., 2006; Jones et al., 2009; Liaw et al., 2011; Maggs & Mallet, 2010; Massey et al., 2014; Massey et al., 2015; Odell et al., 2009; Quirke et al., 2011; Salamonson et al., 2006; Santiano et al., 2011; Smith et al., 2008; Tee et al., 2008; Wood et al., 2004).

Education of the registered nurse.

The lack of education and training was pinpointed as a significant factor in suboptimal care of the ward patient. Many studies have recommended that the healthcare team should be educated in the key elements of managing the deteriorating patient (ACSQHC, 2010; McQuillan et al., 1998; McGloin et al., 1999; NCEPOD 2005; NICE, 2007; Wood et al., 2004). There are numerous recommendations from several studies, including: a focus upon assessment skills; multidisciplinary training for the team management of deteriorating ward patient; inclusion of content in undergraduate nursing; and medical training programs (ACSQHC, 2014; Endacott et al. 2007; Liaw et al., 2011; Odell et al., 2009; Quirke et al., 2011; Wood et al., 2004).

The need to provide education for nurses to enable them to undertake competent and accurate physical assessment of the deteriorating patient was emphasized by several authors (ACSQHC, 2014; Cox et al., 2006; Donohue & Endacott, 2010; Odell et al., 2009). It was suggested that educating nurses was extremely important and that assessment needs to go beyond vital signs and include the ability to perform in-depth physical assessments (Liaw et al., 2011). A further recommendation was that nurses should be educated in the use of a systematic approach to patient assessment as well as improving knowledge of underlying pathophysiology associated with the signs of deterioration (Andrews & Waterman, 2005).

Educational strategies to improve: the nurses' roles in recognizing and responding to deteriorating patients; decision making; assessment skills; and clinical management skills was the subject of an extensive literature review. Whilst it identified the need for competencies to initially assess and autonomously manage the patient prior to arrival of expert help at undergraduate level, no studies specific to graduate nurses were identified (Liaw et al., 2011). Another strategy recommended to improve competencies was the rotation of healthcare professionals including nurses, through critical care areas. Additionally, hospital based postgraduate interdisciplinary courses with a focus on physiology was recommended (Andrews & Waterman, 2005; McQuillan et al., 1998).

Within the Australian context, the Australian Nursing and Midwifery Accreditation Council (ANMAC) are responsible for the accreditation of education providers and programs leading to registration as a nurse. The ANMAC provided the minimum standards required by higher education providers in the preparation of the nurse. The ANMAC standards, however, were very broad and did not provide guidance on the education required to manage the acutely ill or deteriorating patient (ANMAC, 2017).

The use of the "ABCDE" mnemonic has been advocated to guide nurses in undertaking systematic and prioritized in-depth physical assessment. There were a number of hospital based training courses available in Europe, Australasia and the USA to educate staff in the management the deteriorating patient. Most of the well-established programs emphasize the nurses' role as identifying deterioration, and working under direction as part of a team response to initiating interventions (Liaw et al., 2011).

The introduction and implementation of modified early warning systems (MEWS) have also been advocated as a way of improving patient assessment and vital signs recording. There was a 210% increase in the overall frequency of full vital sign set documentation during the first 24 h post-ICU discharge following the introduction of a MEWS observation chart and an associated educational program within an

Australian tertiary hospital. The introduction of MEWS was seen a very effective way of improving patient assessment in this group of patients (Hammond et al., 2013).

This current study provides an understanding of graduate nurse's role in monitoring the deteriorating patient. The study will provide insight and evidence of the level of monitoring undertaken, and their preparation to undertake the role. It will provide understanding of the educational needs of graduate nurses in the area of patient monitoring and suggest ways that this capability could be improved in other graduate nurses.

Workloads of the registered nurse.

Workloads, including nurse to patient ratios and nursing skill mix, have been identified as barriers to nurses recognising patient deterioration and calling for help. An analysis of 3,789,917 patient admissions to multiple acute care hospitals in Canada compared in-hospital mortality among patients admitted on a weekend with that of patients admitted on a weekday. Weekend admissions were associated with significantly higher mortality rates. It was concluded that the reduction in overall nursing and medical staffing levels at a weekend along with a lack of senior staff and increased workload could be possible explanations for the increase in mortality (Chaim et al., 2001).

A smaller study undertaken in the UK found similar issues, the total mortality was increased for admissions at night and in all out-of-hours periods. Again the study concluded that limited staffing levels and resources, as well as severity of illness were the explanations for the rise in mortality (Maggs & Mallet, 2010). Inadequate nurse patient ratios, were found to have a negative impact on the overall quality of patient assessment, leading to suboptimal care (Cutler, 2002; Endacott et al., 2007; Quirke et al., 2011). Skill mix including the collective knowledge, experience and skills of the nursing team, have been shown to influence the recognition and management of the deteriorating patient (Endacott et al., 2007). Increased workloads and inadequate nurse to patient ratios have had serious influences on the nurse's ability to apply their knowledge and skills to the management of the acutely unwell patient (Cutler, 2002).

The National Patient Safety Agency identified that nurses were often overstretched and frequently interrupted with too many patients in their care. It was felt that the high workloads and interruptions impacted negatively on the nurse's ability to adequately monitor and interpret patient information, and that patient deterioration was often missed (NPSA, 2007).

Ward culture & communication.

Ward culture and hierarchy have been identified as a barrier to the recognition and response to patient deterioration. Studies indicate that nurses continue to follow the traditional hierarchy opting to call the ward based medical team, leading to underutilization of the RRS despite activation criteria being fulfilled by the patient (Crispin & Daffurn 1998; Salamonsen et al., 2006; Jones et al., 2006; Santiano et al., 2007). The traditional hierarchy has been linked to a sense of allegiance to the ward based medical team and to a fear of being reprimanded by senior ward staff for activating a MET call (Cioffi, 2000; Massey et al., 2014, Tee et al., 2008). Changing the culture of allegiance to traditional hierarchy and ward teams has been difficult to achieve (Tee et al., 2008).

The ability of the nurse to effectively communicate patient deterioration was found to often require the use of medical terminology and was dependent upon the nurse's knowledge, confidence and level of experience (Andrews & Waterman, 2005; Cox et al., 2006; Wood et al., 2004). This finding could be associated with the challenges faced by RNs when reporting clinical deterioration to medical staff as communication has been ineffective (Tee et al., 2008). Poor communication was been linked to a lack of knowledge, reduced confidence and limited experience of nurses and the increased risk of suboptimal care (Quirke et al., 2011). The differences in communication styles between ward nurses and medical staff, demonstrated a need to standardize communication between members of the healthcare team when discussing the patient's condition (Featherstone, Smith, Linnell, Easton, & Osgood, 2005). Education in communication skills have been suggested as necessary in developing nurses' skills, in reporting patient deterioration (Liaw et al., 2011). Clear and effective communication between all healthcare staff concerning the plan of care has been

highlighted as important in preventing suboptimal care of the deteriorating patient (ACSQHC, 2012; NICE 2007, NPSA 2007; Thomas, Bertram, & Johnson, 2009).

The need for clear structured communication during episodes of patient care has been emphasized in Australia by the ACSQHC (2012). Within the NSQHS framework, Standard 6 focused upon the transfer of information and communication during clinical handover. This type of handover was characterized as the transfer of professional responsibility and accountability for some or all aspects of care for a patient to another professional group. The ACSQHC emphasized the importance of clear communication to ensure timely, relevant and structured clinical handover that supports safe patient care. It was recommended that the use of structured and documented handover process would avoid miscommunication, and reduce the risk of adverse events from poor communication practices during patient care episodes (ACSQHC, 2012).

Negative emotions and self-efficacy.

Nurses involved in the management of the deteriorating patient have identified that negative emotions such as stress, anxiety, panic and uncertainty have impacted their decision making and resulted in a reluctance to activate the RRS and call for help (Cioffi, 2000; Massey et al., 2015). High levels of stress and anxiety are linked to low self-confidence and low levels of self-efficacy. This in turn has been correlated with poor clinical reasoning skills and nurses' poor performance (Munroe et al., 2015).

A number of studies have demonstrated that negative emotions influences the nurse's willingness to activate the RRS (Cioffi, 2000; Massey et al., 2014). Taking action following the recognition of patient deterioration and activating the RRS has been identified as problematic with some nurses apprehensive in calling for help and in providing initial intervention (Bucknall et al., 2013; Massey et al., 2015). The consequences of this delayed action in the recognition and management of the deteriorating patient are often disastrous. The "failure to rescue" has been frequently reported as a major cause of preventable hospital deaths and unplanned ICU admissions (Bobay et al., 2008; Hatler et al., 2009). The failure to take action has also

been linked to a nurse's negative emotion, such as apprehension, anxiety and feelings and a decrease in self-worth. These negative emotions have been identified as significant barriers, adversely influencing the nurse's recognition and response to the deteriorating patient (Bucknall et al., 2013; Massey et al., 2015).

The literature discussing a person's behavior and the actions taken, consistently link the individual's attitudes, with the actions performed. Social scientists have provided theories of planned behavior, where intentions and behaviours are a function of three basic determinants: personal attitudes; social pressure; and perceived behavioural control (Ajzen, 2005). It was posited that people intend to perform a behavior when they have a positive attitude, and when there is social pressure to perform, and when they have the opportunity and the means to undertake the behaviour (Ajzen, 2005). Behaviours can often be accurately predicted from an understanding of the person's intentions and their perceived behavioral control.

Behavioral control was seen as a key factor, linked to self-efficacy, which is defined as the individual's belief in and perception of their capability to perform a particular behavior (Ajzen, 2005; Bandura, 1977). Self-efficacy determines a person's decision to initiate behaviour, along with the amount of energy expended and the level of persistence in undertaking the task (Karabacak, Serbest, Kan Öntürk, Eti Aslan, & Olgun, 2013). Self-efficacy is related to self-confidence: the more self-confident the person is, the higher the level of self-efficacy a person possesses (Bandura, 1977; Pike & O'Donnell, 2010). A nurse's ability to act was shown to be influenced by their self-efficacy (Karabacak et al., 2013).

The attitude of the individual and the expectations of others are significant predictors of the individual's intentions, which generally correlate with behavior (Dwyer & Williams, 2002). People who believe that they have insufficient resources and opportunity to perform a certain behavior, are unlikely to form strong behavioural intentions to engage in an action (Ajzen, 2005). It is the person's intentions that determine the likelihood of an action being performed, since behaviour is consciously controlled (Ajzen, 2005).

High levels of self-efficacy have been linked to: enhanced technical skills; better assessment; and improved performance (Hollingsworth & Ford-Gilboe, 2006); enhanced clinical reasoning skills (Fry & MacGregor, 2014; Pottier et al., 2013); and leadership skills (Bobay et al., 2008; Brunt, 2005; Clarke, 2004). A nurse's positive self-perception has been shown to lead to successful performance and increased motivation to provide patient care in complex situations such as the management of the deteriorating patient (Pike & O'Donnell, 2010).

A descriptive study exploring the experiences of nurses making decisions to call emergency assistance found most nurses felt under confident calling for expert help (Cioffi, 2000). Many nurses stated they felt panic, nervousness and uncertainty. Nurses worried about doing the right thing, they wanted to be viewed as competent by medical colleagues and were concerned about being humiliated for making the wrong choice. Nurses actively sought the opinions of others and waited to see if the patient's condition deteriorated before calling the MET for help. The study identified that negative emotions adversely influence many nurses (Cioffi, 2000).

A further study, undertaken in a large Australian teaching hospital, found similar negative emotions were felt by nurses, prior to activating the RRS and calling the MET. Nurses described feelings of hesitation, uncertainty and panic prior to activating the RRS and calling the MET. Some nurses were fearful of being reprimanded and being humiliated for activating the RRS. Previous experience of being reprimanded by the MET personnel created coping responses that included hesitating in activating the RRS. This could delay the escalation of care for the deteriorating ward patient and acted as a significant barrier to RRS activation by nurses (Massey et al., 2014).

Experience of the registered nurse.

The expertise of nursing staff has also been identified as a contributing factor to the effective use of the RRS and the likelihood of nurses to call the MET. Experienced nurses were found to be more confident, assertive, and persistent in their goal of eliciting a medical response for the deteriorating patient (Andrews & Waterman,

2005). These attributes led to greater confidence in their decision to activate the RRS (Jones et al., 2009). In addition to these attributes, expert nurses utilized their knowledge, experience and intuition to facilitate the earlier recognition of warning signs of clinical deterioration (Cioffi, 2000).

Graduate nurses role in managing clinical deterioration

A plethora of studies existed that discussed general levels of competence on registration and challenges experienced during the transition from student nurse to graduate nurse on qualification (Buykx et al., 2011; Chang & Hancock, 2003; Cheeks & Dunn, 2010; Della Ratta, 2016; Duchscher, 2009; Ebert, Hoffman, Levett-Jones, & Gilligan, 2014; Ebright et al., 2004; Freeling & Parker, 2015; Higgins et al., 2010; McGaughey, 2009; Mooney, 2007; Ranse & Arbon, 2008; Theisen & Sandau, 2013; Wolff et al., 2010). Generally, however, there was a paucity of research exploring the role of the GRN in the detection and management of the deteriorating ward patient and no studies that specifically investigated their role, key skills, or competencies required to manage the deteriorating patient. Thus, it was pertinent to investigate the RN role in recognizing and responding to the deteriorating patient.

A systematic literature review, concerning the RN role in clinical deterioration found that most studies evaluated the effects of RRS and the nurse's ability to detect deterioration and call for help, but no studies identified the explicit role of the RN in managing the deteriorating patient. It did, however, outline four main themes associated with managing the deteriorating patient, these were: recognition; recording and reviewing; reporting; and responding and rescuing. The review concluded that current research in the area of the RN role was generally insufficient and of a limited quality (Odell et al., 2009).

A further literature review aimed at exploring factors that influenced GRN preparedness for recognising and responding to patient deterioration, found that none of the studies specifically focused upon the GRN role. Rather studies in the review,

centred on: GRNs experiences of transitioning to the RN role; experiences of resuscitation; exploration of the RN experiences of MET, and RN decision making during a MET. Likely factors identified as impacting on the preparedness of GRN included: staff support; lack of nurse experience; overwhelming workload; holistic patient assessment; past experience; and lack of available resources. The review acknowledged that an absence of studies specifically focusing on the GRN experiences of recognising and responding to the deteriorating patient was a limiting factor in the literature review (Purling & King, 2012).

A phenomenological approach using semi-structured interviews with eight novice nurses explored the GRN experiences of caring for deteriorating patients during the first year of practice (Della Ratta, 2016). The study identified a discrepancy in the perception of the participant's ability, and the reality of providing care. Trusting relationships with preceptors, colleagues and educators were seen as crucial in their development (Della Ratta, 2016). The study provided insight into the lived experiences and emotions of the graduate nurse dealing with clinical deterioration. It highlighted the emotional rollercoaster they experienced and the support required to navigate these experiences. The study supported the literature focusing on self-efficacy as a key component, and the need to provide positive emotional support to the RN dealing with the deteriorating patient. It was, however, limited in that it used a small sample of participants and did not provide detail related to the expectation, role or competencies of the graduate nurse in the management of patients clinical deterioration.

Graduate registered nurse role challenges.

In the context of nursing, 'role' includes the attributes of the nurse that are socially accepted and expected by individual nurses, their peers, other health care professionals, the healthcare organisation and the wider community (Major, 2003). The issue of role and the need for role clarification has been highlighted as a significant factor impacting both experienced and new graduated registered nurses (Albarran, 2009; Lu et al., 2008). The clarification of the expectations of a specific role and the associated competence to undertake an ascribed role, are fundamental to

the success of role transition, role acquisition and role implementation (Albarran, 2009; Lu et al., 2008).

It is seen as essential that graduate nurses are able to practice safely and competently utilising knowledge and skills from their undergraduate education and applying those in the clinical environment to achieve the required patient outcomes (Hickey, 2009; Meechan et al., 2011). Nursing graduates are expected to work autonomously, dealing with increasingly complex patients, often with high workloads and increasingly complicated technology (Morrow, 2009). Role overload occurs when the demands of a particular role exceed the individual's capacity, and may be due to a combination of the complexity of the role, workload, limitations of time, competence or education (Chang & Hancock, 2003; Major, 2003). Nursing authorities and hospital managers expect that graduate nurses can demonstrate competence and critical thinking in the provision of patient care. There is also an assumption that graduate nurses are able to accept responsibility and accountability and practise independently in a safe and professional manner (Wolff et al., 2010; Nursing and Midwifery Board of Australia, 2016). The expectations of the graduate nurse, also extends to their capabilities of responding to the acutely ill patient (Purling & King, 2012).

The literature described GRNs as becoming rapidly immersed in nursing teams in the provision of complex care. This involvement often involved responsibility for making key decisions about patient management (Burger et al., 2010; Ebright et al., 2004). Compounding the growing complexity of the GRN role was the increasing level of acuity in the hospital setting and the rising numbers of critically ill ward patients (ACSQHC, 2014).

The process of transition from student to GRN was recognised as a stressful process (Gerrish et al., 2007). Graduate nurses worry about the increasing level of responsibility, their ability to keep patients safe and an ability to integrate what they have learnt into their clinical practice (Kaihlanen, Lakanmaa, & Salminen, 2013). As previously noted, stress and anxiety have been shown to lower self-confidence, leading to low self-efficacy, and has been correlated with poor clinical reasoning skills and nurse's poor performance (Casey et al., 2004; Munroe et al., 2015).

Within the literature it is clear that a lack of clarification concerning the expectations of a specific role can lead to a number of problems. These include the issues of reality shock, role overload, associated role stress and reduced self-efficacy (Bandura, 1977; Brief et al., 1979; Brookes, Davidson, Daly, & Halcomb, 2007; Casey et al., 2004; Duchscher, 2009; Goode, Lynn, McElroy, Bednash, & Murray, 2013; Higgins et al., 2010; Horsburgh, 1989; Kramer et al., 2013; Lim, Bogossian, & Ahern, 2010; Meechan et al., 2011; Mooney, 2007; Valdez, 2008).

Role theory defines the behaviour of individuals in social situations, and how others perceive these behaviours (Brookes et al., 2007). The nursing literature was replete around the concept of 'role' and the issues of role stress, role ambiguity and self-efficacy (Bandura, 1977; Higgins et al., 2010; Kramer, 1974; Kramer et al., 2013; Mooney, 2007; Pike & O'Donnell, 2010). It included descriptions of the behaviours, characteristics, norms and values of a person or position (Major, 2003). Role ambiguity referred to a lack of clarity of the projected role, indeterminate expectations of the role, diffuse responsibilities and uncertainty about sub-roles (Horsburgh, 1989; Kramer et al., 2013; Schuler et al., 1979).

Lack of role clarification can lead to: lower productivity; tension; anxiety; dissatisfaction; ill health; absenteeism; increased staff turnover; and poor quality patient care (Callaghan et al., 2000; Chang & Hancock, 2003; Lambert & Lambert, 2001; Majomi, Brown, & Crawford, 2003). Moreover, disparity between the idealistic GRN's view of nursing learnt in academia, and the bureaucratic hospital system, has created conflict for the GRN. It has also been associated with the experience of reality shock (Kramer et al., 2013). This issue and the miss match between GRNs' expectations and clinical reality, was the subject of several studies. It was recognised that reality shock often lead to feelings of: insecurity; a lack of self-confidence; lower self-efficacy; frustration; and stress (Casey et al., 2004; Higgins et al., 2010; Jasper, 1996; Munroe et al., 2015; Mooney, 2007). The feelings of disappointment were clearly noted in some GRNs and was linked to a lack of time for patient care, conflicting priorities and values, and unexpected levels of responsibility (Amos, 2001; Rochester & Kilstoff, 2004; Whitehead, 2001).

Graduate programs.

In response to the recognition of the difficulties GRNs faced during their transition to RN, many countries including Australia introduced GRN programs. These programs were designed to offer additional support for GRN to facilitate the consolidation of undergraduate preparation. These objectives were achieved through supported practical experience and included the integration of theory into practice focusing on critical thinking, clinical competence, and interdisciplinary teamwork skills (Cubit & Leeson, 2009; Levett-Jones & Fitzgerald, 2005). Graduate nurse programs often included regular education sessions, a mentorship component, reduced workload and peer support (Anderson, Linden, Allen, & Gibbs, 2009). Studies supported the evidence that GRN transition programs, help to improve recruitment and retention, promote job satisfaction and develop confidence and competence (Anderson et al., 2009; Goode et al., 2013; Ulrich et al., 2010; Varner & Leeds, 2012).

Despite participation in a GRN transition program, role transition from student to professional nurse continues to be a difficult process for many newly qualified nurses (Dyess, 2009; Evans, Boxer, & Sanber, 2008). The care of the deteriorating ward patients has been highlighted as a particular clinical challenge (Purling & King, 2012). How a nurse recognizes and responds to a deteriorating patient is complex process that requires critical thinking, rapid decision-making and skilled judgment. This process may be difficult for the GRN caring for the deteriorating patient and was recognized as perhaps one of the greatest challenges facing first year registered nurse (Purling & King, 2012). Without understanding the role and what is expected of graduate nurses in the context of clinical deterioration, it is extremely difficult to prepare GRN to undertake this role. This current study aims to investigate the role and competencies of the GRN in managing the deteriorating patient.

Graduate registered nurse competency.

Competence was reported as a crucial attribute to ensuring quality, ethical and safe nursing care (Kendall-Gallagher & Blegen, 2009). The competency of nursing staff directly influences the health and safety of all patients (Axley, 2008). Nurses and midwives are mandated to be competent when they register and to maintain professional competence by undertaking annual continued professional development (Nursing & Midwifery Board of Australia; 2016). A lack of competence in nursing staff was linked to negative patient outcomes (Nilsson et al., 2014). As healthcare becomes increasingly complex, it is essential that nurses deliver safe quality care to reduce the number of adverse patient outcomes (Church, 2016).

An abundance of literature exists related to competence in the nursing profession, yet there is little consensus as to how to define competence and how to measure the concept (Axley, 2008; Flinkman et al., 2017; Lima et al., 2014; Lima et al., 2016; Yanhua & Watson, 2011). Competence has been defined as ‘the knowledge, skills, ability and behaviors that a person possesses in order to perform tasks correctly and skillfully’ (O’Shea, 2002, p. 175). It has further been referred to as a desired outcome of nursing education and professional development (Alspach, 2008; Lejonqvist, Eriksson, & Meretoja, 2016; Maynard, 1996).

Despite the lack of consensus on the definition of competence, common themes have been uncovered in the literature. These themes comprise: sound judgment; professionalism; and the possession of adequate knowledge, skills and attitudes for a particular purpose (Axley, 2008; Church, 2016; Smith, 2012; Takase & Teraoka, 2011; Valloze, 2009). The International Council of Nurses (ICN) suggested competence was the ongoing ability of a nurse, to integrate and apply knowledge, skills, and judgment to perform safe, ethical clinical practice in a designated role and setting (International Council of Nurses 2006).

Historically, nursing competence was associated with the technical aspect of performance with nurses engaged in a combination of technical and non-technical skills. These included skills such as assessment of vital signs, therapeutic

communication, and the management of haemodynamic monitoring (Axley, 2008). Competency was also used as a measure of advanced practice, technical skills and knowledge of nurses in the development of advanced practitioner roles (Halcomb, Stephens, Bryce, Foley, & Ashley, 2016).

The term competence has been aligned with the preparation and transition of student nurses into effective graduate nurses and has been used as a measure of performance and progression (Levett-Jones & Fitzgerald, 2005; Lima et al., 2016). Numerous studies have explored the general competence of GRNs from a variety of perspectives: including clinical performance; experience and expectation; strengths and weaknesses; and retention in the workplace (Lima et al., 2014). Some of these studies have suggested that GRNs are well prepared and are practice ready (Wolff et al., 2010). The majority of studies, however, raised concerns with regards to the level of competence demonstrated by GRN and their preparedness for clinical practice. Areas of difficulty included clinical skills, communication and critical thinking (Duchscher, 2009; Evans et al., 2008; Hartigan et al., 2010; Missen et al., 2016; Theisen & Sandau, 2013).

Whilst there is a plethora of literature discussing the levels of competence of graduate nurses and the need to improve key areas of competence, no studies could be identified that have explored the levels of competence or related knowledge, skills and attitudes required by either GRNs or experienced RNs in managing the deteriorating patient. The aim of this current study is to redress this gap.

Currently within Australia, the only recommended competence for registered nurses dealing with acutely ill hospital patients is that of basic life support and resuscitation (ACSQHC, 2011). Nationally, there is a clear mandate for improving all healthcare practitioner's clinical competence in the recognition and response to clinical deterioration. This focus requires a clarification of the expected role of all staff involved in the response to and management of the deteriorating patient. It is particularly important for GRN to have a clearly defined role and expectation in their time of transition. A clear set of acute care competency standards that explicitly define the specific knowledge, skills, attitudes, abilities and behaviours required to manage

the deteriorating patient ,would provide clarity and clearly articulate the scope of practice of the GRN. This study will identify relevant acute care competencies and an understanding of the GRN's role in recognizing and responding to the deteriorating ward patient.

Conclusion

It is clear that GRNs are expected to care for deteriorating ward patients. Considerable attention has been directed towards the problem of clinical deterioration in the hospital patient both nationally and internationally. Nationally there has been a renewed focus on the need for all healthcare providers to possess appropriate competency, knowledge, skills and attitudes to manage the deteriorating ward patient. Warning signs of clinical deterioration are evident in the patient's physiology many hours prior to adverse events. The recognition and management of clinical deterioration is often delayed leading to suboptimal care, increased risk of adverse events, unplanned ICU admission and increased mortality. Rapid response systems have been developed to track physiological decline and trigger a timely and appropriate response for the deteriorating patient.

Nurses have a major role in the detection and management of the deteriorating patient, although the literature lacks clarity as to the expected role of both the experienced registered nurse and the graduate registered nurse. Expectations of the registered nurse include the recognition of physiological decline, the summoning of help, and the provision of basic intervention. There is evidence that nurses sometimes fail to recognise clinical deterioration and are reluctant to call for help. Factors including competency, role ambiguity, self-efficacy, self-confidence, workload, resources and support influence the registered nurse's ability to detect and respond to clinical deterioration. There was a recognition that the transition from student, to qualified nurse was a difficult period with stress and uncertainty rife amongst graduate nurses.

A significant gap exists within the literature concerning the graduate registered nurse and the role undertaken in the management of clinical deterioration of the patient. It is the intention of this current study to redress this existing gap in the literature. As far as is known, this study will be the first mixed methods study to provide evidence of the specific role undertaken by graduate nurses in the management of patient deterioration. It will be the first study to identify and measure the acute care clinical competencies used and the level of working undertaken by graduate nurses when dealing with the deteriorating ward patient. The study will provide further insight into the factors that impact the graduate nurses' role in managing the deteriorating patient. It will explore strategies such as utilizing competency standards, to improve the capabilities of graduate nurses to undertake their clinical role.

In closing, this chapter identified the problem of patient deterioration, with many national and international studies recognising its significance in influencing the mortality and morbidity of patients in the ward environment. Whilst RRS has been implemented as a strategy to provide better patient care, it would seem that RNs often experience barriers in recognising and responding to the deteriorating patient. Of concern are the expectations of the GRN role and their competencies in managing patients deteriorating condition. It would seem that GRNs are particularly vulnerable to the negative attitudes of other healthcare professionals regarding their actions in these situations.

Chapter 3

Methodology

Introduction

The previous chapter provided a synthesis of the current literature relating to the problem of clinical deterioration and the role of the graduate registered nurse. This chapter provides a discussion of the mixed methods research (MMR) approach used in this study, together with the rationale for using an explanatory design. Since the philosophy of pragmatism underscores MMR, a brief synopsis will be provided to elucidate its relationship to the study aims. The chapter will outline the study design and its four sequential phases.

Overview of Mixed Methods Research

Research designs are processes and procedures used for the collection, analysis, interpretation and reporting of results from a research project, or study, providing a logical choice of methods used and the procedures followed, in the collection and interpretation of data (Creswell & Plano Clark, 2011). The nature of nursing requires the use of intellectual pluralism, the collection and use of objective and subjective data to provide clinically appropriate holistic care to the patient.

No single view of reality can explain the complex phenomena that occur within the clinical environment when providing patient care. As such a MMR design reflects the overarching pragmatic philosophy of nursing practice and its pluralistic nature. It places value on both objective and subjective data since both are necessary to part way explain complex phenomena that characterises nursing practice.

A mixed methods design was necessary to answer the complex research questions posed in this study. Using a mixed method design facilitates the capture of insights that may be missed when only one method of inquiry is used. It has been argued that mixed methods research provides a more complete level of knowledge to inform theory and practice by increasing the comprehensiveness and scope of the findings (Creswell & Plano Clark, 2011).

Given the complexities of the aim of the study, a practical and applied research philosophy informed the methodological choice of MMR and the development of the research questions (Teddlie & Tashakkori, 2003). Proponent of MMR suggest that a broader focus on the phenomenon can be provided since it uses information obtained from a number of different perspectives to answer the research questions (Giddings & Grant, 2006). Importantly, MMR design acknowledges the importance of context (Greene, 2008). The background and context to this study was portrayed in chapter one.

Whilst there is debate about using both quantitative and qualitative methods in a single study, it is argued that researchers should not be forced into a choice of using either post-positivism or constructivism (Tashakkori & Teddlie, 2003). Mixing methods from different paradigms should not be viewed as polarised, but rather different ends of the continuum (Newman & Benz, 1998). Whilst issues of compatibility of qualitative and quantitative methodologies have been widely discussed there is growing acceptance of the value of mixed methods in addressing complex health problems (Bryman, 2007; Guba & Lincoln, 1988; Morgan, 2007; Twinn, 2003; Yancher & Williams, 2006). The problem of the deteriorating patient is one such problem.

It was felt that a MMR design complemented the pluralistic nature of nursing, promoting the collection, synthesis and abduction of data; contributing to a more complete and comprehensive account and understanding of the deteriorating ward patient (Doyle, Brady & Byrne, 2009). Moreover, this design supported the overall aims of this study ensuring a complete multidimensional explanation and illustration of the topic (Bryman 2006). Importantly, the use of a MMR design enabled a

comprehensive collection and synthesis of both quantitative and qualitative data to represent the GRN's perceptions of the management of the deteriorating ward patient. Rigorous empirical evidence will provide the platform to inform decisions and actions within the clinical context. The evidence will ensure that future clinical actions are appropriate, cost effective and result in a positive outcome for patients (Polit & Beck, 2012).

The partially mixed methods explanatory design.

It is argued that mixed methods research falls on a continuum from not mixed to fully mixed methods, with partially mixed designs occupying the region in between (Leech & Onwuegbuzie, 2007). Fully mixed methods designs represent the highest degree of mixing of research methods and research paradigm characteristics. This level of mixing involves both qualitative and quantitative research characteristics across the four components of research; objectives (including exploration and prediction); data collection; data analysis and inference (Leech & Onwuegbuzie, 2007).

A partially mixed method, explanatory sequential design was used in this study, commencing with a quantitative phase, followed by a qualitative phase. It was envisaged that the qualitative phase could provide further explanation of the quantitative findings, allowing for a more in depth exploration and explanation of the phenomenon under study (Creswell & Plano Clark, 2011). It is understood, however, that MMR explanatory design does not predict outcomes (Leech & Onwuegbuzie, 2007). Rather, it is viewed as useful in assessing trends and relationships within quantitative data, and explaining the reasons behind the trends with qualitative findings (Creswell & Plano Clark, 2011).

A partial mixing of methods was vital in facilitating a clear comprehension of the current practice of the GRN in managing the deteriorating ward patient. The explanatory design was chosen to help identify trends within the GRNs role when dealing with the deteriorating patient, identifying important key clinical competencies and level of working undertaken to provide a mechanism to explain these trends. The design offered a unique means of collecting data from the participants that was

pluralistic and context focused. It facilitated the collection of data concerning the GRNs preparation, technical role, decision-making and levels of working, whilst focusing upon the context of a new GRNs role. The combination of data types helped to identify the multiple factors that influenced their capabilities to recognise and manage the deteriorating ward patient. An explanatory sequential design provided a depth of understanding that would have been difficult to achieve using quantitative or qualitative methods in isolation (Shaw, Connelly & Zecevic, 2010).

The philosophy of pragmatism.

Mixed methods approach to research is underpinned by the philosophy of pragmatism (Creswell, 2009; Morgan, 2007; Tashakkori & Teddlie, 2003). It is a doctrine of meaning: a theory of truth arguing that acceptance of truth and knowledge are dynamic and evolving: there is no final truth (Denzin, 2012; Johnson & Onwuegbuzie, 2004). Instead, truth is seen as incremental in that a person accepting the truth of today may be proven false tomorrow (Doyle et al, 2009). The findings of research are tentative, leading to further action and practical outcomes (Johnson & Onwuegbuzie, 2004). Pragmatism suggests that knowledge comes from action and the reflection on the consequences of that action. It advocates an eclectic approach to research, where the researcher is free to determine the methods that best suit answering the research questions (Doyle et al, 2009). Thus, the use of a MMR approach in this study satisfies these criteria.

The Deweyan form of pragmatism argues that people interact with their environment by taking action, which is termed ‘transaction’. The actions create a change in the environment, creating consequences. The distinctive characteristic of the transaction is that it constitutes a two-way relationship, where actions affect consequences, and consequences affect actions (Dewey, 1987). Pragmatism argues that knowledge and ‘knowing’ can only come from the transaction. Experience in and of itself is, contextually and temporally driven, allowing multiple standpoints, backgrounds, histories, and intentions, contributing to unique transactions. Pragmatists believe that an objective physical reality can be tapped into through context driven transactions. Importance is placed on subjective realities, formed within the

individual's mind and inter-subjective worlds, created through communication, interaction and sharing (Onwuegbuzie, et al., 2009).

Grasping the relationships between actions and consequences, enables the person control over their environment, so they can plan intelligently in directing further actions. It is the action and reflection on the consequences of the action that leads to 'knowing'. Learning occurs through the process of guided experimental transaction (Biesta, 2010). Thinking can allow for a rehearsal of competing possible lines of action; leading to coordinated transaction that is clear when a person acts (Beista, 2010). Thinking, however, can never guarantee actions will result in coordinated transaction, it can only help to make the process of choosing more intelligent. Action is needed along with careful examination of the consequences, to establish what is possible (Biesta, 2010). From this perspective experience involves a process of interpretation.

The philosophy of pragmatism is concerned with concepts such as 'lines of action, warranted assertions and workability' (Morgan, 2007, p. 66). It is concerned with answering research questions that affect the real world and fits well with research used to enlighten clinical practice (Plack, 2005). It concentrates on the practical nature of reality, discovering an ever-evolving truth in finding the solution to problems (Shaw et al., 2010). Thus, the aim of this study is to identify the role and competencies of the GRN when managing the deteriorating patient.

Pragmatism permits a more comprehensive approach to social research within the clinical context of nursing by advocating the use of multiple methods of inquiry. Using this approach, complexities can be explored providing relevant and meaningful practice-based evidence to inform nursing practice (Shaw et al., 2010). Pragmatism accepts that there are single and multiple realities that are open to empirical inquiry and that phenomena have a variety of layers, both objective and subjective, or a combination of the two (Creswell & Plano Clark, 2007). Thus it can be seen how pragmatism underscores the use of a MMR approach and an explanatory design.

Pragmatism is based upon the argument that meaning of an event cannot be given in advance of experience. Emphasis is placed on the consequences and meaning of actions. According to Dewey (1987), pragmatism is concerned with human experience and experience is built around key aspects of beliefs and actions. The origins of a person's beliefs arise from prior actions and the outcomes of those actions. These interpretations are context driven and related to feelings. The whole process leads to experience and knowledge generation (Dewey 1987).

A Deweyan philosophy of pragmatism asserts that knowledge is generated from actions as outcomes of inquiry and this serves as a basis for beliefs. There is an emphasis on the continual interaction between beliefs and actions and that these interactions are context driven. As such it was important to inform the reader of the background to the study, including the researcher's location within the study since the researcher's experiences could influence the pragmatic decisions made and the research process. Pragmatism advocates an eclectic approach to research where the researcher is free to determine the methods that best suit answering the research questions (Doyle et al, 2009).

Pragmatism focuses upon the consequences of research and the importance of the question asked, rather than the method used. It is directed towards what works in the practice setting (Creswell & Plano Clark, 2011). Hence, in this study the MMR design aimed to provide a more in-depth view of the GRNs' role and competencies in the management of the deteriorating ward patient.

Research design

This study used a MMR explanatory design that required the collection and analysis of quantitative data and qualitative data. Four distinct phases in the study reflected the sequential nature of the design (see Figure 3 below).

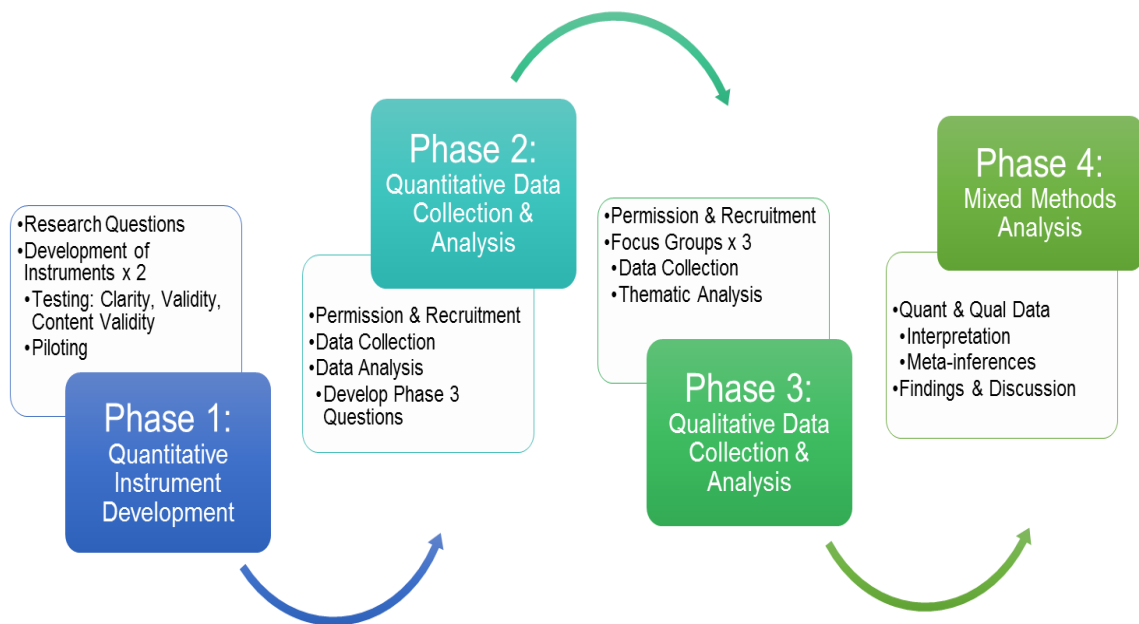


Figure 3. Phases of the study and sequential mixed method design.

Phase 1.

Phase 1 of the study focused on the development and testing of two online quantitative questionnaires. The first questionnaire concerned the role of the GRN (Q-Role) and was designed to gather data from the GRNs concerning their current clinical role in the management of the deteriorating ward patient. The Q-Role also focused upon data relating to: the problem of clinical deterioration; knowledge levels of the GRNs; confidence levels of the GRNs; clinical support; and preparation of the GRNs to undertake their current role in managing the deteriorating patient.

The second questionnaire concerned the competencies (Q-Comp) required to undertake the role of managing the deteriorating patient. It was designed to identify the acute care clinical competencies used by the GRNs when managing the deteriorating ward patient. The Q-Comp also measured the level and complexity of work undertaken by GRNs in their current role. The development of the questionnaires

was complex, involving a number of processes to ensure clarity, validity and reliability. This process led to the questionnaires being subdivided into four parts, to improve engagement and reduce survey fatigue of the participants.

Phase 2.

Phase 2 of the study involved the quantitative data collection and analysis for the study. Phase 2 initially focused on gaining permission to undertake the data collection, followed by the recruitment of GRN participants for the study. Following the recruitment process, the four parts of the Q-Role and Q-Comp questionnaires were distributed to the GRN participants in a sequential manner, via an online survey hosting website. The questionnaires were completed and the data was collated for statistical analysis. A number of descriptive statistical analyses were undertaken using the SPSS™ Ver.24 (IBM SPSS, 2016) statistical analysis software package. The findings from the data analysis were then used to inform the development of the questions to be asked in the qualitative phase 3 of the study.

Phase 3.

Phase 3 of the study involved the qualitative data collection and analysis for the study using three focus group interviews with GRN participants. Again phase 2 initially required permission from both private hospital and public hospitals where the focus groups were to be undertaken. Once permission was granted, the GRN participants were recruited for the focus groups, and these were then undertaken over a period of several months. The questions used to guide the focus groups were developed following the analysis of the quantitative data. The focus group interviews were recorded and then transcribed. A process of thematic analysis was then undertaken to identify key themes from the qualitative data.

Phase 4.

Phase 4 formed the final phase of the study. This phase involved an in depth synthesis of both quantitative and qualitative findings and meta-inferences from the

data. It provided key findings of the study that answered the research questions and facilitated the provision of recommendations from the study.

Ethical considerations

The study was conducted cognisant of the National Statement on Ethical Conduct in Human Research (NHMRC, 2015). The main purpose of this National Statement was to promote ethical human research ensuring participants are accorded respect and protection (NHMRC, 2015). In meeting the NHMRC standards, this study underwent a number of ethical approval processes, ensuring that issues of consent, protection of confidentiality, risk of harm were addressed.

Ethical Approval Processes

Initially, the research study proposal was assessed and accepted by the University of Notre Dame Australia, (UNDA) Human Research Ethics Committee (HREC). It was deemed a Low Risk Project Involving Human Participants, as the study did not involve patients, clinical practice, provision of treatment, the use of medication or other substances. Furthermore, there was no potential risk or actual physical harm to participants within the study (see Appendix 1). As the study involved undertaking focus group interviews with GRN within both private and public hospitals, ethical approval was also sought and provided by their ethics committees (see Appendix 1).

Confidentiality & Data Security

Confidentiality and data security during the study was provided in a number of ways. All electronic data collected during the quantitative phase was anonymous, names of participants were not collected at any time during the data collection phase. All demographic data was generic, chosen from broad demographic categories such as area of speciality or age groups, to reduce the risk of participants' identification. Additionally, the researcher and supervisor of the study were the only personnel provided with access to quantitative data, which was stored in a secure location, on a password protected computer complying with data protection laws.

The focus group interviews were recorded on electronic devices and transcribed. The transcribed data was coded and anonymised to ensure participants and workplaces could not be identified. Following the transcribing of data, the recordings were erased. All transcribed data and consent forms were stored in a secure location, the electronic data was also kept on a password protected computer complying with data protection laws.

All printed data from the phases of the study will be kept in a secure location at the university for a period of five years. Following this period, the printed data will be destroyed in a safe and confidential manner in accordance with the university protocols.

Summary

This chapter has provided an overview and rationale for the use of a MMR explanatory design of the study. It discussed the philosophy of pragmatism, which underpins the MMR approach and was deemed to fit the research questions. The chapter also has provided a brief overview of the four phases involved in this study portraying the sequential nature of the design. Finally, the chapter has provided a discussion of the processes undertaken to assure ethical approval and confidentiality.

Chapter 4

Phase 1: Development of the questionnaires

Introduction

The previous chapter portrayed the design of this study, provided a discussion of the MMR approach used and the rationale for using an explanatory MMR design. Within this chapter the development of the phase 1 questionnaires (Q-Role and the Q-Comp) will be discussed. Initially, the processes used for the development of the Q-Role will be provided, including an overview of the expert panel review, and the test for validity and reliability. Following this section, a discussion of the processes used for the development of the Q-Comp will be provided including an overview of the pilot test.

Overview of the questionnaires

At the time of developing the questionnaires, it was envisaged that the data would be collected from participants enrolled on the GradConnect program and working within the Perth metropolitan public and private hospitals. The aim was to administer the questionnaires in an online format to the target population. The online format was aimed at providing flexibility and ease of access for participants and to facilitate completion. The questionnaires were developed to answer four research questions:

- What is the role of the graduate registered nurse in relation to the identification, assessment and management of the acutely deteriorating ward patient?
- What factors impact the role of the graduate registered nurse in the management of the acutely deteriorating ward patient?
- Which acute care competencies are important to the graduate registered nurse practice in the management of the deteriorating ward patient?

- At what level are graduate registered nurses working in relation to the key acute care competencies within the clinical setting?

To answer the research questions, key conceptual areas were explored, generating a large number of questions. This necessitated the development of two questionnaires. The first centred on the participant's current clinical role in relation to the deteriorating ward patient, and the second questionnaire focused on identifying the acute care competencies that were important in the role. Additionally, the second questionnaire ascertained the level of working and complexity of the role undertaken by the participants within their current clinical practice.

Questionnaire 1: The role of the graduate registered nurse

The first questionnaire concerned the GRN role (Q-Role) in managing the deteriorating ward patient and was developed following an extensive literature review. It was designed to capture an understanding of the GRNs current role, level of knowledge, confidence and educational preparation in to detecting, assessing and managing the deteriorating ward patient. The Q-Role provided data to help answer the research questions.

Following the literature review, a version of thematic analysis was used to identify a number of themes related to the GRN role and competencies in managing the deteriorating ward patient. In total eight core themes were identified for inclusion within the Q-Role:

- Definition, Detection & Frequency of Clinical Deterioration
- Undergraduate & Postgraduate Preparation
- Role in Deterioration
- Knowledge Levels
- Confidence
- Competence

- Clinical Management of Deterioration
- Clinical Support of Graduates

The Q-Role aimed to collect nominal demographic data, followed by ordinal data. The demographic data was related to the participants: age; gender; current areas of speciality; private or public hospital employment; and university of undergraduate nursing education. This data provided scope for additional data analysis and understanding of variances within the sample.

A five point Likert scale was used to collect the ordinal data. It was aimed at measuring the level of agreement with 75 closed ended statements, centred on the eight core themes developed from the literature review. The Likert scale choices included “Strongly Agree”, “Agree”, “Undecided”, “Disagree” and “Strongly Disagree”. Once the Q-Role questionnaire was designed, the process of determining clarity, internal consistency, content validity and reliability continued.

Q-Role development.

Expert panel review.

An expert panel was invited to assure validity and reliability of the Q-Role (Imle & Atwood, 1988). The final decision of who should constitute a panel of experts took into account both the capacities of experts to provide useful advice and issues of feasibility (Toye et al., 2003). The expert panel members needed to constitute people with expertise in acute care environments, an understanding of the GRNs’ working environments, and an understanding of research design.

Six experienced senior RNs from both the acute hospital setting and nursing academia were recruited to review the questionnaire. The expert panel included several senior RNs working alongside GRNs within the acute hospital setting. Their expertise and insight with regards to the context and the clinical work undertaken by GRNs within the hospital setting, was extremely valuable in designing the questionnaire. The expert panel also included nursing academics with clinical

expertise in the management of the deteriorating patient and experience in research design.

The experts were each provided with an information pack (see Appendix 2). The pack contained an explanation of the study, including the objectives. It also outlined the expectations of the role and the processes involved in the questionnaire review. A consent form, eliciting agreement to participate as an expert panel member, was also provided. This form also acted as a confidentiality agreement between the expert panel member and the researcher. The pooling of expertise provided a group of panel experts with capacity to provide valuable feedback from a multitude of different perspectives in the process of the questionnaire development.

The expert panel were asked to evaluate the 75 Q-Role statements in relation to clarity, apparent internal consistency and overall content validity (Lynn, 1986). The panel review helped to preserve the context of the data, retain the accuracy of meaning and promote the content validity of the questionnaire (Imle & Atwood, 1988). The competency of the expert was crucial, as they are defined as a person who represents the content of interest (Halek, Holle & Bartholomeyczik, 2017). The proportion and the stability of agreement was determined from the responses provided by the expert panel

The review process was divided into the three separate elements: clarity; apparent internal consistency; and content validity. The expert panel were provided with a comprehensive set of instructions for each element and equipped with review containing rating scales and space to make comments. Each element was given a two-week period for review and return of feedback for the draft questionnaire. Following the return of the feedback, the data was analysed, the level of agreement ascertained, and the necessary adjustment made in light of the panel review. The review process took 2 months to complete. The processes of determining clarity, apparent internal consistency and content validity will now be outlined.

Clarity.

Checking for clarity of content refers to reviewing the scale items to see that they are clear and understandable (Halek et al., 2017). The assessment process included: were items clear in their intent; do they make sense; and can people understand them fully (Toye, Kristjanson, & Mastaglia, 2003). The draft Q-Role asked reviewers to read each closed ended statement and comment on the clarity of: the language used; the ease of reading; and grammar (see Appendix 3). The questions sets were randomised for each panel member to reduce chance agreement (Imle & Atwood, 1988).

Analysis of the expert panel feedback involved recording the scores and comments given by each reviewer on a Microsoft Excel (2010) spreadsheet. This facilitated all scores and comments being compared across all panel members for probability of agreement to each individual statement. This agreement was calculated along with the overall probability of agreement between expert panel members. The agreement of 5 out of 6 experts was seen to be an adequate level of agreement which accounted for a 0.83 level of significance (Halek et al., 2017; Lynn, 1989).

In total, the six reviewers provided 450 individual ratings of clarity for the 75 closed statements. In situations where more than two raters are utilised, one method recommended as appropriate for calculating inter-rater agreement, is the mean level of agreement across all pairs of reviewers (Oliveira Lopes, Silva, Araujo, & Silva Filho, 2015). This method was used to calculate the inter-rater agreement using the Microsoft Excel (2010) spreadsheet. Each reviewer's 75 ratings were paired with each of the other five reviewers, to identify probability of agreement levels for each pairing (see Table 2).

Table 2

Clarity: Expert Reviewers Probability of Agreement Levels

	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6
Rater 1						
Rater 2	0.946					
Rater 3	0.946	0.92				
Rater 4	0.973	0.973	0.946			
Rater 5	0.96	0.933	0.906	0.96		
Rater 6	0.973	0.973	0.986	1	0.96	

This process of accounting for probability of agreement provided 15 paired agreement levels. The mean of the paired rating was calculated by summing the paired levels of agreement and dividing this by the number of ratings. The overall probability of agreement on clarity for the Q-Role was 0.954. The accepted level to identify agreement amongst raters is 0.78 (Halek et al., 2017; Lynn, 1989). The calculated scores generated from this process demonstrated a very high level of inter-rater agreement and confirmed that the Q-Role tool met a high standard of clarity (Halek et al., 2017).

To confirm item level inter-rater agreement, the probability of agreement for each individual statement was calculated. Again this confirmed a high degree of clarity per item. None of the statement items scored less than 0.78 for levels of agreement between the raters. Of the individual statements, 92.5% (n=65) scored 1.0 or perfect agreement and 7.5% (n=10) had a level of agreement of 0.83. The score of 0.83 was still seen to be an acceptable level for item agreement and confirmed a high level of clarity for the Q-Role (Imle & Atwood, 1988; Halek et al., 2017).

Apparent internal consistency.

The next stage of developing the draft Q-Role, involved the review of apparent internal consistency. Apparent internal consistency referred to whether the items were grouped, or appropriately linked together as a particular subset of the conceptual domain (Toye et al., 2003). This process involved the development of a second Likert scale to test apparent internal consistency. The expert panel were once again provided with information packs containing instructions, a timeframe for the review, and a form with the 75 closed ended statements grouped into six related conceptual sets (see Appendix 4).

The panel members were asked to review the closed ended statements within each set, and to rate their agreement as to whether the statement belonged together as a generally related set. Further they were asked to identify if each individual statement, within the general set, belonged within that set. Space was provided for any comments.

The results were transferred to a Microsoft Excel (2010) database for comparison. Again the probability of agreement between expert reviewers was ascertained by calculating the mean agreement across all pairs of reviewers for each set (see Figure 4).

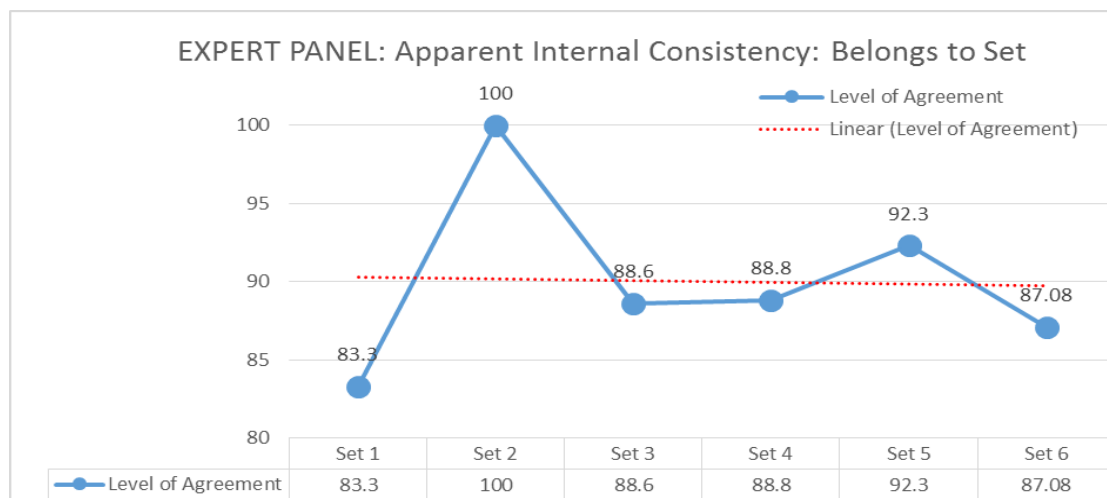


Figure 4. Expert panel apparent internal consistency: probability of agreement

The high mean inter-rater agreements confirmed that the Q-Role items were appropriately grouped together in subsets of the conceptual domains (Toye et al., 2003). The overall mean probability of agreement from the paired raters for all six sets was 0.90. The probability of agreement scores, were also calculated for the individual items. None of the individual statements scored less than 0.78 probability of agreement. Given this level of agreement no statements were altered or removed from original allocated sets. From the 75 individual statement probability of agreements, 65.33% (n=49) had perfect agreement of all six raters, confirming their internal consistency. A total of 34.67% (n=26) had an overall probability of agreement of 0.83, which was seen as acceptable for a level of agreement to confirm apparent internal consistency of the Q-role (Halek et al., 2017; Lynn, 1989).

Content validity.

The final process of determining the validity of the draft Q-role, was to assess its content validity. This form of assessment involves an evaluation of the extent to which items within a scale relates to the domain of interest (Nunnally & Bernstein, 1994). To measure the level of content validity, a third review tool was developed for the expert panel reviewers to utilise. The tool used a rating to ascertain level of agreement concerning the relevance of the item statements using an ordinal rating scale (Lynn, 1986; Wynd, Schmidt & Schaefer; 2003). This level of agreement provided data to calculate the content validity index for both individual items within the tool (I-CVI) and the tool overall (S-CVI) (Polit, Beck & Owen, 2007).

The expert panel were given evaluation packs containing instructions with regards to the assessment of content validity and a timeframe for the review. The draft Q-role contained the 75 closed ended statements grouped into the same six related conceptual sets confirmed by the apparent internal consistency review (see Appendix 5). A label was then developed for each set, along with a comprehensive descriptor for the set. This process provided the expert panel members with concept labels and definitions allowing them to make an assessment of the content validity of the items individually and within a set (Monterossa, Kristjanson & Dadd, 2006).

The same expert panel were then asked to rate two different constructs for each set using the Likert scale rating. Firstly the expert reviewers were asked to decide if the label and descriptor matched each of the item statement within the set. Secondly the expert reviewer was asked to confirm if each item statement was unique within the set. The content validity index was calculated from the reviewer responses on the Likert scale. If the expert indicated the labels and descriptors matched the set and each statement was viewed as unique within the set, then this would indicate agreement that the content of the draft Q-Role was valid. The form gave the expert reviewer space to provide comments, if any content was missing from the sets.

The results from the expert panel members were once again transferred to a Microsoft Excel (2010) database spreadsheet for comparison. A content validity index for individual item statements (I-CVI), and the Q-Role overall (S-CVI) was calculated using the percentage level of agreement between experts (Lynn, 1986). The I-CVI was identified by ascertaining the mean probability of agreement for each item (Polit, Beck & Owens, 2007). The higher the level of agreement between the reviewers, the higher the generated I-CVI score. An acceptable I-CVI for each item from six expert rates was 0.83, equating to five out of six raters agreeing the content item was valid (Halek et al., 2017; Lynn, 1989; Polit, Beck & Owen, 2007). The average percentage agreement of all items across the expert panel was then calculated to ascertain the overall content validity index or the S-CVI for the Q-Role (Halek et al., 2017; Lynn, 1989; Polit, Beck & Owen, 2007).

Two constructs were rated for the 75 statement items, generating 150 items to rate per expert reviewer. A total of 900 statement ratings were received from the six expert reviewers. Of the 150 rated items, 92% (n=138 items) had perfect agreement of validity or an I-CVI of 1.0 from all six expert reviewers. This indicated that the label and descriptor matched each of the statements within the set and each statement was unique within the set, confirming content validity. The remaining 8% of rated items (n=12 items) received an I-CVI of 0.83, which met the standards set by other researchers to confirm content validity (Halek et al., 2017; Lynn, 1989; Polit, Beck & Owen, 2007).

To calculate the overall content validity index or S-CVI for the Q-Role, the mean agreement across all of the reviewers for the two different constructs in each set were calculated (see figure 5 below).

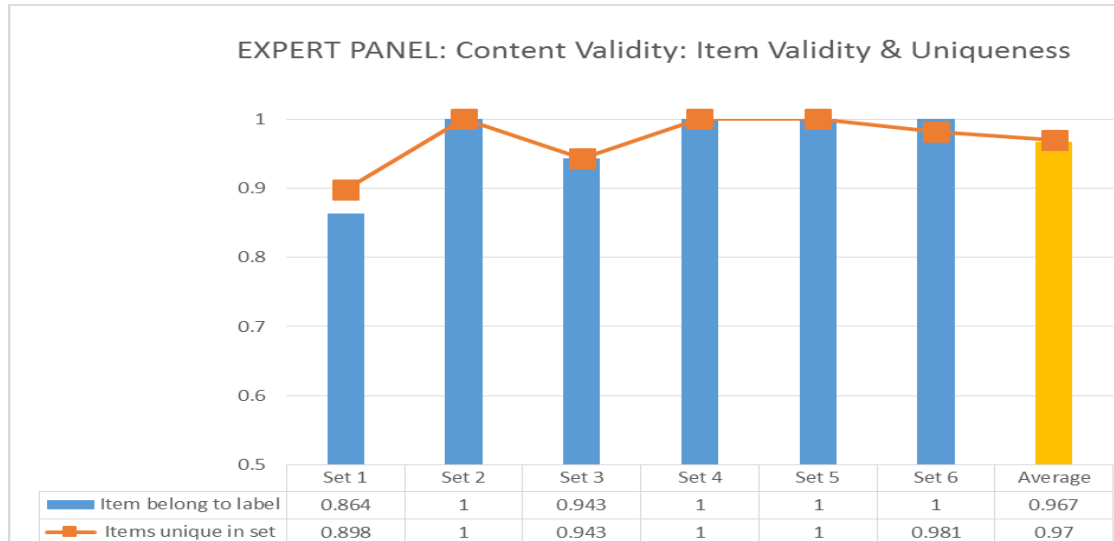


Figure 5. Overall content validity index (S-CVI) for the Q-Role.

The mean of the inter-rater agreements was high for all sets across both of the rated constructs. The overall item S-CVI for the Q-Role was calculated by averaging the mean percentages of inter-rater agreement from the six sets for both constructs. For the construct of “items belonging to the label”, the mean CVI was 0.967, and for the construct “item uniqueness within the set”, the mean CVI was 0.970, both score indicating excellent agreement of content validity. The S-CVI was calculated as 0.969, which demonstrated an excellent level of agreement and confirming content validity of the draft Q-Role as a whole (Halek et al., 2017; Lynn, 1989; Polit, Beck & Owen, 2007).

Q-Role: Reliability.

Following the confirmation of clarity, apparent internal consistency and content validity, the questionnaire was next tested for reliability. The measure of reliability reflects the stability, consistency and dependability of a questionnaire (Polit

& Beck 2012 p. 331). It relates to the degree to which a measure provides a reproducible or consistent value when undertaken at different points in time or in a variety of situations (Saw & Ng, 2001). A test-retest design was used to measure intrarater agreement over time. This form of testing was reputed to be the most common measure of reliability. It involved administering the draft questionnaire at two different points in time to the same individual and correlating the degree of variation that occurred in the individuals responses to the questions (Saw & Ng, 2001).

A convenience sample of RNs working within a Critical Care Unit at a metropolitan hospital, were recruited to participate in the tests. Prior to their recruitment, permission to undertake the tests was sought from the hospital executive team, the hospital ethics committee and the Critical Care Unit manager, prior to contacting the RNs for their consent (see Appendix 1). An information pack was provided to the appropriate people. Once agreement was reached, an invitation email containing information about the study, the tests, confidentiality and consent was sent to 15 RNs. The email contained an embedded hyperlink to the online draft Q-Role (see Appendix 6). Consent was assumed when the hyperlink was accessed. A secondary check of consent was attained before proceeding on to complete the tests.

The initial test (T1) collected demographic information so it could be matched with the second test (T2). Completion of the online T1 involved the RNs' rating their level of agreement to 75 closed-ended statements using the five point Likert scale (Strongly Agree, Agree, Undecided, Disagree & Strongly Disagree).

The use of an online format for the tests reflected the planned method of delivery to the participants involved in the main data collection procedure. The online format facilitated easy cloud-based access via any Internet connected device and allowed the RNs to conveniently complete and submit the draft questionnaire at a time and place of their choosing. The RNs were given two weeks to access the online link and complete the T1. The response rate for the T1 was 53% (n=8). Following this period of time, a second email with an embedded hyperlink was sent to the same RNs to complete T2. The RNs were again given a period of two weeks to complete the online test. The response rate for the T1 and T2 completion was 33% (n=5) from the

original sample of 15 registered nurses. The low completion rate may have been due to the RNs busy workload and a lack of time to complete the questionnaire.

Initially, the results from each RN were exported from the online web-based server and converted into a Microsoft Excel (2010) spreadsheet. This allowed for the string data from the Likert scale responses to be recoded into numerical data. Each of the T1 and T2 responses were converted into columns of scores with each item on the Likert scale response given an individual score between 1 and 5 depending on the level of agreement. This produced a column of 75 individual statement scores for T1 and 75 individual statement scores for T2 from each participant.

The participants' scores were then exported to SPSS™ Ver.24 (IBM SPSS, 2016) program that allowed for more comprehensive statistical analysis to be undertaken. Five participants completed both T1 and T2 questionnaires and this generated five sets of data, one pair of 75 statement scores for each. Each data pair included 150 separate responses from T1 and T2. This process culminated in a total of 750 responses from the five participants being included in the analysis of data.

Intra-rater reliability refers to the ability of a rater to reproduce quantitative outcomes under the same conditions (Gwet, 2016). To ascertain intra-rater reliability of the draft Q-Role, the scores were analysed using the Cohen's kappa statistic. Cohen's kappa was recognised as the most popular and appropriate method of assessing the reliability of categorical data within questionnaires (Sun, 2011). Cohen's kappa calculates a correlation coefficient for the intra-rater agreement and, therefore, the reliability of the questionnaire. The Cohen's kappa measures the level of agreement above and beyond the amount of agreement which would be expected by chance alone (McHugh, 2012). The kappa score can range from -1 to +1, where a score of 0 represents the amount of agreement that can be expected from random chance and 1 represents perfect agreement between the raters' responses (McHugh, 2012). The closer each respondent's scores are on T1 and T2, the higher the resultant kappa score will be and high kappa score is seen to reflect a more reliable test measure (Sun, 2011). From the test-retest data, the Cohen's kappa for intra-rater agreement for the Q- Role participants was calculated (see figure 6).

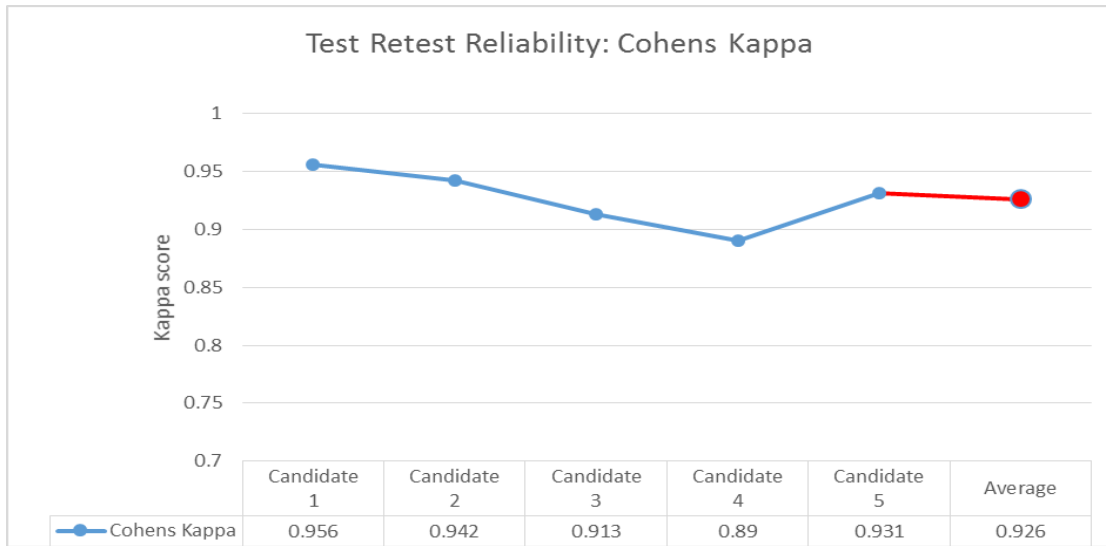


Figure 6. Cohen’s kappa intra-rater agreement for the Q- Role.

Five kappa scores were generated, one for each participants’ paired responses (T1 v T2). The kappa scores were high for all respondents (kappa > 0.88 in all cases). The highest kappa score was 0.956 and lowest was 0.890, the mean kappa for the questionnaire test-retest was 0.926. The high level of kappa coefficient demonstrated that the Q-Role was reliable over time.

Questionnaire 2: Competencies (Q-Comp)

The second questionnaire, Q-Comp (see Appendix 9), related to the competencies utilised by GRNs when managing the deteriorating ward patient. The Q-Comp was developed to identify which acute care competencies were important and currently utilised. It was also designed to measure the level at which the GRNs were working in order to identify the complexity of their role.

The Q-Comp was developed from the UKDH document entitled “Acutely Ill Competency Framework” (Department of Health, 2009). This document prescribed a list of 79 acute care competencies for healthcare staff to manage the deteriorating ward patient. The competencies were split into five key domains, and each domain contained a number of competency groups (see Table 3 below).

Table 3

Five Competency Domain (Department of Health, 2009)

Domain	Focus of Competency Domain
1	Airway, Breathing, Ventilation and Oxygenation (15 competency groups in total)
2	Circulation (27 competency groups in total)
3	Acute Neurological Care (14 competency groups in total)
4	Transport & Mobility (3 competency groups in total)
5	Patient Centred Care: Team Working and Communications (20 competency groups in total)

The first domain contained 15 competency groups related to airway, breathing, ventilation and oxygenation of the patient. The second domain contained 27

competency groups related circulation and perfusion. The third domain contained 14 competency groups related to acute neurological care of the patient. The fourth domain contained three competency groups related to transport and mobility issues. Finally, the fifth domain contained 20 competency groups related to patient centred care, team working and communications (see Appendix 9).

A competency group was comprised of two sets of information. Firstly a specific competency was provided such as “Arterial blood gas sampling”. Alongside the competency, a description of the roles ascribed to each level of the “chain of response” (COR) was provided. This identified the expected tasks to be completed by those individuals undertaking the specified role such as “Collect equipment and transport sample” (see Figure 7 below).

Competency Group	Non-Clinical Staff	"Recorder"	"Recogniser"	"Primary Responder"	"Secondary Responder"
<i>Arterial blood gas sampling</i>	Transports sample according to local protocol.	Collects equipment and transports sample.	Assists operator in performing task.	Undertakes arterial blood gas sampling and measurement. Has knowledge of and can interpret arterial blood gas measurement.	Recognises need for assistance from Critical Care.
<i>High flow and controlled oxygen therapy</i>	Identifies and collects medical gases if designated.	Identifies and uses masks /nasal cannulae/venturi adapters at appropriate oxygen flow rates. Records oxygen concentration/flow.	Follows oxygen prescription. Understands the context when controlled oxygen is required and applies high flow oxygen effectively in emergencies.	Prescribes oxygen and evaluates effectiveness.	Has detailed knowledge of the use of controlled and high flow oxygen therapy. Evaluates effectiveness of oxygen therapy and revises treatment accordingly.

Figure 7. Example of competency groups with COR descriptors (Department of Health, 2009).

Within the COR, particular sets of skills, knowledge and attitudes were prescribed to meet a certain level of working or role. There were six pre-determined levels or roles within the COR, moving sequentially downwards from “non-clinical supporter” through to “tertiary responder” (see Chapter 2, pg 29). The level of complexity in each role increased the further along the COR staff were working.

The only COR role with a specified level of expertise was the “tertiary responder” role. The healthcare practitioner undertaking this role would need to have advanced knowledge and skills related to the critically ill patient. This level included competence to undertake advanced airway management, advanced resuscitation, clinical examination and interpretation of results for the critically ill patient. As the “tertiary responder” role was viewed as an advanced practice role, this was not included in the Q-Comp, as none of the GRNs would meet the criteria of advanced practitioner in critical care.

A major aim of the study was to determine the validity of the 79 acute care competency groups prescribed by the UKDH in the “Acutely Ill Competency Framework” (Department of Health, 2009). This could only be achieved if the Q-Comp accurately reflected the UKDH framework competency groups. It was, therefore, important to use the exact wording from the UKDH framework competency groups and the “chain of response” levels (Department of Health, 2009) in the Q-Comp. For this reason, no alterations were made to the groupings or wording of the competency groups within the Q-Comp.

As no alterations to the UKDH competency group wording or grouping were intended, it was decided that an expert panel for clarity, apparent internal consistency and content validity was unnecessary. This decision was predicated on any alterations to the wording and format of the competency groups may have changed the context or meaning of the competency. This would then have potentially compromised the determination of validity for the acute care competencies in relation to the GRN group.

To measure the importance of each competency group and the GRNs level of practice, an online Q-Comp was developed that contained all 79 UKDH acute care competency groups in their respective domains. The Q-Comp was designed to allow each competency group within the domain to be rated for importance using a 4 point Likert scale: (Very Important, Important, of Little Importance, Not important). A 4 point Likert scale was used to avoid neutral answers. It was important for the

participants to provide a directional response as to the importance of the competency and its use in their current clinical practice.

Following the participants rating of the importance of the competency group to their clinical role, an algorithm was utilised to decide the next question for the participant to answer. If they had selected either “Very Important” or “Important” on the Likert scale, the algorithm would open a secondary page designed to measure their current level of practice using the COR level descriptors for the competency. The participants then selected the relevant COR competency descriptors that reflected their current clinical role, and level of practice complexity.

Alternatively, if the participant had selected either “Of Little Important” or “Not Important” when rating the importance of the competency group, the algorithm would then bypass the secondary COR level question page, moving on to the next competency group for their rating of importance.

Pilot testing the competency questionnaire (Q-Comp)

To test the usability and ease of completion of the Q-Comp, the same small convenience sample of registered nurses working within a Critical Care Unit were asked to participate in a pilot of the Q-Comp (see Appendix 8). This followed on from the completion of the initial test retest concerning the Q-Role questionnaire. The intention was to gather feedback following completion of the Q-Comp on the online accessibility, ease of use, and time taken to complete the Q-Comp. Of the 15 RNs invited to participate in the pilot test, seven (46.6%) completed the Q-Comp and provided feedback.

Comments from the RNs concerning the ease of use and clarity were positive but they were concerned about the amount of time taken to complete the draft Q-Comp. This comment was not surprising since the Q-Comp was designed to measure five competency domains, containing the 79 competency groups with the competency descriptors to identify the COR role. Those RNs completing the Q-Comp could potentially take 160 separate ratings. Of the seven RNs who undertook the testing, two

did not fully complete it due to the length of time taken. On average it took 47 minutes to complete the testing of the draft Q-comp.

Following the feedback from the RNs, adjustments were made to reduce the time taken to complete the Q-Comp and to improve completion and submission rate. The solution was to divide the Q-Comp into three separate, online parts to be completed at different times to prevent fatigue. This phenomenon occurs when participants grow weary of the survey task resulting in a deterioration of quality of data provided (Lavrakas, 2008). Accordingly, the Q-Comp was rearranged into three parts representing the five domains (see Appendix 7):

- Q-Comp Part 1: Airway, Breathing, Ventilation and Oxygenation (16 competency groups in total)
- Q-Comp Part 2: Circulation (27 competency groups in total)
- Q-Comp Part 3: Acute Neurological Care, Transport & Mobility, Patient Centred Care: Team Working and Communications (37 competency groups in total)

Separate emails were sent to participants at two-week intervals with embedded hyperlinks for the three parts of the Q-Comp. In this way, the time taken to complete the the Q-Comp was dramatically reduced, improving compliance and submission rates by the GRN participants.

Summary

Within this chapter, the development of the phase 1 questionnaires (Q-Role and the Q-Comp) were discussed. The processes used for the development of the Q-Role including the confirmation of clarity, apparent internal consistency, content validity and reliability were provided. The chapter also provided a description of the processes used for the development of the Q-comp including the pilot testing of the questionnaire.

Chapter 5

Quantitative Data Collection and Analysis

Introduction

The previous chapter discussed phase one of the study design and the development of the Q-Role and Q-Comp questionnaires. This chapter focuses on phase two providing a description of the sample population, including permission and recruitment processes. It will discuss the data collection and data analysis used for the questionnaires including the statistical methods employed.

Phase 2 Data Collection

Population and sample.

The target population for the study were newly qualified graduate registered nurses (GRNs) working within an acute hospital setting in the Perth metropolitan area. This area comprises around 28 metropolitan hospitals, 14 are considered acute hospitals, ten of which have an Emergency Department. At the time of undertaking this study, there were approximately 1226 GRNs registered on the GradConnect program conducted by the Department of Health, Western Australia. This number of GRNs equated to around 75% of all newly qualified nurses who had completed their pre-registration nursing studies in Western Australia for the year of 2012 (Chief Nurse C. Stoddard personal communication, August 7th 2012).

Recruitment of graduate registered nurses.

Recruitment of the graduate registered nurses was multifaceted. Following approval to undertake the study by the University of Notre Dame (UNDA), Human Research Ethics Committee (HREC), contact was made with the Department of Health Western

Australia via an email to the Chief Nurse, the Research Projects Manager and the GRN Connect program coordinator. The email outlined the study and sought permission to contact the GRNs enrolled in the program for the Perth metropolitan area. Following discussions and clarification of the research objectives, permission was granted by the Chief Nurse of the Department of Health, Western Australia to contact the GRNs enrolled on the program. A list of 998 email addresses for the 2012 intake of the GRN Connect program was supplied. This number equated to 90.72%.

The next step in the recruitment process was to contact the 998 GRNs via email. The email contained a hyperlink to a “youtube” multimedia video clip which introduced the researcher and provided information regarding the study (see Appendix 8). By visualising the researcher and listening to an informal overview of the project and its aims, it was hoped graduates would be more immersed and inclined to participate in the research.

Sample inclusion criteria.

The criteria for the sample selection included: completion of an undergraduate nursing degree or equivalent; current registration with the Australian Health Practitioner Regulation Agency (AHPRA) as a Division 1 registered nurse in Australia; working currently within the Perth metropolitan area; employment in an acute hospital setting; and enrolled on the GradConnect program. Both public and private acute hospitals were included as both utilise the Department of Health GRN Connect program

Risks and benefits outlined to participants.

The risks and benefits of participating in the study were outlined to potential participants (see Appendix 8). A benefit was the opportunity to provide valuable information and insight into their role and competencies used in managing the deteriorating patient. The risks in participating were determined to be low. The participants were all informed of the UNDA policy relating to the protection of research participants, and provided with the contact details for any enquiries.

Data collection process

The data collection process required the Q-Role and Q-Comp to be administered online over a two month period. Part 1 consisted of the Q-Role and parts 2, 3 & 4 were related to the Q-Comp questionnaire. Each of the four separate parts of the questionnaires was sequentially administered at intervals of two weeks to the participants to complete and submit.

Role questionnaire (Q-Role)

An initial email concerning the Q-Role was sent to the potential participants containing information about the aims of the study and outlining the process for completing the questionnaire (see Appendix 8). The email provided information regarding confidentiality and consent for participation in the study along with a time frame for completion of the Q-Role. After a period of one week, an email was sent as a reminder to complete the questionnaire before the deadline.

Within the initial email, there were several hyperlinks for participants to follow. One of the hyperlinks directed them to the initial Q-Role questionnaire and an information page. The page asked the participants to confirm their consent for participation in the study before moving to begin part 1 Q-Role. A hyperlink allowed participants to “opt out” of the study. By clicking this link participants were automatically removed from the email contact list and no further contact regarding the study was made.

Following the initial instruction and consent page, the Q-Role contained ten demographic questions. A unique code was assigned to each participant to ensure that anonymity was maintained but allowed demographic data to be matched to later responses provided by the same participant in phase 2 of the study.

The Q-Role data was collected using 75 closed ended statements on 14 pages, and related to the eight core themes identified from the literature review. These included: definition, detection & frequency of clinical deterioration; undergraduate &

postgraduate preparation; role in deterioration; knowledge levels; confidence; competence; clinical management of deterioration; and clinical support of graduates. Several statements were presented together on a single page. The participants were instructed to read each statement and rate their level of agreement with the statement using a 5 point Likert scale response: Strongly Agree; Agree; Undecided; Disagree; Strongly Disagree. A progress bar provided the participant with a visual indication of their progress in completing the Q-Role. The participants could return to previously answered ratings and alter them before submission. Once all of the 75 statements had been rated, participants could click a submit button to save their responses for collation. Two weeks from the initial email, the Q-Role was closed.

Competency questionnaire (Q-Comp)

Over a period of six weeks, three further emails were sent to the participants who remained on the contact list from completing the Q-Role. The emails were sent at intervals of two weeks and contained information regarding the three parts of the Q-Comp. Each of the emails contained an embedded hyperlink to the relevant part of the Q-Comp for completion by the participant. The three parts represented the five domains identified by the UKDH (2009) “Acutely Ill Competency Framework”. The three parts of the Q-Comp were (see Appendix 9):

1. Airway, Breathing, Ventilation and Oxygenation Domain (contained 15 competency groups in total)
2. Circulation Domain (contained 27 competency groups in total)
3. Acute Neurological Care Domain, Transport & Mobility Domain, Patient Centred Care: Team Working and Communications Domain (contained 37 competency groups in total)

Each part of the Q-Comp had a similar format in that each contained an introductory instruction page and secondary consent. Once the participant had given their consent, they could progress to through the remainder of the questionnaire. Each competency group was presented on a separate page. Participants were requested to rate the competency for importance to their current clinical role using a four point

Likert scale; Very important; Important; Of little importance; Not important. Once this task was completed an algorithm within the online survey software determined the next question for the participant to answer. A bar provided the participants with a visual indication of their progress. Participants could return to previous answers prior to submission. Once all of the competency groups within the domain had been rated, the final page of the Q-Comp requested participants to save and submit.

Data Analysis Process for Q-Role and Q-Comp

The data from Q-Role and Q-Comp were both nominal and ordinal levels of measurement. Descriptive statistical analysis was used to provide structure, and elicit meaning from the data (Polit & Beck, 2004). These statistics were the numerical procedures or graphical techniques that were used to describe and organise the characteristics of the sample. Such characteristics included the measure of central tendency, as well as the dispersion or variance within the scores (Fisher & Marshall, 2008). These were successfully completed within the study.

Several statistical techniques were applied to the data. Initially ordinal data from the Likert scale ratings of the Q-Role and Q-Comp was recoded from string data into numerical data. This involved changing the Likert scale responses into numerical categories by creating spreadsheets using the Microsoft Excel (2010) program. Conversion from a string to numerical format made the data easier to use within the SPSS™ Ver.24 (IBM SPSS, 2016) statistical analysis software package. The formatted data was separated into the-Q-Role and Q-Comp parts.

On discussion with the UNDA biostatisticians, there were no significant gain from differentiating between those participants that agreed and those that strongly agreed with the statements posed in the Q-Role. In effect all were “agreeing” and this was the item being measured. The same stance was taken with regards to differentiating between those participants that strongly disagreed and those that disagreed with the statements presented. The scale was subsequently collapsed and

simplified for data analysis purposes. This process transformed the Likert scale responses from a 5 point scale into a 3 point scale; 1 = Agree; 2= Undecided & 3 = Disagree.

Analysis of the nominal demographic data was undertaken using frequency distributions. Nominal data analysis relates to the sorting of cases into categories and measuring dispersion based on the count (frequency) of cases in each of the categories, termed the frequency distribution (Fisher & Marshall, 2008). The participants to each of the four parts of the questionnaire were analysed and summarized by grouping them into nominal demographic categories of age, gender, area of speciality, private or public hospital and university of undergraduate study. These demographic details utilised frequency distributions and cross tabulation statistical analysis in SPSS™ Ver.24 (IBM SPSS, 2016). This procedure was done by separating the nominal demographic categories and analysing the frequency distributions from the ordinal data of the Likert scale responses with the demographic categories.

The ordinal level of measurement involved placing participants into hierarchically ordered categories, such as those generated by Likert scale responses (Fisher & Marshall, 2008). The ordinal data from the Likert scale responses to Q-Role and Q-Comp were initially analysed using rank-ordered frequency distributions to summarize the levels of agreement or disagreement with the statements posed in each questionnaire. This rank-ordered data was then further analysed using measures of central tendency including median and modes for the responses provided. This process allowed analysis of distribution and variance to be undertaken. The ordinal data for each of the questionnaire parts was also cross tabulated with demographic data to identify the rank-ordered frequencies, dispersion and variance across age, gender, area of speciality, private and public hospital and university of undergraduate training using the SPSS™ Ver.24 (IBM SPSS, 2016).

The ordinal and nominal data were then analysed for statistical independence using the chi-square test for independence. The chi-square test compares two variables to establish if they are related, testing whether distributions of categorical variables differ from each other (Fain, 2015). This was done using the SPSS™ Ver.24 (IBM

SPSS, 2016) program to calculate the chi-squares and p values from cross tabulated data comparing the nominal demographic categories with the ordinal Likert responses for each of the 4 parts of the questionnaires.

It was evident during the statistical analysis that in some of the chi-square contingency cross tabulation tables, the cell values were less than five. This was assumed to be due to the small sample of participants in certain categories such as age and gender which is consistent with an inaccurate chi-square estimation and p value (Campbell, 2007). The chi-square statistic is an approximation and is therefore more prone to error with smaller sample sizes (Freeman & Campbell, 2007). Fishers exact was purported to be a more appropriate test for independence when using a smaller sample as it calculates exactly the difference of independence (Freeman & Campbell, 2007). Accordingly, the Fisher's exact test of independence was applied for analysis of the cross tabulated variables.

Summary

Within this chapter, the data collection and data analysis processes used in phase 2 of the study were discussed. The population, sample and recruitment processes used were also outlined. The chapter also discussed the administration and data collection processes used for the two questionnaires and the statistical analysis techniques employed to describe the data.

Chapter 6

Phase 2 Quantitative Findings

Introduction

The previous chapter provided a discussion of the data collection and data analysis processes used for phase two of the study. Within chapter six, a discussion of the findings from phase two data collection will be provided. Initially the Q-Role findings will be presented. This will include the demographics of the participants followed by the core theme findings. Next, the findings of the Q-Comp will be presented. This will be subdivided into the parts 1, 2 and 3. Within each part, the demographics of the participants will be outlined followed by a presentation of the key findings.

Questionnaire role (Q-Role) findings

Phase two of the study commenced with part 1 Q-Role questionnaire. It was designed to capture the GRNs understanding of clinical deterioration, their current clinical role, knowledge, confidence and preparation to assess and manage the deteriorating ward patient. The Q-Role was formatted to initially collect nominal demographic data from the participants. The demographic data provided scope for further data analysis to understand if these variables were independent or influenced the participants' role.

Q-Role: Demographic data.

participant numbers.

The total population of GRNs meeting the inclusion criteria for the study was 1100. Of that number a total of 90.09% (n=991) were eligible to participate. These people were emailed an invitation with via the Department of Health WA, with 5% (n=50) of GRNs opting out of the study. From the remaining number, 15.09% (n=142) participated in the online Q-Role with 76.7% (n=109) being fully completed. Unfortunately, 23.3% (n=33) were excluded from the study, as there was missing data. A total of 109 valid Q-Role were analysed. The demographic variables included: age; gender; area of speciality; private or public hospital employment; and their undergraduate nursing education. The findings will now be presented in detail.

age group

The participants were asked to identify their age group from nine categories listed. The age categories ranged from 18-20 years of age through to 56 years and over. The sample included participants from all age ranges with the greatest number of participants in the 21-25 years age range (n=55). The age ranges of 51-55 years (n=2) and 56 years and over (n=2) had the smallest representation.

gender

As was expected, the vast majority of participants in the part 1 Q-Role were female equating to 92.7% (n=101). A small number of males 7.3% (n=8) made up the remainder of the participants.

private or public hospital employment

The next demographic variable that was identified was the funding model used by the employing hospital organization. In general terms, the State and Federal Australian Government provide the majority of funds for public hospitals whereas private health insurance and out-of-pocket payments by patients mainly fund the private hospital sector (AIHW, 2010). Of the total, 87.2% (n=95) of participants were employed within the public hospital system, and 12.8% (n=14) within the private hospital system.

area of specialty

The participants were asked to identify their current area of specialty from a list of 10 options. The specialties were diverse, ranging in acuity and exposure to the acutely ill patient. The most frequent area of specialty in which the participants were working was identified as the medical ward accounting for 36.7% (n=40) of participants. This specialty was followed by the surgical ward, accounting for 24.8% (n=27), and Rehabilitation unit (Rehab) with 11% (n=12) of participants. The other seven specialty areas accounted for just 27.5% (n=30) of the total number of participants. The specialty with the lowest number of participants was Critical Care with just 1.8% (n=2) of respondents working within this area (see figure below).

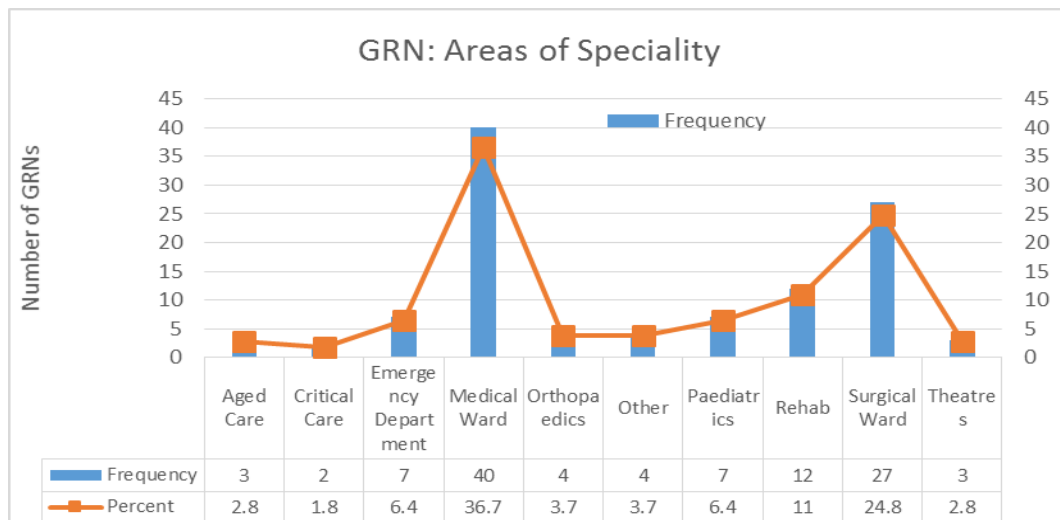


Figure 8. Q-Role participants’ area of specialty.

undergraduate nursing education

The participants were asked to identify the university where they had completed their undergraduate nursing studies. They were given a choice of six categories, five containing local Perth universities, and an option of “other university”. There was a fairly even representation of participants from all undergraduate nursing programs. The largest number of participants were educated at UNDA with 31.2% (n=34). This was followed Edith Cowan University 24.8% (n=27). A number of participants 20.2%

(n=22) indicated “Other University” as their choice. This included interstate and overseas education providers.

demographic cross-tabulations

To better understand the characteristics of the participants in the Q-Role, a number of cross tabulation frequency distributions were calculated. These utilised the five demographic variables in combination to enhance the description of the distribution of the participants across the different themes. Initially the age and gender cross tabulation frequency distribution was calculated. This provided a summary of the number of male and female participants in each age group bracket across the participants (see table 4 below).

Table 4

Q-Role: Age Group v Gender Cross-tabulation

		2. GENDER		Total
		Female	Male	
3. Age Group	18-20	2	1	3
	21-25	51	4	55
	26-30	17	2	19
	31-35	8	0	8
	36-40	12	1	13
	41-45	3	0	3
	46-50	4	0	4
	51-55	2	0	2
	56 & over	2	0	2
Total		101	8	109

As expected, the highest numbers of participants for both males and females was within the 21-25 years age bracket (n=55). Interestingly there was only 1 male participant in the age groups above that of 26-30 years bracket compared to 31 females. There were no male participants in the age brackets above 40 years and over.

The area of specialty and gender cross tabulation frequency distribution was also calculated. This calculation provided a description of the roles undertaken by both

males and females who participated in the Q-Role. The main area of specialty for both genders remained the medical ward area. The percentage of male participants working in the medical ward area was 50% (n=4) compared to a lower number of female participants at 35.6% (n=36) (see Table 5).

Table 5

Q-Role Area of Speciality v Gender Cross-tabulation

		GENDER		Total
		Female	Male	
Speciality Area	Aged Care	3	0	3
	Critical Care	2	0	2
	Emergency Department	6	1	7
	Medical Ward	36	4	40
	Orthopaedics	4	0	4
	Other	4	0	4
	Paediatrics	7	0	7
	Rehab	11	1	12
	Surgical Ward	26	1	27
	Theatres	2	1	3
Total		101	8	109

A final cross tabulation frequency of interest was the area of speciality and private or public hospital employment. The numbers of participants from the public hospital setting were significantly higher (n=95) in comparison to those participating from the private hospital setting (n=14). Of interest in the findings of the cross-tabulation was the number of areas of specialty represented by public and private hospital participants (see table 6).

Table 6

Q-Role: Area of Specialty v Private or Public hospital Cross-tabulation

		Private or Public hospital		Total
		Private	Public	
Area of Specialty	Aged Care	0	3	3
	Critical Care	0	2	2
	Emergency Department	0	7	7
	Medical Ward	5	35	40
	Orthopaedics	1	3	4
	Other	2	2	4
	Paediatrics	0	7	7
	Rehab	0	12	12
	Surgical Ward	6	21	27
	Theatres	0	3	3
Total		14	95	109

The participants from the public hospital setting were distributed across all of the ten specialty categories. In comparison those participating from the private hospital setting were distributed across four specialties; medical, surgical, orthopaedics and other. This may be the result of low numbers of participants from the private hospital setting, or possibly due to a difference in graduate nurse allocation and placement in the private sector hospitals.

Q-Role: Core findings

Following the nominal demographic data, the Q-Role asked the participants to indicate their level of agreement with 75 statements relating to the eight core themes from the literature review. A five point Likert scale response was used to provide a ranked order level of agreement during the Q-Role. The Likert scale responses were further collapsed from a five point to a three point response scale. Initially the ranked order frequency distributions were calculated for all of the responses.

The next stage of data analysis was to compare the ordinal data levels of agreement with the demographic variables to look for possible association. As the number of participants in some of the demographic variables categories was low, the Fisher’s exact test was used to calculate the level of independence. This was done using the SPSS™ Ver.24 (IBM SPSS, 2016).

Theme 1: Definition, Detection and Frequency of clinical deterioration.

The participants were asked to rate their level of agreement with eight statements focusing upon the definition, detection and frequency of clinical deterioration in their areas of work. This request was achieved by clicking the Likert scale response that best matched their level of agreement with the statement item. A summary of the eight statement findings is presented below (see figure 9 below).

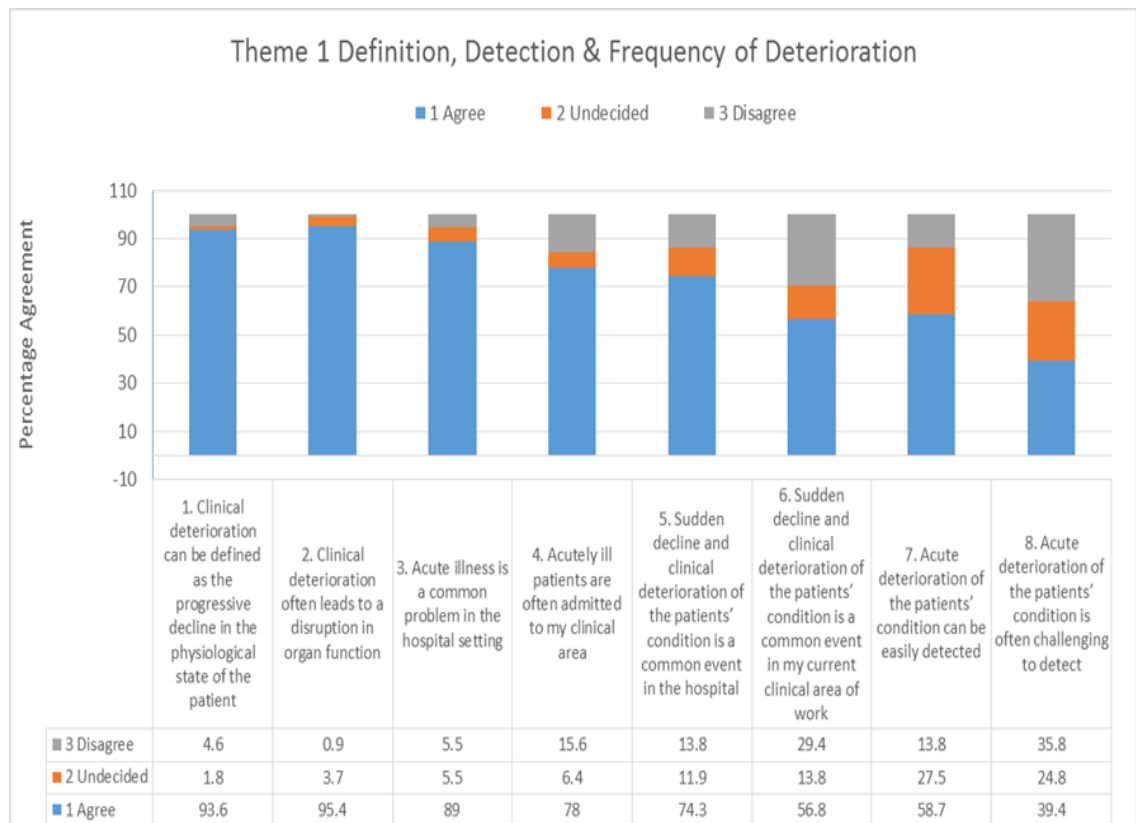


Figure 9. Q-Role: definition, detection & frequency of clinical deterioration.

Statements 1 and 2 focused on ascertaining a definition of deterioration from the participants. The first statement defined clinical deterioration as a progressive decline in the patient's physiological state to which 93.6% of participants agreed. The second statement suggested clinical deterioration often leads to disrupted organ function with 95.4% agreeing.

The next statements asked participants about the frequency of clinical deterioration within their areas of specialty and the hospital as a whole. From the data, 89% of participants indicated acute illness was common within the hospital setting. Around 78% of participants indicated that acutely ill patients were often admitted to their ward area with 6.4% undecided and 15.6% disagreeing.

Participants were then asked about sudden changes and physiological decline in hospital patients. From the data, 74.3% of participants indicated that this was a common event within the hospital with 11.9% undecided and 13.8% disagreeing. Interestingly, only 56.8% of participants agreed that sudden decline and clinical deterioration was common in their clinical areas with 29.4% disagreeing it was a common issue and 13.8% undecided.

The final statements within the theme asked participants about the challenge of detecting clinical deterioration in their patients. From the data 58.7% of participants felt clinical deterioration could be easily detected, with 27.5% suggesting they were undecided and 13.8% disagreeing. A second statement reversed the wording and stated clinical deterioration was challenging to detect in patients. This time 39.4% of participants agreed, 24.8% were undecided and 35.8% disagreed that clinical deterioration was challenging to detect.

Theme 1: Fisher's exact results.

The data collected from the eight statements in theme 1 was analysed for independence using the Fisher's exact test in relation to the demographic variables of the participants. Calculation and analysis of 40 Fisher's exact P values was undertaken. Four were identified as significant:

1. Difference across private or public hospital employment in the level of agreement to the statement "sudden decline and clinical deterioration of the patients' condition is a common event in the hospital" (Fisher's exact test, P Value = 0.037). Seen to be more common in public hospitals.
2. Difference by area of specialty in the level of agreement to the statement "clinical deterioration often leads to a disruption in organ function" (Fisher's exact test, P Value = 0.039). Rehab area was less inclined to agree with the statement.
3. Difference by area of specialty in the level of agreement to the statement "acutely ill patients are often admitted to my clinical area (Fisher's exact test, P Value = 0.000). Rehab and Aged Care area less inclined to agree with the statement.
4. Difference by area of specialty in the level of agreement to the statement "sudden decline and clinical deterioration of the patients' condition is a common event in my current clinical area of work" (Fisher's exact test, P Value = 0.000). All areas other than Critical Care, ED and Medical Ward were less inclined to agree.

Theme 2: Undergraduate & Graduate Preparation.

Theme 2 of the Q-Role focused on the preparation of the participants to manage the deteriorating patient. The participants were asked to rate their level of agreement with nine statements related to undergraduate and postgraduate education. A summary of

the data findings for the nine statements in theme 2 is presented below (see Figure 10 below).

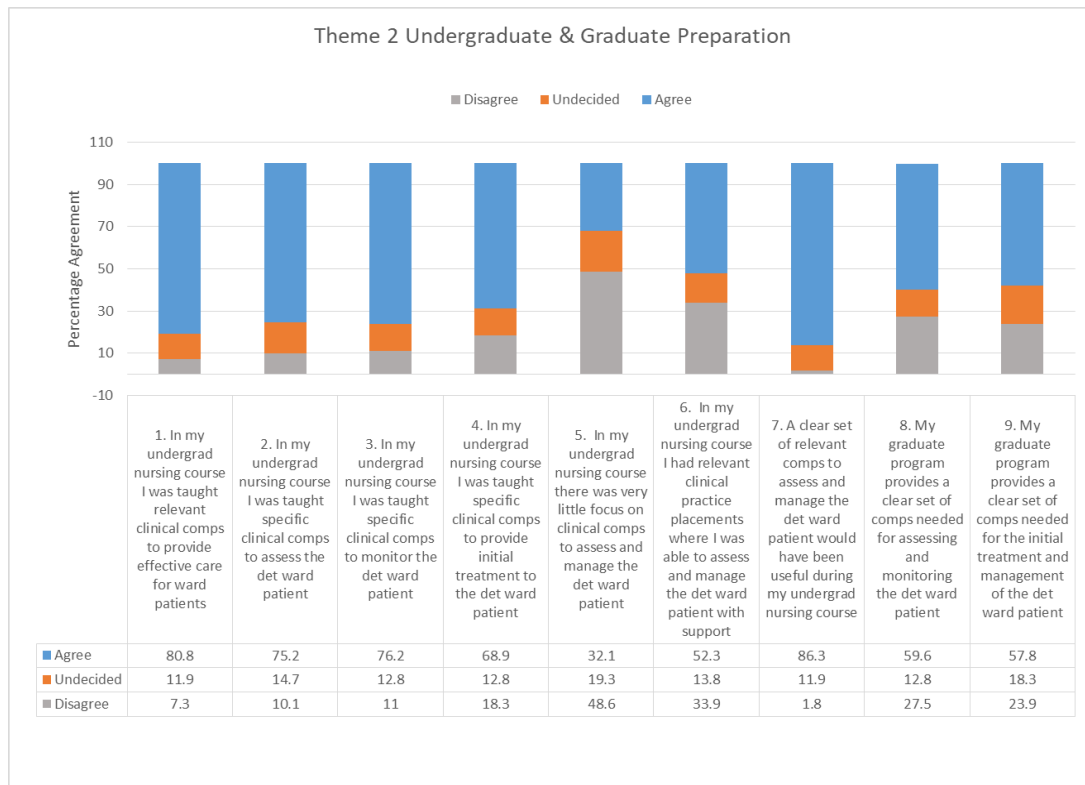


Figure 10. Q-Role: undergraduate & graduate preparation.

Statements 1 to 5 in theme 2 asked the participants about their undergraduate education and in particular clinical competencies gained during their undergraduate nursing program. The participants were asked if they were taught relevant clinical competencies firstly to care for ward patients in general, 80.8% of participants agreed they had, with 11.9% undecided and 7.3% disagreeing.

Participants were then asked if they had been taught clinical competencies within their undergraduate studies to assess (statement 2), to monitor (statement 3) and to provide treatment (statement 4) to the deteriorating ward patient. The level of agreements were similar; 75.2% (statement 2), 76.2% (statement 3) and 68.9% (statement 4). The participants were next asked to rate their agreement with a reverse worded statement (statement 5) suggesting there was very little focus on clinical

competencies during the undergraduate program. Around 32.1% of participants agreed with this statement, 19.3% were undecided and 48.6% disagreed.

Participants were asked about their clinical practicum placements during their undergraduate education. Specifically they were asked if they had practicum placements that provided opportunities to assess and manage the deteriorating ward patient (statement 6). From the responses, only 52.3% agreed they had relevant placements, 13.9% were undecided and 33.9% disagreed. Statement 7 asked if a clear set of clinical competencies to assess and manage the deteriorating patient would have been useful in their undergraduate preparation, to which 86.3% agreed they would.

The final statements of theme 2 focused upon the graduate program the participants were undertaking. They were asked if the graduate program provided clinical competencies for assessment and monitoring (statement 8) and treatment and management (statement 9) of the deteriorating patient. Only 59.6% felt the graduate program provided clinical competencies for assessment and monitoring, whilst less 57.8% felt it provided clinical competencies for treatment and management of the deteriorating patient.

Theme 2: Fisher's exact results.

The data collected from the nine statements in theme 2 was analysed for independence using the Fisher's exact test in relation to the five demographic variables of the participants. This led to the calculation and analysis of 45 Fisher's exact P values. None of the P values returned less than 0.05, therefore, no significant association between the statements and the demographic variables was found.

Theme 3: Role in Deterioration

Theme 3 asked participants to rate their level of agreement with 23 statements focusing upon their clinical role as a GRN in managing the deteriorating ward patient

and their understanding of the role. The theme contained a mix of both positively and negatively framed statements to measure the participants' rating of agreement.

The initial seven statements focused upon the expectations of the participants' role when dealing with a deteriorating patient. Around 86.2% of participants expected to look after acutely ill patients within their current area of work and 93.6% of participants agreed it was currently their role to assess and monitor the acutely ill deteriorating ward patient. When asked if they thought the GRN role should be to assess and monitor the deteriorating ward patient, 77.1% agreed with 15.6% undecided and 7.3% disagreeing (see Figure 11 below).

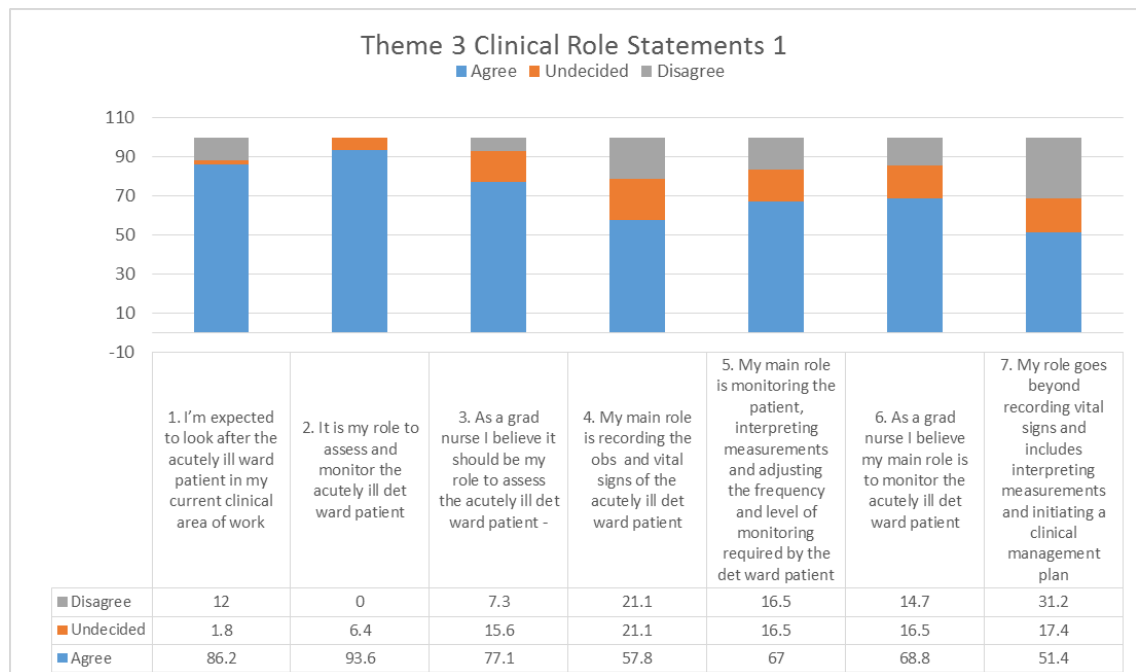


Figure 11. Q-Role: clinical role statements 1.

The next statements asked participants about the main role of the GRN when dealing with the deteriorating ward patient. Of the participant responses, 57.8% agreed the main role of the GRN was to record the patients vital signs, 68.8% agreed the main role was overall monitoring of the deteriorating patient and 67% of participants felt the main role included interpretation of monitoring and adjustment of the frequency of monitoring. The participants were asked if their main role went beyond monitoring to

include initiating a clinical management plan. From this statement 31.2% disagreed that their role included clinical management, 17.4% were undecided and only 51.4% agreed.

The following set of statements examined the GRNs role in alerting other health care professionals to the condition of the deteriorating ward patient. From the data, 99.1% of participants agreed it was their role to alert senior nursing staff when concerned about a ward patient deteriorating. Comparatively 95.4% of participants agreed it was their role to alert medical staff to the deteriorating patient (see Figure 12 below).

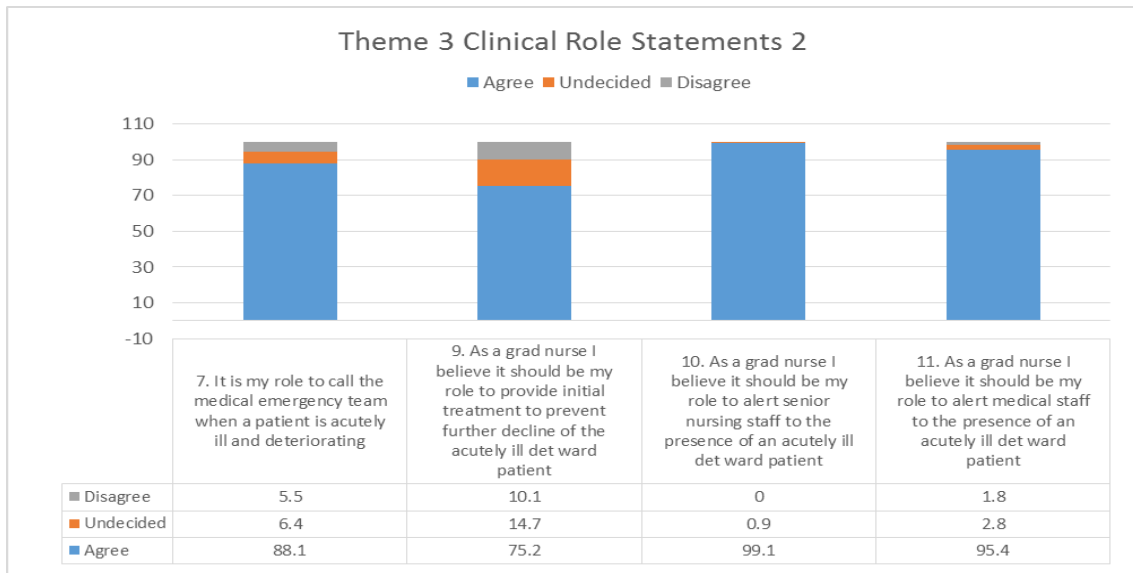


Figure 12. Q-Role: clinical role statements 2.

Interesting only 75.2% of participants agreed it should be their role to provide initial treatment to prevent further decline of the deteriorating patient with 14.7% undecided and 10.1% disagreeing. In relation to calling the Medical Emergency Team (MET), 88.1% agreed it was their role to call, 6.4% were undecided and 5.5% disagreed that it was their role.

The subsequent set of statements focused on the participants' awareness of responsibilities in dealing with the deteriorating ward patient. Overall, 78.9% of

participants agreed they had a clear understanding of their responsibilities when dealing with the deteriorating patient with 12.8% undecided and 8.3% disagreeing. When asked if they often felt confused about their responsibilities, 63.3% disagree, 16.5% were undecided and 20.2% agreed (see Figure 13 below).

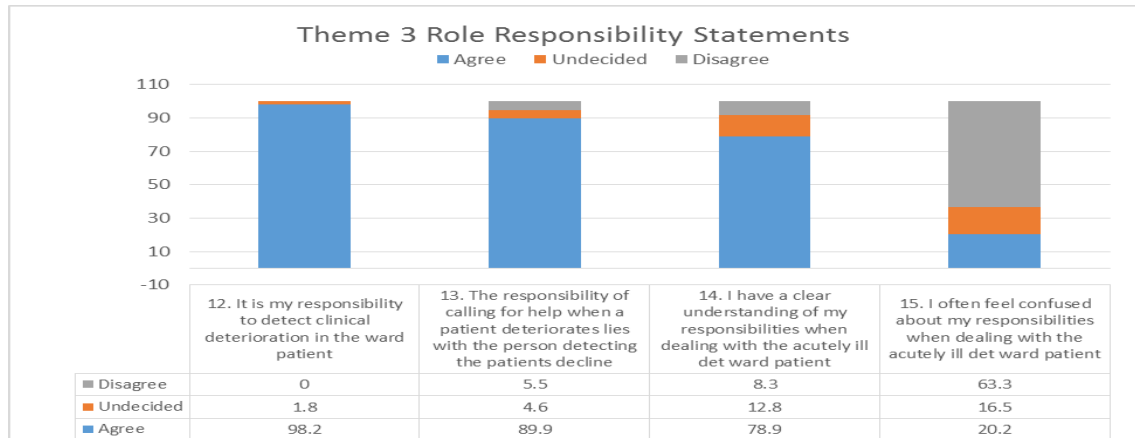


Figure 13. Q-Role: clinical role statements 3.

From the data, 98.2% of participants agreed it was their responsibility to detect clinical deterioration in the ward patient. Again 89.9% agreed that the responsibility of calling for help lies with the person detecting the patients decline. However, 5.5% of GRNs disagreed with this and 4.6% were undecided.

The final set of statements from theme 3 focused on the participants overall understanding of their role in dealing with the deteriorating ward patient (see Figure 14).

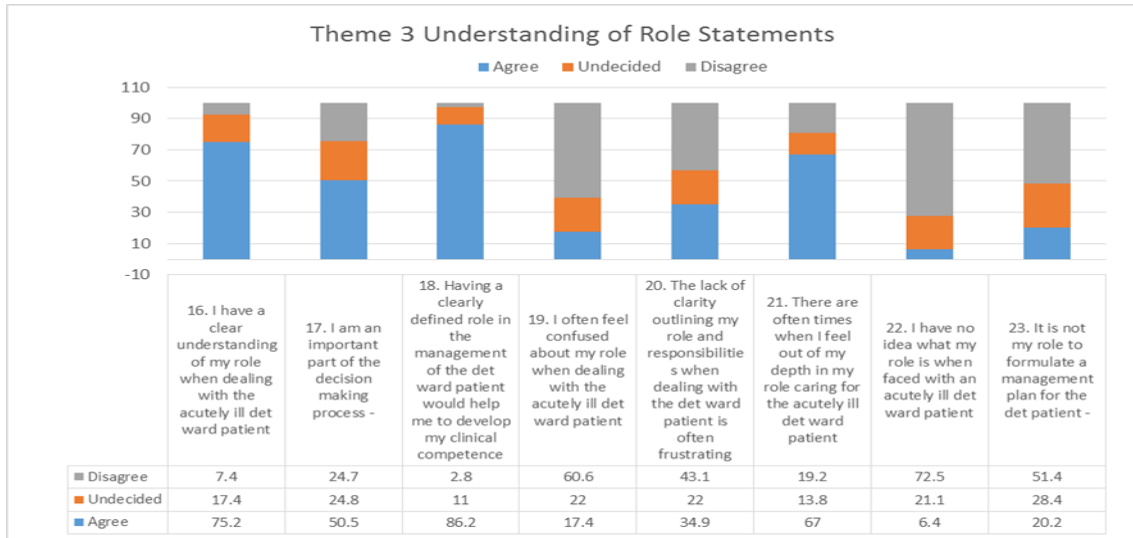


Figure 14. Q-Role: understanding of role statements.

When asked if they had a clear understanding of their role as a GRN in dealing with the deteriorating patient, 75.2% agreed, 17.4% were undecided and 7.4% disagreed. A negative statement suggesting that the GRN had no idea what their role was when faced with an acutely ill deteriorating ward patient was also presented. The participants responses showed 75.2% disagreed with the statement, 21.1% were undecided and 6.4% agreed.

The participants were next questioned if they often felt confused about their role with the deteriorating ward patient to which 17.4% agreed they were, 60.6% disagreed, 22% were undecided. When asked if a lack of clarity concerning the GRN role and responsibilities with deteriorating patients often led to frustration, 39.4% agreed it did, 22% were undecided and 43.1% disagreed.

The participants were asked if they often felt out of their depth caring for the deteriorating patient. From this 67% agreed they did, 13.8% were undecided and 19.2% disagreed. When questioned about formulating a management plan for the deteriorating patient, 20.2% indicated that this was not their role, 28.4% were undecided and 51.4% felt it was part of the GRN role. When canvassed about their role in decision making, 50.5% agreed that they were an important part of the decision

making process, 24.8% were undecided and 24.7% felt they were not important in decision making.

Theme 3: Fisher's exact results.

The data collected from the 23 statements in theme 3 were analysed for independence using the Fisher's exact test in relation to the demographic variables of the participants. This led to the calculation and analysis of 115 Fisher's exact P values. From these, seven were identified as significant. These were:

1. Difference by gender in the level of agreement to the statement "there are often times when I feel out of my depth in my role caring for the acutely ill deteriorating ward patient" (Fisher's exact test, P Value = 0.042). Males less likely to indicate they felt out of their depth.
2. Difference by age group in the level of agreement to the statement "I am an important part of the decision making process" (Fisher's exact test, P Value = 0.018). As age group increases less inclined to agree with statement.
3. Difference by age group in the level of agreement to the statement "I have a clear understanding of my role when dealing with the acutely ill deteriorating ward patient" (Fisher's exact test, P Value = 0.048). As age group increases less inclined to agree with statement.
4. Difference by age group in the level of agreement to the statement "I often feel confused about my role when dealing with the acutely ill deteriorating ward patient" (Fisher's exact test, P Value = 0.037). As age group increases more inclined to agree with statement.
5. Difference by age group in the level of agreement to the statement "my role goes beyond recording vital signs and includes interpreting measurements and initiating a clinical management plan e.g. commencing oxygen therapy, insertion of airway adjuncts, selection of Intravenous fluids and administration of a bolus of fluid" (Fisher's exact test, P Value = 0.033). As age group increases less inclined to agree with statement.
6. Difference by age group in the level of agreement to the statement "I have no idea what my role is when faced with an acutely ill deteriorating ward patient"

(Fisher’s exact test, P Value = 0.012). As age group increases more inclined to agree with statement.

7. Difference by private or public hospital employment in the level of agreement to the statement “it is my responsibility to detect clinical deterioration in the ward patient” (Fisher’s exact test, P Value = 0.015). Staff from private hospital setting less inclined to agree with the statement.

Theme 4: Knowledge Levels

Theme 4 asked participants to rate their level of agreement with 5 statements focusing upon the knowledge levels of the GRN in relation to the deteriorating ward patient. Initially the GRNs were asked about specific areas of knowledge to undertake their clinical role (see Figure 15 below).

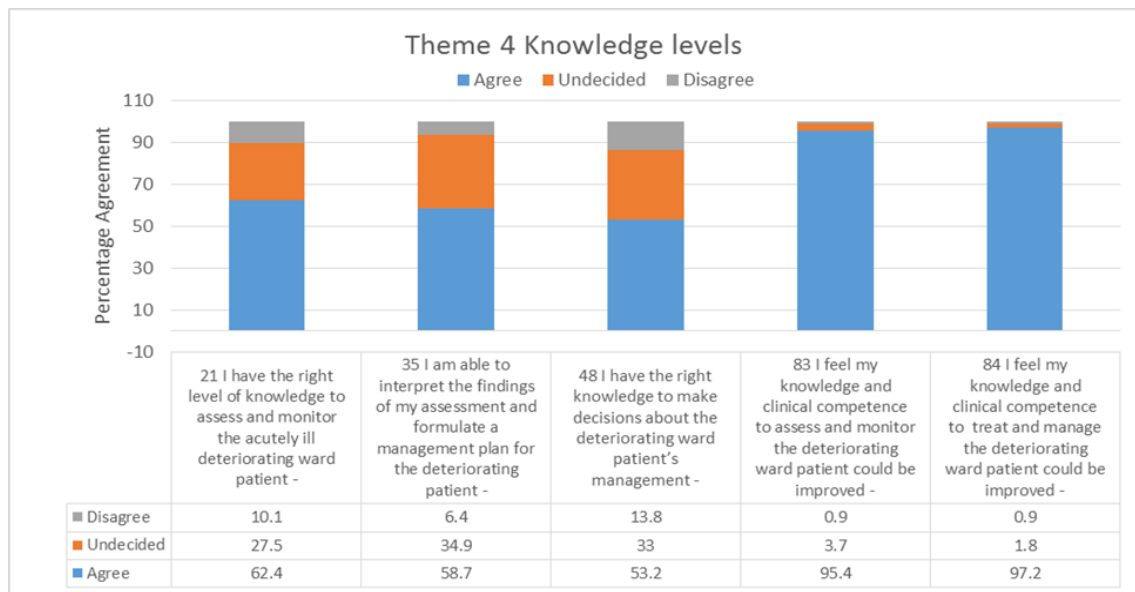


Figure 15. Q-Role: knowledge levels.

The first statement questioned if participants had the right level of knowledge to assess and monitor the acutely ill deteriorating ward patient. Approximately 62.4%

agreed they had, 27.5% were undecided and 10.1% felt they had insufficient knowledge to assess and monitor.

The participants were then asked if they have the right knowledge to make decisions about the deteriorating patient's management. Only 53.3% agreed they had this knowledge, 33% were undecided and 13.8% felt they did not have the right knowledge to make decisions. Next the participants were asked if they felt able to interpret the findings of assessments and formulate a management plan for the deteriorating patient. Approximately 58.7% of GRNs agreed they could interpret and formulate a management plan with 34.9% indicating they were undecided and 6.4% disagreeing.

The focus then shifted to whether the participants' knowledge and clinical competence could be improved in relation to assessment and monitoring and subsequent treatment and management of the deteriorating ward patient. The responses indicated the participants overwhelmingly agreed knowledge and competence could be improved. Around 95.4% (assessment and monitoring) and 97.2% (treatment and management) agreed knowledge could be improved.

Theme 4: Fisher's exact results.

The data collected from the five statements in theme 4 was analysed for independence using the Fisher's exact test in relation to the five demographic variables of the participants. This led to the calculation and analysis of 25 Fisher's exact P values. None of the P values were returned less than 0.05, therefore, no significant association between the statements and the demographic variables was found.

Theme 5: Confidence Levels

Theme 5 asked participants to rate their level of agreement with seven statements focusing upon the confidence levels of the participants in relation to managing the

deteriorating ward patient. The statements measured confidence in relation to clinical monitoring, intervention and communication (see Figure 16 below).

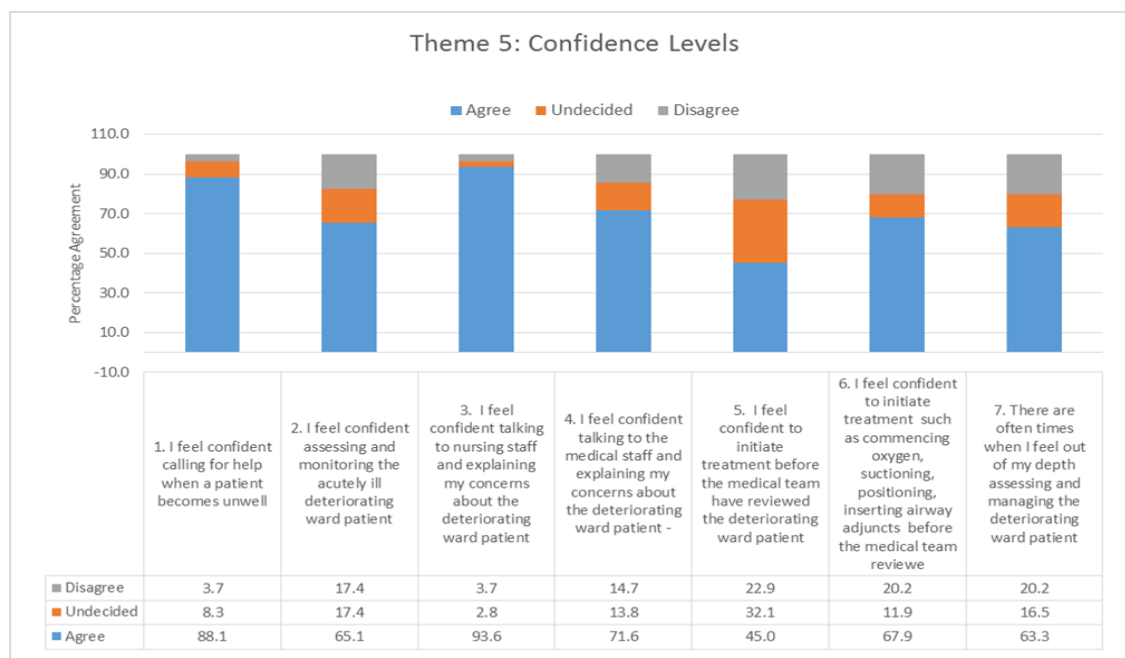


Figure 16. Q-Role: confidence levels.

The initial statement asked GRNs about their level of confidence to assess and monitor the acutely ill patient with 65.1% agreeing they felt confident, whilst 17.4% were undecided and a further 17.4% indicating they did not feel confident. Next the participants were asked if they were confident calling for help when a patient becomes unwell. Around 88.1% of GRNs agreed they felt confident to call for help, 8.3% were undecided and 3.7% disagreed.

Communication was the focus of the next question, the participants were asked if they felt confident explaining their concerns about the deteriorating ward patient to senior nursing staff. The results showed 93.6% agreed they felt confident talking to senior nurses, 2.8% were undecided and 3.7% disagreed. Confidence in talking to the medical staff and explaining concerns about deterioration was then asked in the next question. Interestingly, 71.6% agreed they were confident raising concerns with medical staff. Approximately 13.8% were undecided and 14.7% did not agree.

The participants were subsequently questioned about their confidence to initiate treatment before the medical team had reviewed the deteriorating patient. Interestingly 45% agreed they felt confident. On further questioning about specific treatments such as giving high concentration oxygen or suctioning a patient prior to medical team review, 67.9% of participants agreed they felt confident to initiate this treatment. However, 20.2% of participants did not feel confident to initiate simple treatment prior to medical review with 11.9% indicating they were undecided. When asked if they often felt out of their depth assessing and managing the deteriorating patient, 63.3% of participants agreed they did, 16.5% were undecided and 20.2% disagreed.

Theme 5: Fisher's exact results.

The data collected from the seven statements in theme 5 was analysed for independence using the Fisher's exact test in relation to the demographic variables of the participants. This led to the calculation and analysis of 35 Fisher's exact P values. From the 35 P values analysed, four were identified as significant:

1. Difference by gender in the level of agreement to the statement "there are often times when I feel out of my depth assessing and managing the deteriorating ward patient" (Fisher's exact test, P Value = 0.024). Male respondents less inclined to agree with statement.
2. Difference by age group in the level of agreement to the statement "I feel confident calling for help when a patient becomes unwell" (Fisher's exact test, P Value = 0.030). As age group increases more inclined to disagree with statement.
3. Difference by age group in the level of agreement to the statement "I feel confident talking to nursing staff and explaining my concerns about the deteriorating ward patient" (Fisher's exact test, P Value = 0.030). As age group increases more inclined to disagree with statement.
4. Difference by age group in the level of agreement to the statement "I feel confident to initiate treatment before the medical team have reviewed the

deteriorating ward patient” (Fisher’s exact test, P Value = 0.029). As age group increases more inclined to disagree with statement.

Theme 6: Competence Levels

Theme 6 asked participants to rate their level of agreement with six statements focusing upon the competence levels of the participants in relation to managing the deteriorating ward patient (see Figure 17 below).

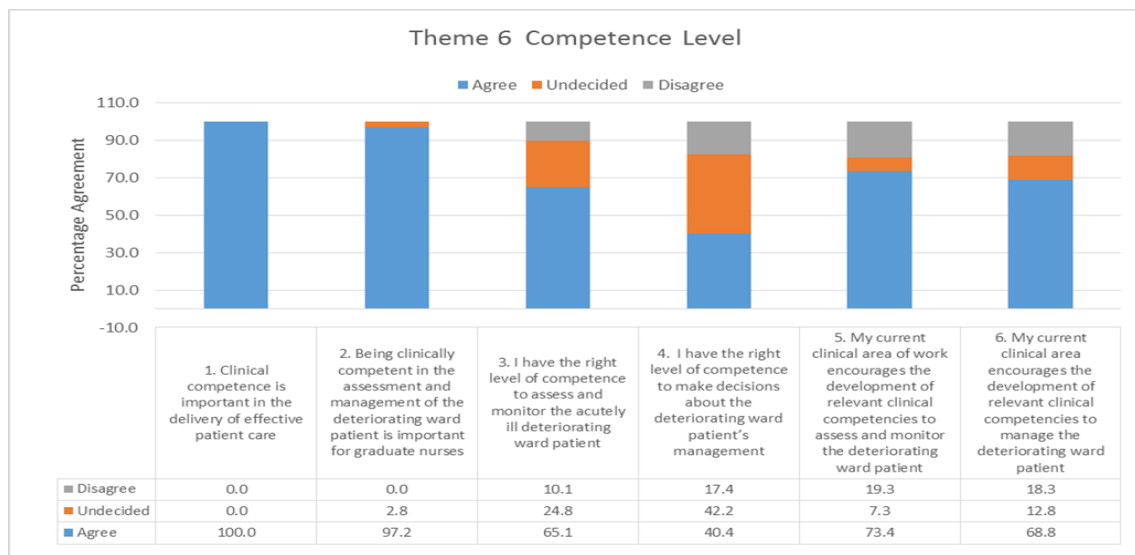


Figure 17. Q-Role: competence levels.

Generally, participants agreed that clinical competence was important in providing effective care for patients, with 100% of GRNs agreeing. The participants were asked if being clinically competent in the assessment and management of the deteriorating ward patient was important for them, to which 97.2% agreed.

The participants were questioned about their current level of competence. They were asked if they had the right level of competence to assess and monitor the acutely ill deteriorating ward patient. Approximately 65.1% agreed they did have the right level of competence, 24.8% were undecided and 10.1% disagreed. Next the

participants were asked if they had the right level of competence to make decisions about the deteriorating ward patient's management. Surprisingly, only 40.4% agreed they had the competence to make clinical management decisions. Around 42.2% were undecided and 17.4% suggested they did not have the competence to make clinical decisions.

The focus of the theme statements then moved to the development of competence. The participants were asked if their current clinical area encouraged the development of relevant clinical competencies. The first statement concerned competencies to assess and monitor the deteriorating ward patient with 73.4% agreeing they were encouraged, 7.3% were undecided and 19.3% disagreed. The second statement concerned encouragement of competencies to manage the deteriorating ward patient to which 68.8% agreed they were encouraged, 12.8% were undecided and 18.3% disagreed.

Theme 6: Fisher's exact results.

The data collected from the six statements in theme 6 was analysed for independence using the Fisher's exact test in relation to the demographic variables of the participants. This led to the calculation and analysis of 30 Fisher's exact P values. From the 30 P values analysed, one was identified as significant:

1. Difference by age group in the level of agreement to the statement "my current clinical area of work encourages the development of relevant clinical competencies to assess and monitor the deteriorating ward patient" (Fisher's exact test, P Value = 0.018). As age group increases more inclined to disagree with statement.

Theme 7: Clinical Management of Deterioration

Theme 7 asked participants to rate their level of agreement with thirteen statements focusing upon the clinical management of the deteriorating patient. The statements

focused on a number of areas including response to deterioration, delays in providing intervention and clinical policies to guide practice (see Figure 18 below).

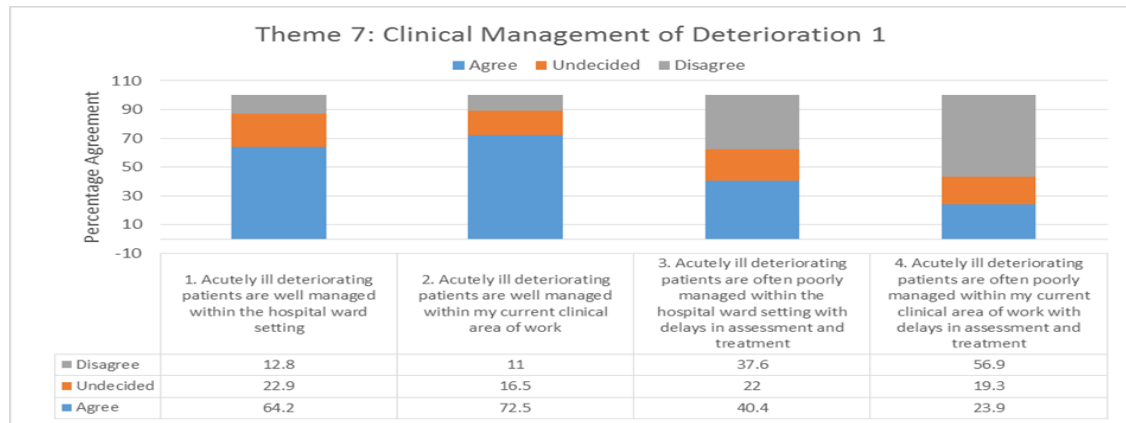


Figure 18. Q-Role: clinical management of deterioration 1.

Initially the participants were asked about overall management of the deteriorating patients within the hospital setting. Around 64.2% of participants agreed that deteriorating patients were well managed in their hospital with 22.9% undecided and 12.8% disagreeing. When a negatively framed statement was used indicating the deteriorating patients were often poorly managed within the hospital with delays in assessment and treatment, 40.4% of participants agreed, with 22% undecided and 37.6% disagreeing.

When questioned about overall management of the deteriorating patients within their clinical area, 72.5% of participants agreed deteriorating patients were well managed in their areas. Again when negatively framed suggesting the deteriorating patients are often poorly managed within my current clinical area of work with delays in assessment and treatment 23.9% of participants agreed, around 19.3% were undecided and 56.0% disagreed.

The next focus concerned the timeliness of clinical management for the deteriorating patient (see Figure 19 below).

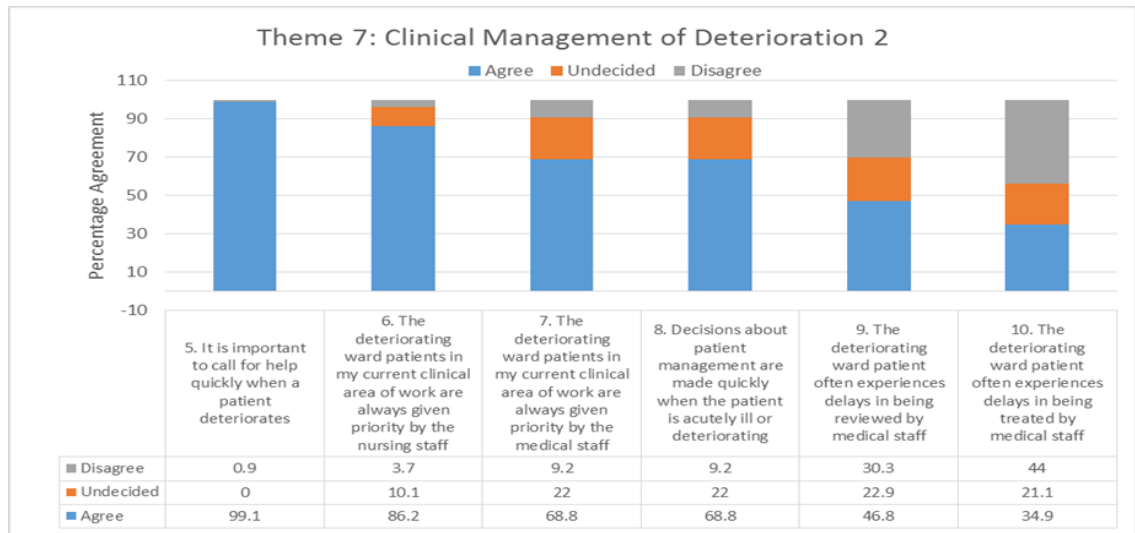


Figure 19. Q-Role: clinical management of deterioration 2.

Participants were asked if it was important to call for help quickly when a patient condition deteriorates, with 99.1% agreeing it was important. Participants were then questioned as to whether management of the deteriorating ward patients was given priority by staff the in their area. Around 86.2% agreed that the deteriorating patient were always given priority by nursing staff, 10.1% were undecided and 3.7% disagreed. Around 68.8% agreed the deteriorating patient was always given priority by medical staff, 22% were undecided and 9.2% disagreed.

Participants were asked if decisions about deteriorating patient management were made quickly. Around 68.8% agreed decisions were made quickly, 22% were undecided and 9.2% disagreed. The participants were asked if delays in medical review occurred often with 46.8% agreeing delay in review was common event. Around 34.9% of participants also agreed, that treatment of the deteriorating patients was often delayed by medical staff.

Finally participants were asked about clinical policies to support practice (see figure 20). Around 91.7% of participants agreed there was a clear policy and procedure in their area of work for alerting help when a patient deteriorates. Also 79.8% of participants agreed their current clinical area of work had specific policies

and procedures and 75.2% agreed their area had policies and procedures for the management of the deteriorating patient (see Figure 20).

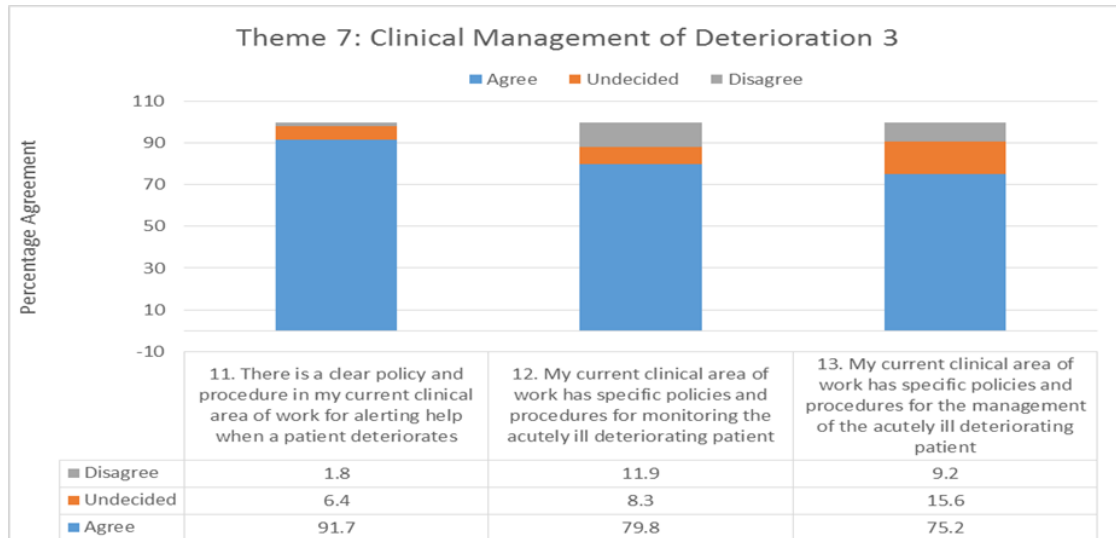


Figure 20. Q-Role: clinical management of deterioration 3.

Theme 7: Fisher’s exact results.

The data collected from the thirteen statements in theme 7 were analysed for independence using the Fisher’s exact test in relation to the five demographic variables. This led to the calculation and analysis of 65 Fisher’s exact P values. None of the P values were returned less than 0.05, therefore, no significant association between the statements and the demographic variables was found.

Theme 8: Clinical Support.

Theme 8 was the final set of statements within the Q-Role questionnaire. The participants were asked to rate their level of agreement with four statements focusing upon the clinical support of the GRN (see Figure 21).

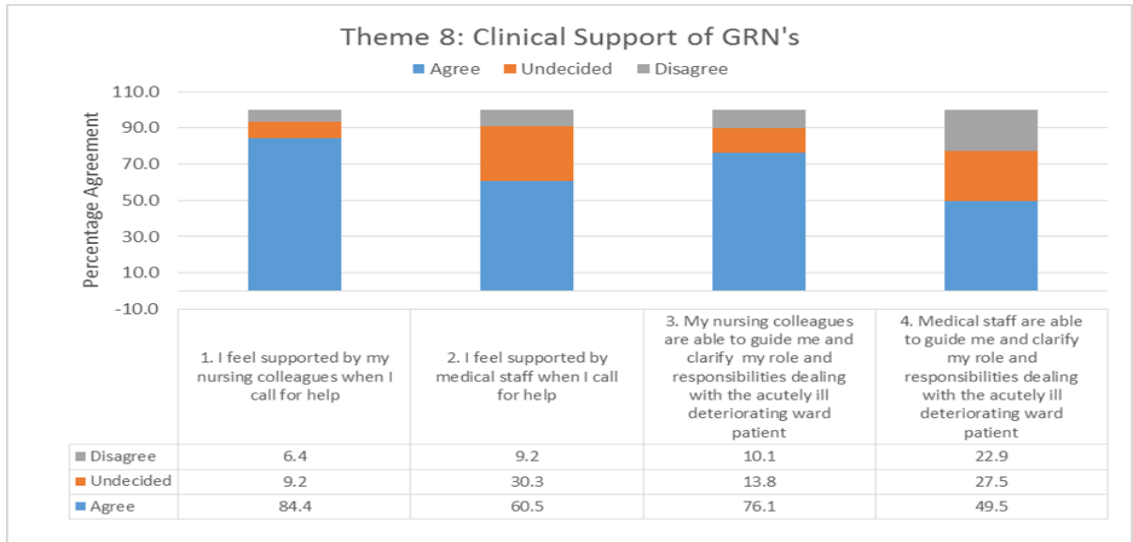


Figure 21. Q-Role: clinical support of GRNs.

The participants were asked if they felt supported by both nursing and medical colleagues when they called for help. Around 84.4% agreed they felt supported by their nursing colleagues, with 9.2% undecided and 6.4% disagreeing. In contrast 60.5% agreed they felt supported by their medical colleagues when calling for help with 30.3% undecided and 9.2% disagreeing.

Next the participants were questioned about guidance and clarification when dealing with the deteriorating patient. Around 76.1% agreed their nursing colleagues were able to guide me and clarify roles and responsibilities when dealing with the deteriorating ward patient. However, 49.5% agreed that medical staff provided guidance and clarification of roles and responsibilities when dealing with the deteriorating ward patient.

Theme 8: Fisher's exact results

The data collected from the four statements in theme 8 was analysed for independence using the Fisher's exact test in relation to the five demographic variables of the participants. This led to the calculation and analysis of 20 Fisher's exact P values.

None of the P values were returned less than 0.05, therefore, no significant association between the statements and the demographic variables were found.

Q-Comp Findings: Parts 2, 3 and 4

Within this section of the chapter the analysis and findings from the Q-Comp questionnaire will be presented. The Q-Comp was developed from the Department of Health UK (2009) document entitled “Acutely ill Competency Framework”. This document prescribed a list of 79 key competencies to be used by healthcare practitioners in the hospital setting, to manage the acutely ill deteriorating ward patient.

The Q-Comp was formatted to initially collect nominal demographic data from the GRNs. The data provided scope for understanding the background and context of the participants’ practice. It also facilitated the discovery of possible associations between demographic variables and the participants’ selection of important competencies together with the chain of response (COR) level they were currently working in their clinical practice.

Q-Comp centred on collecting ranked ordinal data on the importance of the 79 pre-determined key clinical competencies. To measure the participants rating of the importance of each competency, the questionnaire utilised a 4 point Likert scale.

Ordinal data for the chain of response (COR) level at which the participants were currently working in their clinical practice was collected. This related to the acute care competencies that the participants had identified as important. An algorithm within the Q-Comp questionnaire identified if the participant had identified a competency as import. These participants were then directed to answer a secondary set of statements to indicate the COR level they were working at in relation to the specific competency.

The Q-Comp questionnaire was divided into three sections, which the participants could complete over a period of six weeks. This led to a variation in the number of participants completing each section and a different demographic profile for each of the three Q-Comp sections. Each section will present the relevant demographic information collected, followed by the findings for each related competency.

These three sections comprises parts 2, 3 & 4 of the quantitative questionnaires, containing the following competency domains from the UKDH competency document;

- Part 2 Q-comp: Domain 1: Airway, Breathing, Ventilation and Oxygenation (15 competency groups in total)
- Part 3 Q-Comp: Domain 2: Circulation (27 competency groups in total)
- Part 4 Q-Comp consisted of: Domain 3: Acute Neurological Care (14 competency groups in total); Domain 4: Transport & Mobility (3 competency groups in total); Domain 5: Patient Centred Care: Team Working and Communications (20 competency groups in total)

Domain 1: Airway, Breathing, Ventilation and Oxygenation Competencies

The invitation to participants to complete the Q-Comp was sent via email to 941 GRNs who met the inclusion criteria. Initially 4.78% (n=45) opted out of the study. From the remaining 896 GRNs invited to participate, 10.93% (n=98) undertook the online part 2 Q-Comp. From this number, 59.1% (n=58) were fully completed. Disappointingly 40.8% (n=40) of questionnaires were excluded as there were large volumes of missing data.

Domain 1 Demographics

The nominal data concerning the demographics identified some of the characteristics of the sample and provided variables that could be used in comparative analysis with

other data. A total of 58 valid part 2 Q-Comp questionnaires were analysed from the participants.

age group.

The participants were asked to identify their age group from nine categories. The age categories ranged from 18-20 years of age through to 56 years and over. The sample included participants with age ranges 18-20 years through to 46-50 years. The greatest number of participants were in the 21-25 years age range (n=29). The age ranges of 51-55 years and 56 years and over, were not represented.

gender.

As part of the demographic data, the participants were asked to identify their gender. As found previously in the Q-Role, the vast majority of participants in the Q-Comp were female equating to 93.6% (n=55) with a small number of males 6.4% (n=3).

private or public hospital employment.

The next demographic variable that was recorded was type of employing hospital. The participants were given two categories to choose from: public hospital; or private hospital employers. Of the total, 82.8% (n=48) of participants were employed within the public hospital, 17.2% (n=10) within the private hospital.

area of speciality.

The participants were asked to identify their current area of specialty from a list of 10 options. All of the participants were employed within an acute care hospital and the specialty in which they were employed varied in acuity level. The most frequent area of specialty in which the GRNs were working was identified as the medical ward accounting for 39.7% (n=23) of participants. This specialty was followed by the surgical ward accounting for 25.9% (n=15), and Rehab and Emergency Department both with 8.6% (n=5) participants. The other six specialty areas accounted for just 25.8% (n=15) of the total number of participants. The specialty of Orthopaedics did not have participants in the study.

undergraduate nursing education.

The participants were asked to identify the university where they had completed their undergraduate nursing studies. They were again given a choice of six categories, five containing local Perth universities and an option of “other university”. Participants represented all of the Perth universities. The largest number educated at Edith Cowan University with 29.3% (n=17) of the sample. The next largest numbers were entered under “Other University” at 24.1% (n=14), UNDA with 20.7% (n=12), Curtin with 17.2% (n=10), UWA with 5.2% (n=2), and Murdoch with 3.4% (n=2),

Domain 1: Overview

Within the Q-Comp, the 15 Domain 1 competencies, were reviewed and rated. These competencies related to the assessment and management of the acutely ill patient in terms of airway, breathing, ventilation and oxygenation. Two different measures were undertaken within the questionnaire. The first rated the level of importance of the competency, and the second measured the level at which the participants were working in relation to the competencies.

The participants were asked to rate the importance of each of the competencies in managing the deteriorating ward patient in their current clinical role. Initially the ranked order frequency distributions were calculated for all of the responses. The process was done for each of the 15 individual competencies within Domain 1.

The second rating asked the participants to choose from a list of pre-determined competency elements, the ones that best described their current practice with the deteriorating ward patient. These competency elements were the COR level descriptors that would identify the participants level of working and complexity of the role undertaken. The ranked order frequency distributions were calculated for all of the responses using the SPSS 24 statistical software package (IBM, 2016). Measures of central tendencies were undertaken to calculate the mode of the COR level for each competency group.

The final stage of data analysis was to compare the ranked ordinal data with the demographic variables to investigate possible associations. As the number of participants in some of the demographic variables categories was low, the Fisher's exact test was used to calculate the level of independence.

Level of importance.

All groups were related to the processes involved in assessing and maintaining an airway, adequate breathing, ventilation and oxygenation of an acutely ill patient. The 15 competency groups, ranged in focus and complexity. The rank ordered frequency of distribution for participants' indicating agreement to the importance of competency was important was calculated (see Figure 22 below).

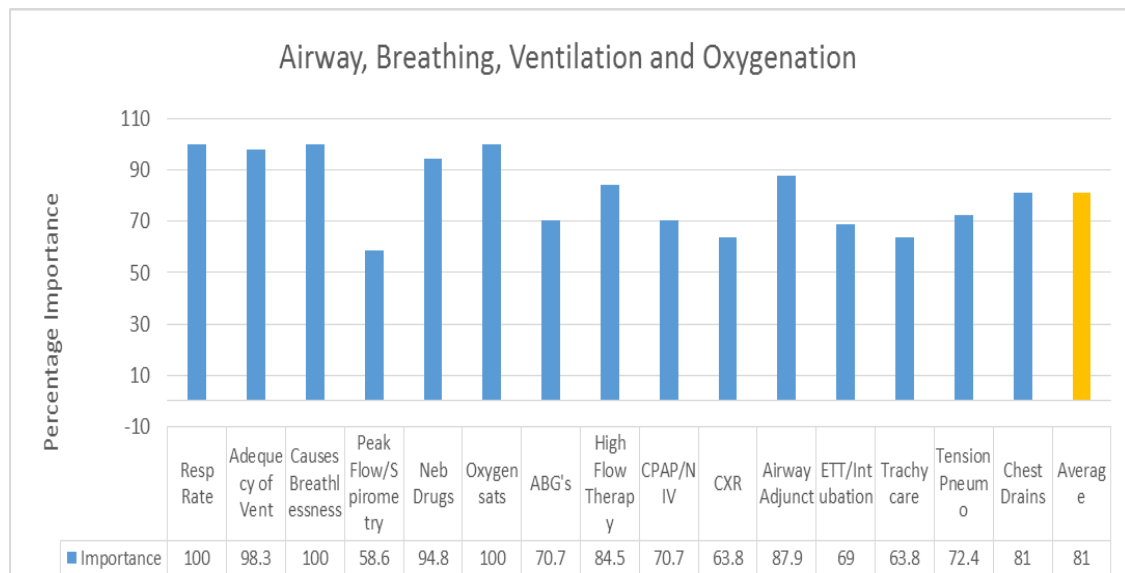


Figure 22. Domain 1: level of importance.

The level of agreement on importance for an individual competency group across the participants ranged from 58.6% (n=34) for the Peak Flow/Spirometry competency group to 100% (n=58) for the Respiratory Rate, the Common causes of Breathlessness & Oxygen Saturation competency groups.

Generally the participants identified the competency groups related to assessment and monitoring as being the most important. These included: respiratory rate; common causes of breathlessness; and oxygen saturation competencies. These were all rated as important by 100% (n=58) of the participants. This was followed closely by the assessment of adequacy of ventilation and oxygenation competency group, which was rated as important by 98.3% (n=57) of participants.

Some of the more complex assessment strategies were identified as less important. The peak flow & spirometry competencies scored the lowest level of importance for Domain 1, with only 58.6% (n=34) of participants agreeing it was an important competency for their clinical practice. The arterial blood gas sampling competency group was rated important by 70.7% (n=41) of participants.

Overall, the participants rated the intervention competencies as less important than the assessment and monitoring competencies. The intervention competencies included the administration of drugs via nebuliser rated important by 94.8% (n=55) and the use of airway adjuncts and suction rated important by 87.9% (n=51) of GRNs. Also within the intervention competencies were the high flow and controlled oxygen therapy which was rated important by 84.5% (n=49) and the continuous positive airway pressure and/or non-invasive pressure supported ventilation rated important by 70.7% (n=41) of participants.

Generally, the more complex management competencies within the domain were rated the least important. The groups ranged from chest drain rated by 81.0% (n=47) of participants as important, down to chest xray rated by only 63.8% (n=37) as an important competency for their clinical practice. Other complex management competencies included tension pneumothorax rated which was rated important by 72.4% (n=42), urgent endotracheal intubation rated important by 69.0% (n=40) and tracheostomy (spontaneous ventilation) rated important by 63.8% (n=37) of participants.

The average rating of importance of the Domain 1 competencies for managing the deteriorating patient was calculated at 81% (n=47).

Importance by area of speciality.

Following on from the ratings of individual competency groups, the measure of central tendency was calculated using the average rating of importance by area of speciality. This process measured the ratings given by participants working within the different speciality area to identify any differences (see Figure 23 below).

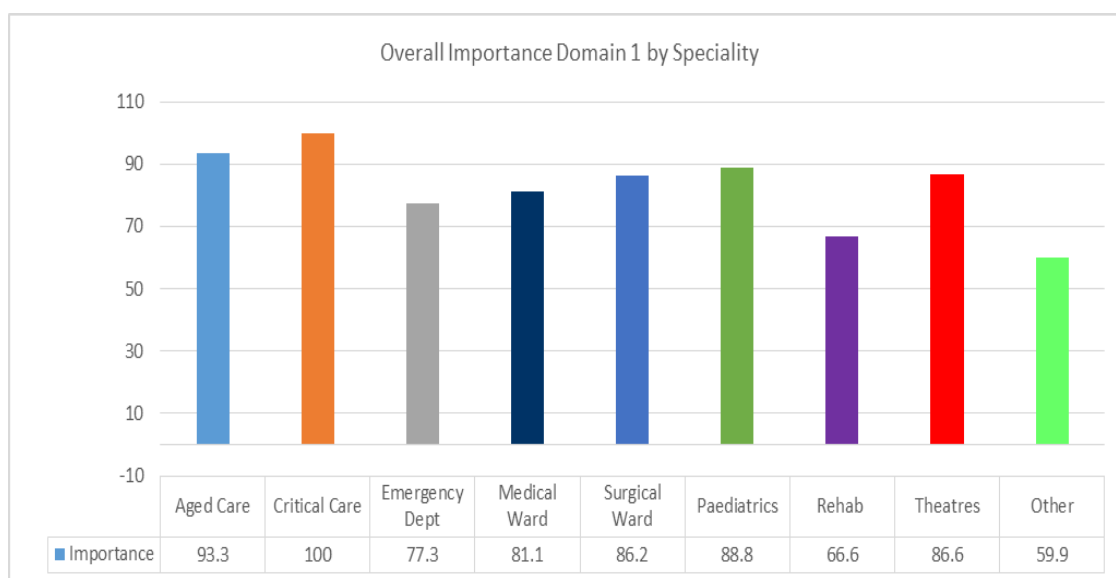


Figure 23. Domain 1: importance by area of speciality.

The area of speciality that rated the Domain 1 competencies with the highest level of importance to their clinical practice was the critical care speciality. The overall average rating of importance was 100% (n=1). The lowest level of importance was given by the “Other” speciality with an average rating of 59.9% (n=3) followed by Rehab with an average rating of 66.6% (n=5).

Competencies: Chain of response level.

Next the participants identified the COR level that they were currently working at for the competencies they rated as important. This data was gathered for all the 15 competency groups within Domain 1 (see Figure 24 below).

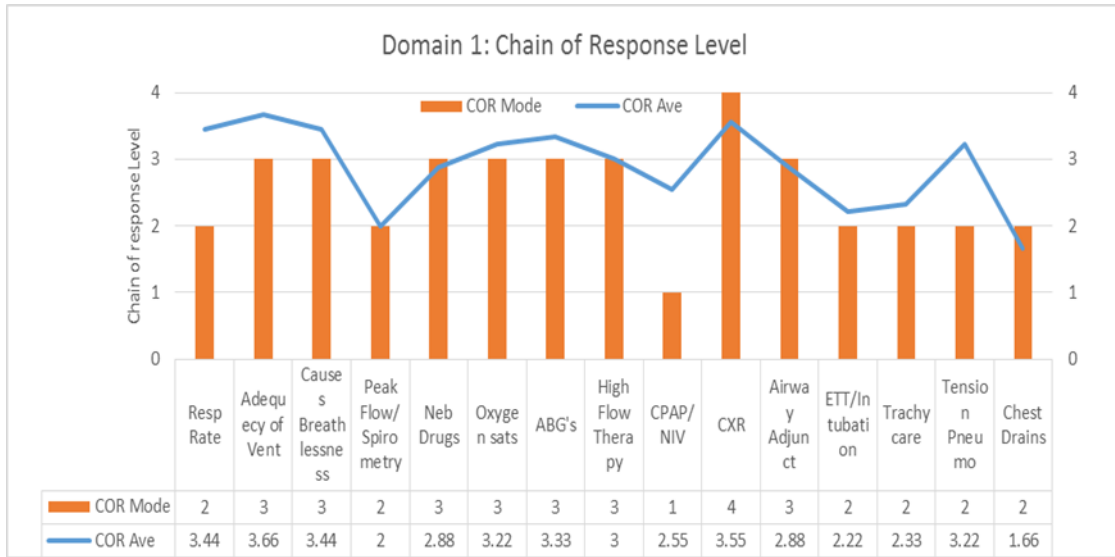


Figure 24. Domain 1 competencies: COR level.

From the data, ranked order frequency distributions were calculated for each of the competencies. A measures of central tendency using the mode was also calculated for each competency to identify the most commonly occurring COR level of working for each of the competencies.

The mode for the COR level of working ranged from a mode of level 1 (COR Level = Non-clinical supporter) for the continuous positive airway pressure (CPAP) and/or non-invasive pressure supported ventilation (NIV) competencies to a mode of level 4 (COR Level = Primary Responder) for chest Radiograph competency group.

The majority of competencies reviewed by the participants in Domain 1 fell into two main COR levels. The most commonly occurring level was level 3 (The Recogniser) with seven competencies being applied at this level. The second most common level of working was level 2 (The Recorder) with six competencies being applied at this level.

Only one competency group was undertaken at level 1 (Non-clinical supporter) and at level 4 (Primary Responder). None of the competency groups were undertaken at level 5 (Secondary Responder). Interestingly both assessment orientated

competencies and intervention were represented almost evenly in the COR levels of working.

A further measure of central tendency was calculated using the average measure of the COR levels of working by area of speciality. This was done to highlight any differences in the levels of working of GRNs between the speciality areas (see Figure 25 below).

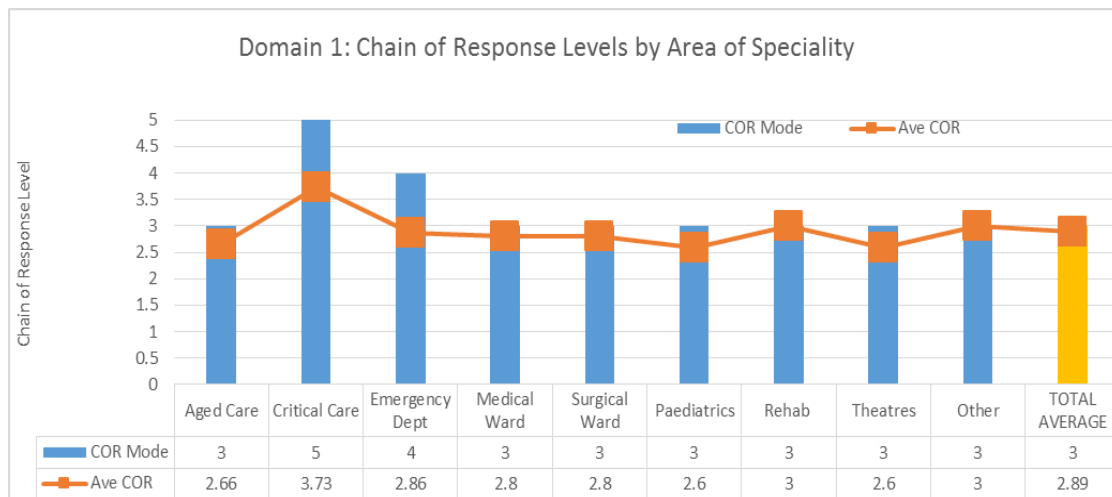


Figure 25. Domain 1: COR by area of speciality.

Notably, the area of speciality with the highest level of working in relation to the COR was the speciality of critical care with a mode of level 5 (Secondary Responder). The next highest speciality was the Emergency Department with a mode of level 4 (Primary Responder). Interestingly the remaining seven specialities all had the same level of working with level 3 (The Recogniser).

Fisher’s exact results.

The data collected from the 15, Domain 1 competencies was analysed for independence using the Fisher’s exact test in relation to the demographic variables and the ratings of importance and the COR levels of working.

The rating of the importance of competencies was compared with the five demographics variables. This rating of importance led to the calculation and analysis of 75 Fisher's exact P values. None of the P values returned less than 0.05, therefore, no significant association between the level of importance and the demographic variables was found.

The 15 competency groups were then analysed for independence in regards to the COR level of working and the five demographic variables. This led to the calculation and analysis of further 75 Fisher's exact test P values. From this 75 P values, five were identified as significant:

1. Difference by gender in the COR level of working in relation to the Respiratory Rate competency group (Fisher's exact test, P Value = 0.041).
2. Difference by private or public hospital employment in the COR level of working in relation to the Chest Radiograph competency group (Fisher's exact test, P Value = 0.003).
3. Difference by private or public hospital employment in the COR level of working in relation to the Use of airway adjuncts and suction competency group (Fisher's exact test, P Value = 0.035).
4. Difference by area of specialty in the COR level of working in relation to the High flow and controlled oxygen therapy competency group (Fisher's exact test, P Value = 0.035).
5. Difference by area of specialty in the COR level of working in relation to the Chest Drain competency group (Fisher's exact test, P Value = 0.048).

Domain 2: Circulation Competencies

In total the part 3 Q-Comp invitation was sent via email to 896 GRNs who met the inclusion criteria. Initially 2.45% (n=22) of graduate registered nurses opted out of the study. From the remaining 874 GRNs invited to participate, 7.89% (n=69) undertook the online Q-Comp. From the submitted part 3 Q-Comp, only 68.1% (n=47) were fully

completed. Approximately 31.8% (n=22) of questionnaires were submitted with large volumes of missing data and were excluded from the study findings.

Domain 2: Demographics

age group.

The participants were asked to identify their age group. These ranged from 18-20 years of age through to 56 years and over. The sample included participants with age ranges from 18-20 years through to 56 and over. The greatest number of participants were in the 21-25 years age range making up 46.8% (n=22) of participants. The age ranges of 51-55 years had no representation (n=0).

gender.

The participants were asked to identify their gender. As found previously in the other Domain, the vast majority of participants were female equating to 93.6% (n=44). A small number of males 6.4% (n=3) participated.

private or public hospital employment.

Again the GRNs were given two categories to choose from: public hospital; or private hospital employers. Of the total, 87.2% (n=41) of participants were employed within the public hospital, and 12.8% (n=6) within the private hospital.

area of speciality.

The GRNs were given the same ten categories of speciality to choose from. The most frequent area identified was the medical ward which accounted for 38.3% (n=18) of participants. This was followed by the surgical ward with 23.4% (n=11), and the Emergency Department with 10.6% (n=5) of participants. The speciality of Orthopaedics did not have any participants.

undergraduate nursing education.

The participants were asked to identify the university where they had completed their undergraduate nursing studies leading to registration. They were again given a choice

of six categories, five containing local Perth universities and an option of “other university”. There was representation of participants from all of the university groups. The largest number of participants were educated at Edith Cowan University with 31.9% (n=15) of the sample. This was followed the University of Notre Dame at 23.4% (n=11) and the Curtin University 21.3% (n=10). The other 3 options made up just 23.4% (n=11) of the sample.

Domain 2: Overview

Within the part 3 Q-Comp, Domain 2 with twenty seven ‘Circulation’ competencies were reviewed and rated. These competencies related to the assessment and management of the acutely ill patient in terms of cardiovascular function and perfusion. The participants were asked to rate the level of importance of the individual competencies to their current practice using a Likert scale. They were asked to identify the level at which they were working in relation to the competencies. This was achieved using the COR competency elements, selecting the ones that best described their current level of practice.

The ranked order frequency distributions were calculated for all of the participants across each competency within the Domain for the level of importance. Measures of central tendencies were calculated for the COR for each competency group.

The final step of statistical analysis compared the ranked ordinal data with the demographic variables for possible association. As previously discussed, the number of participants in a number of the demographic variables categories was low so the Fisher’s exact test was used to calculate the level of independence.

Level of importance.

The participants were asked to rate the level of importance of the Domain 2 competencies to current clinical practice as a graduate nurse. This was achieved using

the Likert scale responses to calculate the rank ordered frequency distribution of agreement (see Table 7 below).

Table 7

Domain 2: Competencies Level of Importance

Ranked Order	Domain 2 Circulation Competency Group	Level of Importance (% Agreement)
1.	Measurement of Heart Rate	100
2.	Measurement of Blood Pressure	100
3.	Fluid status and balance assessment	100
4.	Measurement of Temperature	100
5.	Care of peripheral venous access	100
6.	Collapsed/unresponsive patient	100
7.	ECG monitoring and recording of trace	97.9
8.	External chest compressions	97.9
9.	Urinary catheter	95.7
10.	Peripheral Venous Cannula	95.7
11.	Intravenous fluid maintenance and resuscitation	95.7
12.	IV infusions (giving sets and pumps)	95.7
13.	Emergency drugs	95.7
14.	Automated external defibrillator	95.7
15.	External haemorrhage	93.6
16.	Blood sampling equipment	93.6
17.	Administration of blood products including warming	93.6
18.	Alternatives to peripheral venous access	93.6
19.	Anaphylaxis	93.6
20.	Cardiac arrest rhythms (VF, pulseless VT, PEA and asystole)	93.6
21.	Assessment of cardiac output	91.5
22.	Central venous catheter	83
23.	Hypodermic needles and syringes	78.7
24.	Nasogastric tube	76.6
25.	Non-automated external defibrillation	74.5
26.	Arterial catheter	70.2
27.	Ultrasound machine	61.7

The number of rating of importance ranged from 100% (n=47) to 61.7% (n=29). On average, 91.4%.of GRNs rated Domain 2 competencies as important to their clinical role.

The Domain 2 competencies ranged in focus and complexity. They were related to assessment and monitoring of heart rate, cardiovascular function and circulatory status, along with intervention and emergency resuscitation of cardiovascular function in the acutely ill patient.

The participants identified the competencies related to assessment and monitoring of circulation and cardiovascular function as being the most important circulation competencies overall (see Figure 26 below).

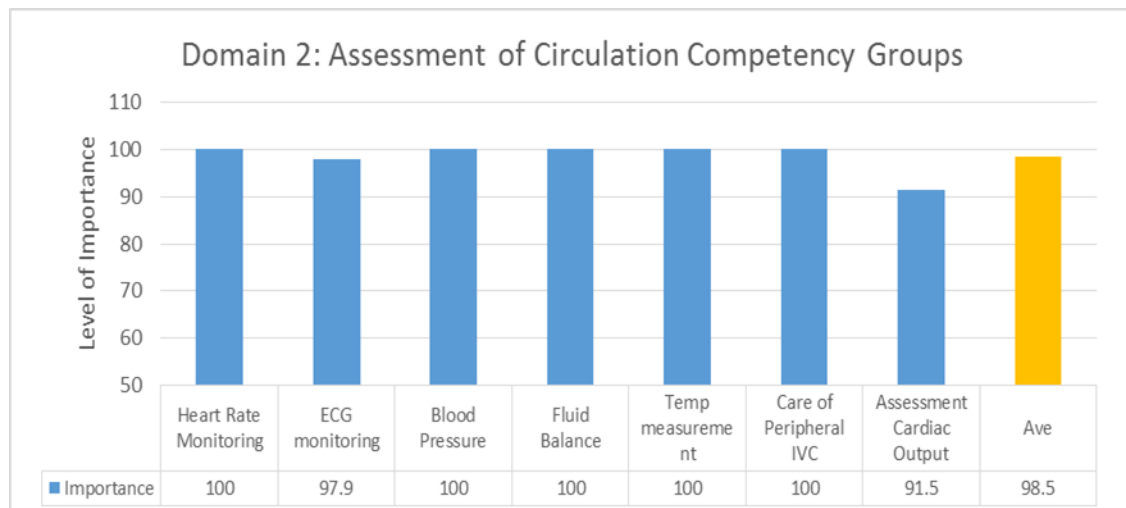


Figure 26. Domain 2: level of importance for assessment of circulation competencies.

Six of the top seven highest rating competencies within Domain 2 were concerned with assessment or monitoring. These included: measurement of heart rate; measurement of blood pressure; fluid status and balance assessment; measurement of temperature; care of peripheral venous access; and ECG monitoring. These were all rated as important by 100% (n=47) of participants. Interestingly, a number of more complex assessment competencies were still rated as important by the participants

including the assessment of cardiac output rated as important by 91.5% (n=43) of participants.

The participants rated the intervention competencies as less important than the assessment and monitoring competencies. However, the intervention group was still rated highly, with the majority of the intervention competencies rated as important by more than 90% of the participants. The emergency intervention competencies were rated as the most important (see Figure below).

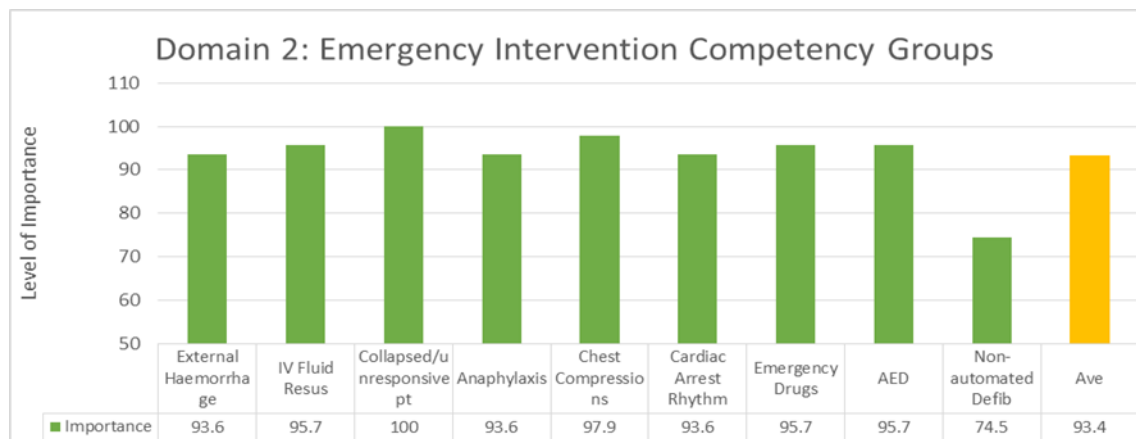


Figure 27. Domain 2: level of importance for emergency intervention competencies.

Participants noted that the collapsed unresponsive patient competency, related to recognising cardiac arrest and commencing CPR, was rated as important by 100% (n=47) of participants. This was closely followed by the external chest compressions competency rated as important by 97.9% (n=46) of participants. The emergency drugs and automated external defibrillator competencies were also rated as important by 95.7% (n=45) of participants.

Some of the non-emergency interventions also scored highly and included: urinary catheter; peripheral venous cannula; intravenous fluid maintenance and resuscitation; and IV infusions (giving sets and pumps) were all rated as important by 95.7% (n=45) of participants.

The more complex technical intervention and management competencies within the domain were rated the least important. These included the non-automated external defibrillation (manual defib) competency rated as important by 74.5% (n=35) of participants, the arterial catheter competency rated as important by 70.2% (n=33) of participants and the ultrasound machine competency rated as important by 61.7% (n=29) of participants (see Figure 28 below).

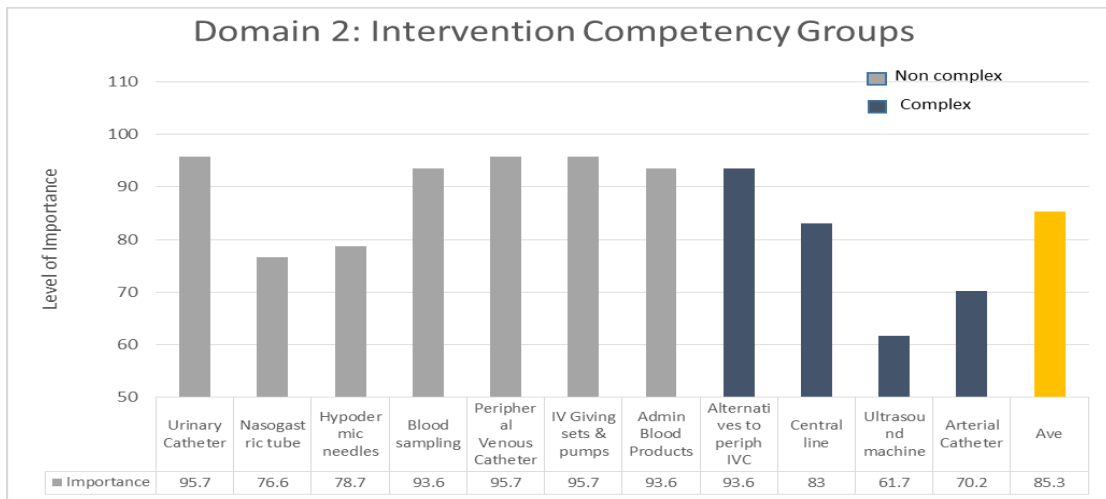


Figure 28. Domain 2: level of importance for complex intervention competencies.

The measure of central tendency was calculated using the average rating of importance, by area of speciality for the Domain 2 competencies. This enabled identification of any differences between the areas of speciality and the importance of the competencies for clinical practice (see figure 29 below).

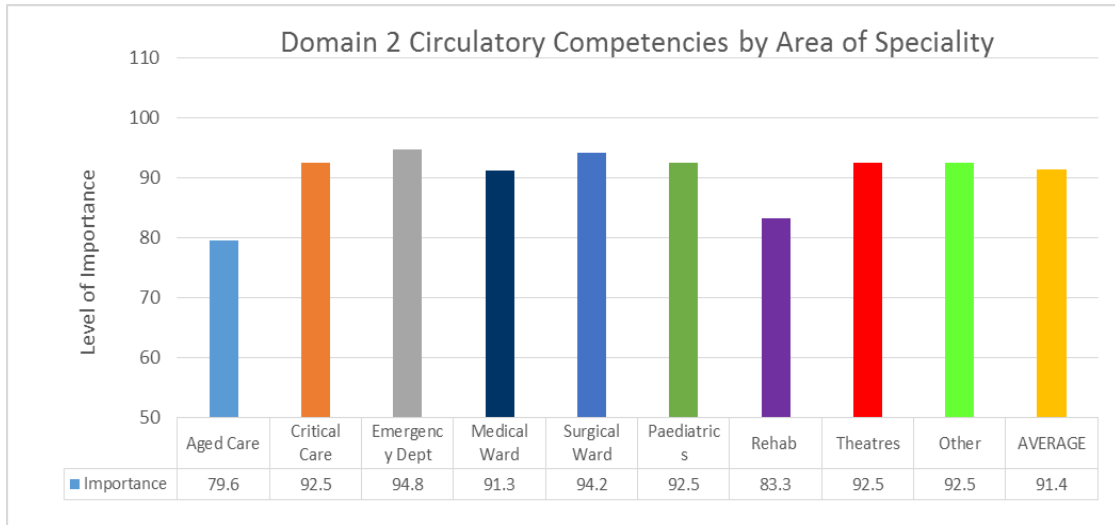


Figure 29. Domain 2: importance of circulation competencies by area of speciality

Generally the Domain 2 competencies were rated as important by the majority of participants, within all specialities. The area of speciality that rated the Circulatory competencies with the highest level of importance to their clinical practice was the Emergency Department with an average rating 94.8 %. The lowest level of importance was given by participants working in Aged Care, with an average of 79.6%.

Domain 2: Chain of response level.

Participants were asked to identify the COR level they currently worked at, in relation to the Circulatory competencies they noted as important. From the data, ranked order frequency distributions were calculated for each competency. A measures of central tendency using the mode of the responses was calculated for each competency to identify the most commonly occurring level of working for each of the competencies

The initial grouping of competencies related to the seven competency groups focused on the assessment of circulation. The COR level of working of the participants ranged from level 3 (The Recogniser) to level 4 (Primary Responder). The mode of the GRNs level of working for these competencies was at level 3 (The Recogniser) (see Figure 30 below).

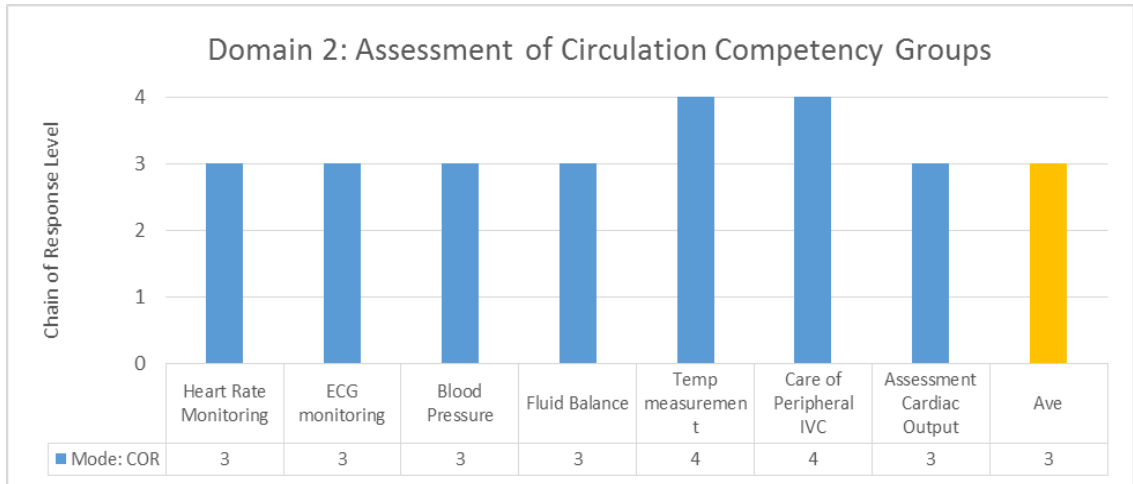


Figure 30. Domain 2: assessment of circulation COR level.

The next grouping of Domain 2 competencies related to the nine competency groups focusing on the emergency intervention. The COR level of working of the participants ranged from level 1 (Non-clinical supporter) to level 4 (Primary Responder). The competency group of anaphylaxis had the highest level of working at COR level 4. The mode of the participants COR level of working for these competencies was level 1 (Non-clinical supporter). This result contrasted sharply to the level of working identified in the assessment of circulation competencies (see figure 31).

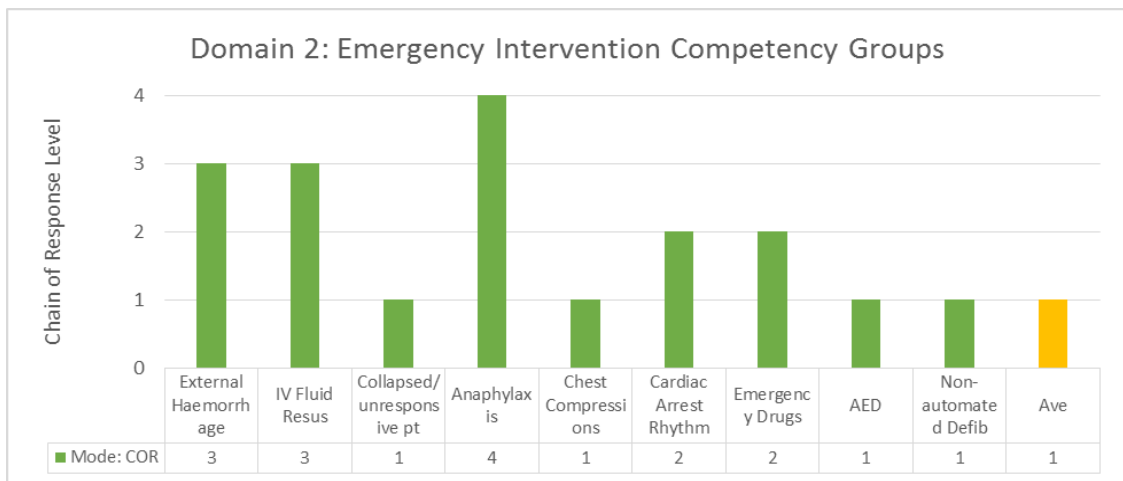


Figure 31. Domain 2: circulation emergency intervention competencies COR levels.

The final grouping of Domain 2 competencies focused on both complex and non-complex interventions for circulation (see Figure 32).

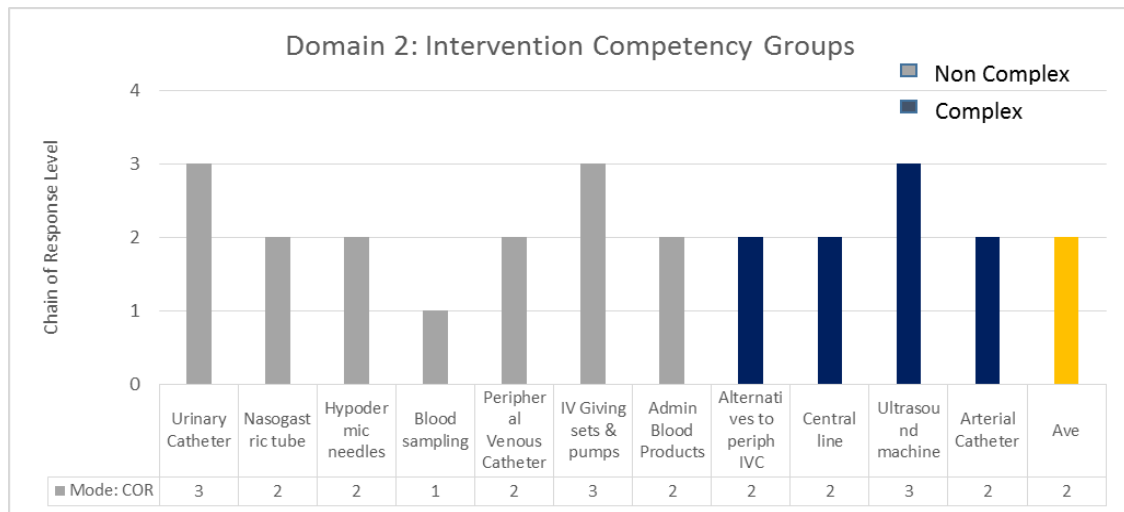


Figure 32. Domain 2: complex and non-complex circulation interventions COR levels.

The chain of response level of working of the participants ranged from level 1 (Non-clinical supporter) to level 3 (The Recogniser). The mode of the participants COR level of working for this competency grouping was level 2 (The Recorder).

The level of working for the Domain 2 Circulation competencies ranged from level 1 (Non-clinical supporter) through to level 4 (Primary Responder). The majority of competencies in Domain 2 fell into the COR level 3 (The Recogniser) with ten competencies being applied clinically at this level. The second most common level of working was level 2 (The Recorder) with nine competencies being applied clinically at this level.

Of the remaining seven competencies, five were undertaken at level 1 (Non-clinical supporter) with three competencies undertaken at level 4 (Primary Responder). None of the competencies were undertaken at level 5 (Secondary Responder). Interestingly, the assessment orientated competencies were most likely undertaken at the higher levels of working.

Chain of response: areas of speciality.

Following on from the individual competencies' COR levels, a further measure of central tendency was calculated using the average measure of the COR level of working by area of speciality. This was undertaken to highlight differences in the levels of working of GRNs between the speciality areas (see Figure 33).

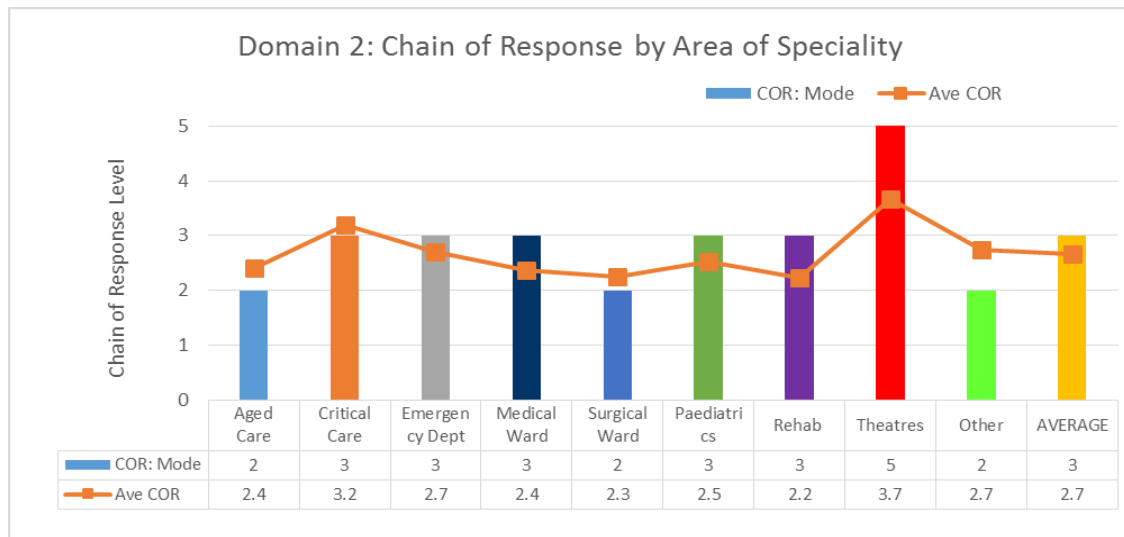


Figure 33. Domain 2: circulation COR levels by area of speciality.

Interestingly the area of speciality with the highest level of working in relation to the Domain 2 Circulation competencies was the speciality of theatres (perioperative) with a mode of level 5 (Secondary Responder). It must be noted, however that there was only one respondent (n=1) working in theatres.

From the remaining eight speciality areas, five areas indicated that they were working at level 3 (The Recogniser) and the remaining three areas were working at level 2 (The Recorder). The overall mode for the COR level of working across all speciality areas was level 3 (The Recogniser).

Fisher's exact results.

The data collected from the Domain 2 competencies was analysed for independence [using the Fisher's exact test] in relation to the demographic variables and the ratings of importance and COR levels of working. This rating of importance led to the calculation and analysis of 135 Fisher's exact P values. None of the P values returned less than 0.05, therefore, no significant association between the level of importance and the demographic variables was found.

The competencies were then analysed for independence in regards to the COR level of working and the five demographic variables. This led to the calculation and analysis of further 135 Fisher's exact test P values. From this 135 P values, nine were identified as significant:

1. Difference by age group in the COR level of working in relation to the Measurement of temperature competency group (Fisher's exact test, P Value = 0.021).
2. Difference by gender in the COR level of working in relation to the External haemorrhage competency group (Fisher's exact test, P Value = 0.048).
3. Difference by gender in the COR level of working in relation to the Administration of blood products including warming competency group (Fisher's exact test, P Value = 0.015).
4. Difference by area of specialty in the COR level of working in relation to the Blood sampling equipment competency group (Fisher's exact test, P Value = 0.044).
5. Difference by area of specialty in the COR level of working in relation to the Anaphylaxis competency group (Fisher's exact test, P Value = 0.024).
6. Difference by private or public hospital employment in the COR level of working in relation to the Central venous catheter competency group (Fisher's exact test, P Value = 0.035).
7. Difference by private or public hospital employment in the COR level of working in relation to the External chest compressions competency group (Fisher's exact test, P Value = 0.035).

8. Difference by private or public hospital employment in the COR level of working in relation to the Cardiac arrest rhythms (VF, pulseless VT, PEA and asystole) competency group (Fisher's exact test, P Value = 0.044).
9. Difference by private or public hospital employment in the COR level of working in relation to the Peripheral Venous Cannula competency group (Fisher's exact test, P Value = 0.002).

Domains 3, 4 & 5 Competencies

An invitation to participate in the Q-Comp was emailed to 874 GRNs. Initially 1.25% (n=11) GRNs opted out of the study. From the remaining 863 GRNs invited to participate, 5.52% (n=69) undertook part 4 of the Q-Comp. Approximately 81.2% (n=39) were fully completed. Around 18.8% (n=22) of questionnaires were missing data and had to be excluded from the study. A total of 39 Q-Comp questionnaires were analysed.

In part 4 of the Q-Comp questionnaire, three separate competency domains were rated. These domains included;

- Domain 3. Acute Neurological Care (14 competency groups in total)
- Domain 4. Transport & Mobility (3 competency groups in total)
- Domain 5. Patient Centred Care: Team Working and Communications (20 competency groups in total)

The participants were again asked to rate the level of importance of the individual competencies to their current clinical practice using a Likert scale. Next they were asked to identify the level at which they were working in relation to the competency groups from the pre-determined COR.

The level of importance ranked order frequency distributions were calculated across each of the individual competencies, within the three Domains. Measures of central tendencies were undertaken to calculate the mode of the COR for each

competencies to indicate the level at which the GRN were working. Finally the ranked ordinal data was analysed with the demographic variables for possible association. The Fisher's exact test was used to calculate the level of independence.

Demographics (Domains 3, 4 & 5)

age group.

The participants were asked to identify their age group. The sample included participants with age ranges from 18-20 years through to 46-50 years. The greatest number of participants were in the 21-25 years age range making up 38.5% (n=15) of participants. The age ranges of 51-55 years and 56 years & over were not represented.

gender.

The vast majority of participants were female equating to 94.9% (n=37). A small number of males 5.1% (n=2) participated in the questionnaire.

private or public hospital employment.

The participants were asked to identify their type of employer from the two categories: public hospital; or private hospital. Of the total, 94.9% (n=37) were employed within the public hospital. Approximately 5.1% (n=2) of participants worked within the private hospital.

area of speciality.

With regards to the area of speciality, the participants were given a choice of 10 categories. The most frequent area of speciality was the medical ward accounting for 41% (n=16) of participants. This was followed by the surgical ward accounting for 20.5% (n=8), and the Emergency Department with 12.8% (n=5) participants. The speciality areas of critical care, orthopaedics and theatres were not represented.

undergraduate nursing education.

Similar to the other questionnaires, a choice of six categories was provided to participants. The largest number were educated at Edith Cowan University with 30.8%

(n=12). This was followed by Curtin University 23.1% (n=9) and the University of Notre Dame with 20.5% (n=8). The remaining universities made up just 25.6% (n=10) of the sample.

Domain 3: Acute Neurological Care Overview

Within the part 4 Q-Comp, Domain 3 with 14 Acute Neurological Care competencies were reviewed and rated. The Domain 3 competencies related to assessment of neurological function, recognition of neurological decline and intervention or management of acute neurological changes including unconsciousness. The participants were asked to rate the level of importance of the individual competencies to their current practice using a Likert scale. Participants were asked to identify the level at which they were working in relation to the competencies. This was achieved using the COR competency elements, selecting the ones that best described their current level of practice.

The ranked order frequency distributions were calculated for all of the participants across each competency within the Domain for the level of importance. Measures of central tendencies were calculated for the COR for each competency group.

The final step of statistical analysis compared the ranked ordinal data with the demographic variables for possible association. As previously discussed, the number of participants in a number of the demographic variables categories was low so the Fisher's exact test was used to calculate the level of independence.

Level of importance.

The participants were asked to rate the level of importance of the Domain 3 competencies to their current clinical practice as a graduate nurse. A Likert scale was used to calculate the rank ordered frequency distribution of agreement (see Figure 34).

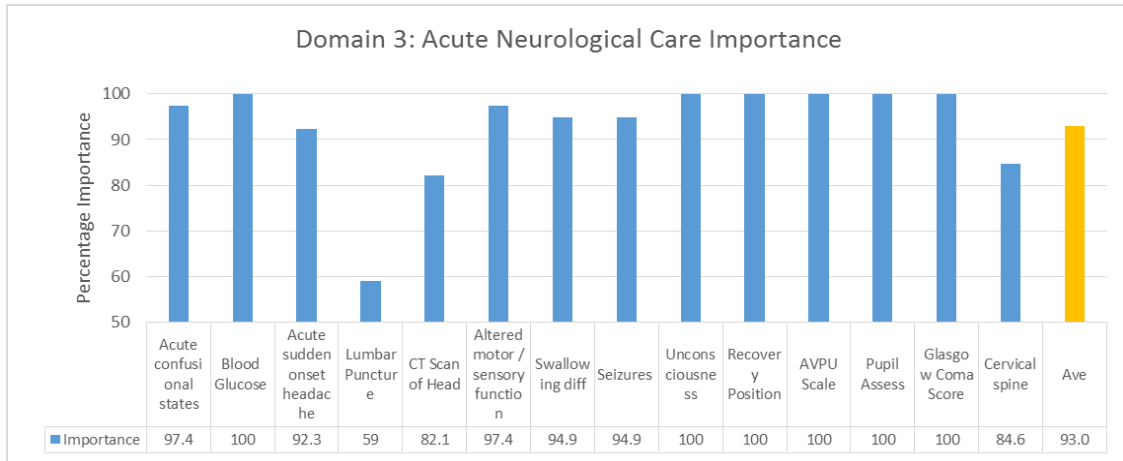


Figure 34. Domain 3: acute neurological care level of importance.

The rating of importance of Domain 3 ranged from 100% (n=39) to 59% (n=23) of participants, with an average of 93%. The competencies in this domain ranged in complexity and included elements of assessment and clinical intervention in the COR levels.

The participants identified the competencies concerning major elements of assessment and monitoring of neurological function as being the most important. Five of the top six competencies were rated as the most important had a major focus on patient assessment and monitoring. These competencies included: blood glucose measurement and interpretation; unconsciousness; AVPU scale; assessment of pupil and light reflex; and Glasgow Coma Score. All these were rated important by 100% (n=39) of the GRN participants.

The majority of complex competencies which involved elements of more intricate assessment and intervention, also rated as important. These competencies included: acute confusional states; and altered motor / sensory function competencies which were rated as important by 97.4% (n=38). The swallowing difficulties and seizures competencies were also rated as important by 94.9% (n=37) of participants. The competency rated as the least important was the lumbar puncture competency with 59% (n=23) identifying it as important to clinical practice.

Following the ratings of individual competencies, the measure of central tendency was calculated using the average rating of importance by area of speciality (see Figure 35).

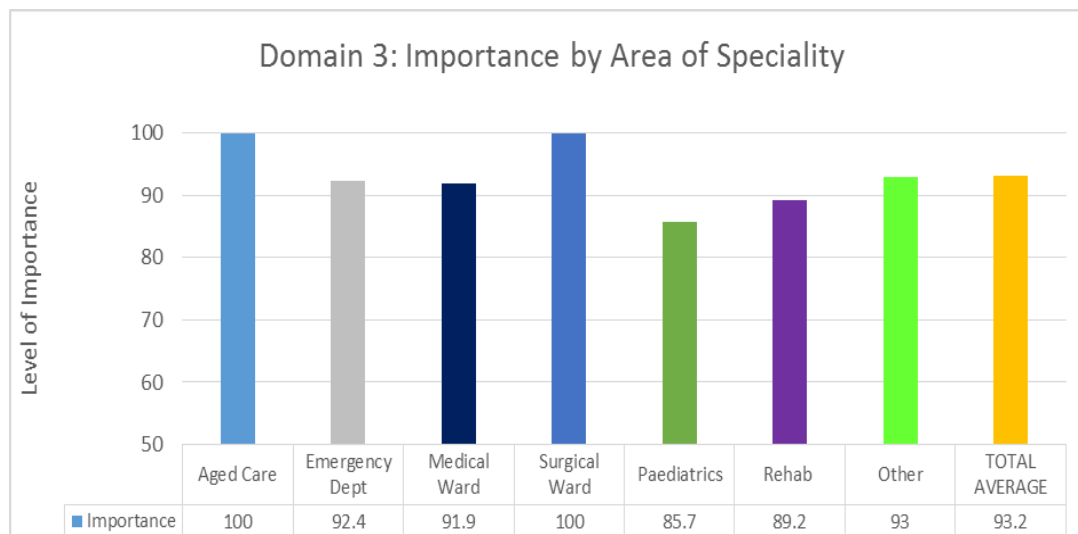


Figure 35. Domain 3: acute neurological care level of importance by area of specialty.

Generally, the majority of participants rated highly important, domain 3 competencies, within all specialties. Interestingly, the two specialties that rated the Domain 3 competencies with the highest level of importance were the Aged Care and the Surgical Ward specialties. Both averaged 100% of GRNs rating the competency groups as important. The lowest level of importance was given by the Paediatrics specialty, with an average of 85.7% rating the competencies as important.

Chain of response level.

Participants were asked to identify the COR level they currently worked at, in relation to the Acute Neurological Care competencies they noted as important. Ranked order frequency distributions were calculated for the responses for each competency group. A measures of central tendency using the mode of the responses was calculated for each competency to identify the most commonly occurring level of working for each of the competencies (see Figure 36).

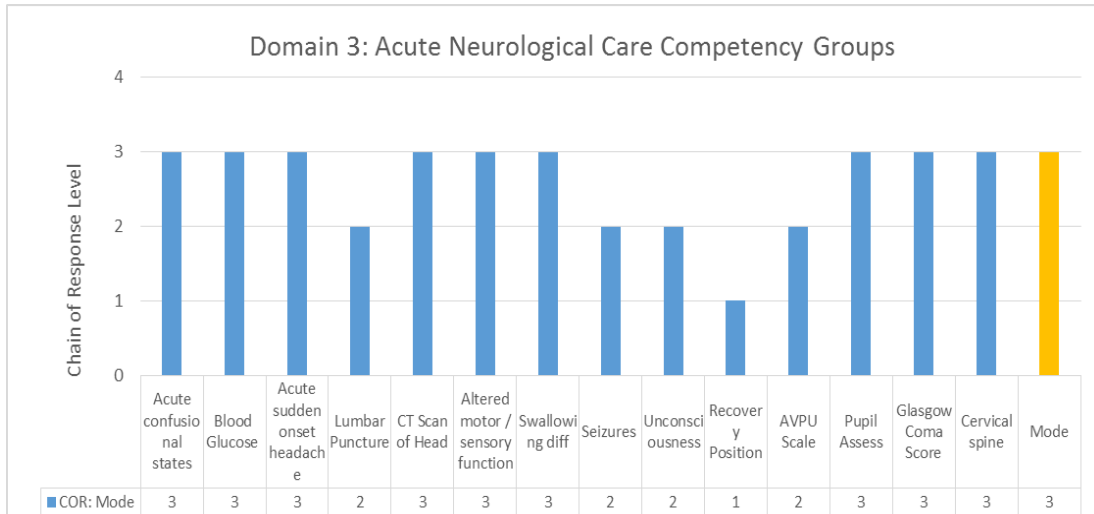


Figure 36. Domain 3: acute neurological care competencies COR levels.

The level of working for the Domain 3 competencies ranged from level 1 (Non-clinical supporter) through to level 3 (The Recogniser). The majority of competency groups rated by the participants fell into the level 3 (The Recogniser) with nine competency groups being applied clinically at this level.

Four competencies were identified as at level 2 (The Recorder). One competency groups was identified at level 1 (Non-clinical supporter). None of the Domain 3 competencies were practiced at level 4 (Primary Responder) or level 5 (Secondary Responder).

Chain of response by areas of speciality.

A further measure of central tendency was calculated using the average measure of the COR level by area of speciality. This was to highlight any differences in the levels of working between the specialty areas (see figure 37).

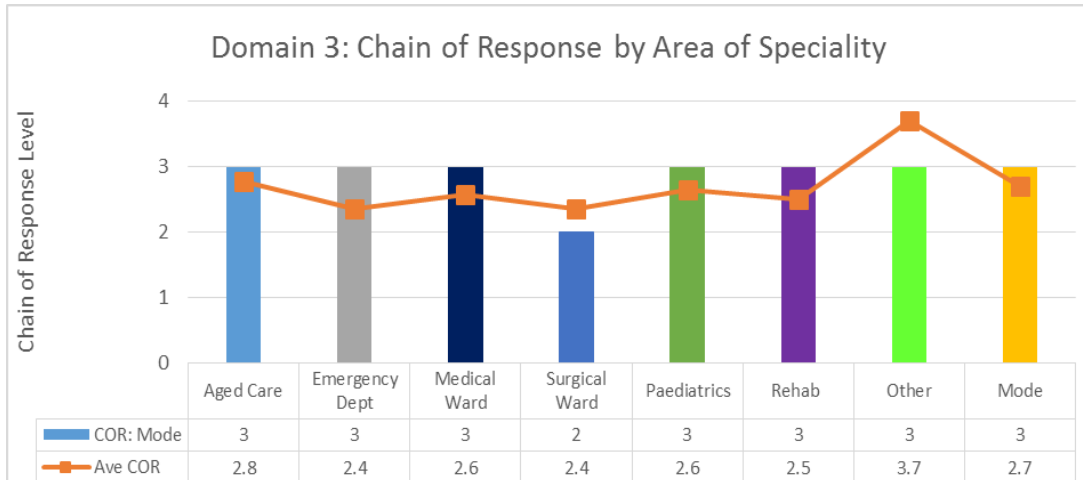


Figure 37. Domain 3: acute neurological care competencies COR levels by areas of speciality.

Interestingly all but one of the speciality areas were identified as working at level 3 (The Recogniser) for the Domain 3 competencies. Those participants working within the Surgical Ward area identified level 2 (The Recorder) as the most common level of working.

Fisher’s exact results.

The data collected from the Domain 3 competencies was analysed for independence using the Fisher’s exact test. The rating of the importance of competencies was compared with the demographics variables. This process led to the calculation and analysis of 70 Fisher’s exact tests with P values. One was identified as significant:

1. Difference by university of education in the level of importance given to the Lumbar Puncture competency group (Fisher’s exact test, P Value = 0.028).

Domain 3 competencies were analysed for independence in regards to the COR level of working. This led to the calculation and analysis of further 70 Fisher’s exact test P values, with two identified as significant:

1. Difference by private and public hospital employment in the COR level of working in relation to the Cervical spine protection competency group (Fisher's exact test, P Value = 0.022).
2. Difference by area of speciality in the COR level of working in relation to the Glasgow Coma Score competency group (Fisher's exact test, P Value = 0.03).

Domain 4: Transport and Mobility Overview

The Transport and Mobility Domain 4 was the smallest domain with three competencies included. The competencies focused upon the set up and use of equipment needed to manage the acutely ill patient. The participants were asked to rate the level of importance of the individual competencies to their current practice using a Likert scale. They were asked to identify the level at which they were working in relation to the competencies. This was achieved using the COR competency elements, selecting the ones that best described their current level of practice.

The ranked order frequency distributions were calculated for all of the participants across each competency within the Domain for the level of importance. Measures of central tendencies were calculated for the COR for each competency group.

The final step of statistical analysis compared the ranked ordinal data with the demographic variables for possible association. As previously discussed, the number of participants in a number of the demographic variables categories was low so the Fisher's exact test was used to calculate the level of independence.

Level of importance.

Participants were asked to rate the level of importance of the Domain 4 competencies to their current clinical practice. The three competency groups were rated by all participants (n=39) to provide an overall level of importance for each (see Figure 38).

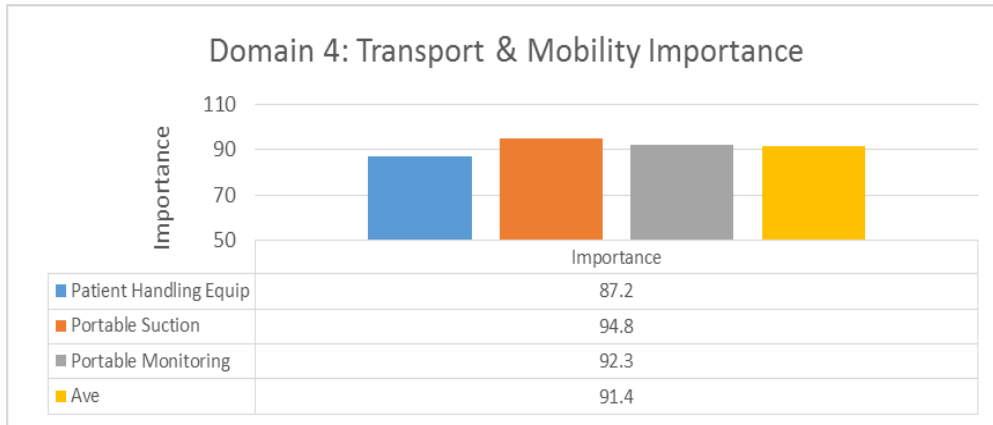


Figure 38. Domain 4: transport and mobility competencies level of importance.

The rating of importance ranged from 94.8% (n=37) for the portable suction competency to 87.2% (n=34) for the patient handling equipment & beds competency. The average level of importance across Domain 4 was 91.4%.

The measure of central tendency was calculated using the average rating of importance by area of speciality for the Domain 4 competencies (see Figure 39).

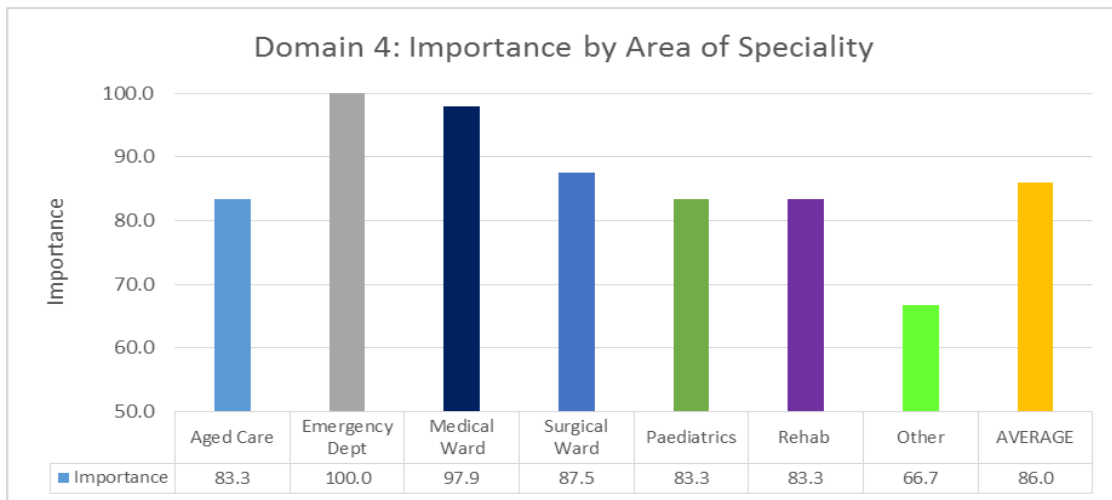


Figure 39. Domain 4: transport and mobility competencies level of importance by area of speciality.

Interestingly, the Domain 4 Transport and Mobility competencies had a difference in rating of importance by participants from the different speciality areas. The level of importance ranged from 100% of GRNs in the Emergency Department to 66.7% in the “Other” specialty category. On average, 86% of participants rated the Domain 4 competencies as important to their practice.

Chain of response level.

The participants were asked to identify the chain of response level they currently worked at in relation to the Domain 4 competencies. Ranked order frequency distributions were calculated for the responses for each of the competencies. A measure of central tendency using the mode was calculated for each competency, which provided the most commonly occurring level of working for each of the competency (see Figure 40).

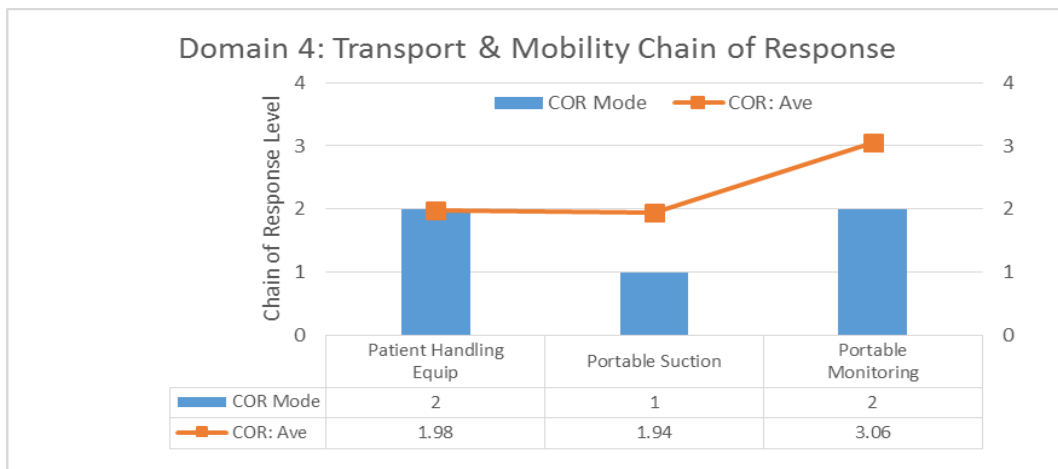


Figure 40. Domain 4: transport and mobility competencies COR levels

From the responses, the level of working for the Domain 4 competencies was narrow, ranging from level 1 (Non-clinical supporter) through to level 2 (The Recorder). None of the Domain 3 competency groups were practice at level 4 or above.

Chain of response by areas of speciality.

A measure of central tendency was calculated using the mode of the COR levels from each area of speciality (see figure 41 below).

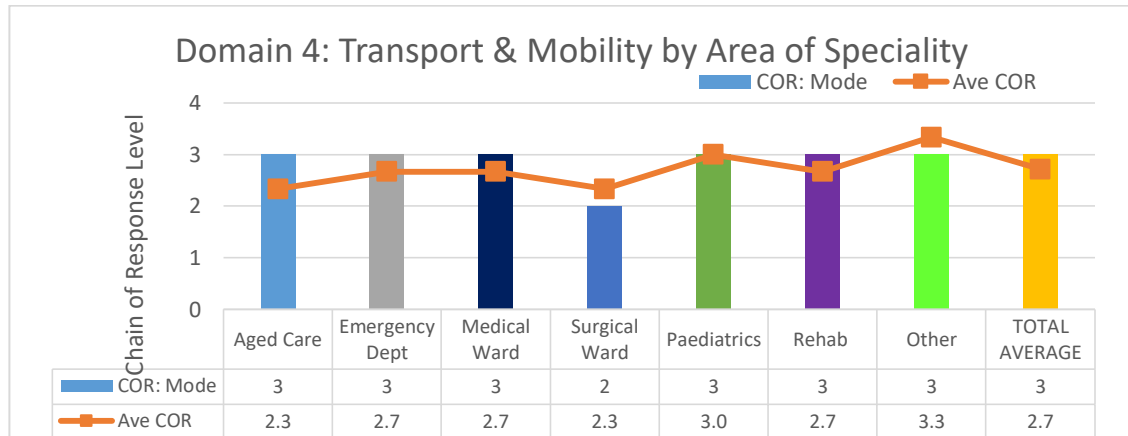


Figure 41. Domain 4: transport and mobility competencies COR by areas of speciality.

Interestingly all but one of the speciality areas were identified as working at level 3 (The Recogniser). Those participants working with the surgical ward area identified level 2 (The Recorder) as the most common level of working.

Fisher's exact results.

The data collected from the Domain 4 competencies was analysed for independence using the Fisher's exact test in relation to the demographic variables and the ratings of importance and COR levels of working. This led to the calculation and analysis of 15 Fisher's exact test P values. None of the P values returned less than 0.05, therefore, no significant association between the level of importance and the demographic variables was found.

The competencies were then analysed for independence in regards to the COR level of working and the demographic variables. This led to the calculation and analysis of further 15 Fisher's exact test P values. From this 15 P values, one was identified as significant:

1. Difference by area of speciality in the COR level of working in relation to the Patient handling equipment and beds competency group (Fisher's exact test, P Value = 0.011).

Domain 5: Communication; Team working; and Patient Safety Overview

Domain 5 was the final domain of the Q-Comp. There were 20 Domain 5 competencies subdivided into three parts: Communication; Team working; and Patient Safety. The participants were asked to rate the level of importance of the individual competencies to their current practice using a Likert scale. They were asked to identify the level at which they were working at relation to the competencies. This was achieved using the COR competency elements, selecting the ones that best described their current level of practice.

The ranked order frequency distributions were calculated for all of the participants across each competency within the Domain for the level of importance. Measures of central tendencies were calculated for the COR for each competency group.

The final step of statistical analysis compared the ranked ordinal data with the demographic variables for possible association. As previously discussed, the number of participants in a number of the demographic variables categories was low so the Fisher's exact test was used to calculate the level of independence.

Level of importance.

Participants were asked to rate the level of importance of these competencies using a Likert scale. Communication was the objective of the first part of Domain 5 and contained eight competency groups. The focus of these competencies included recording information clearly, communication of management plans, raising concerns when a patient is not improving, breaking bad news and end of life care (see Figure 42).

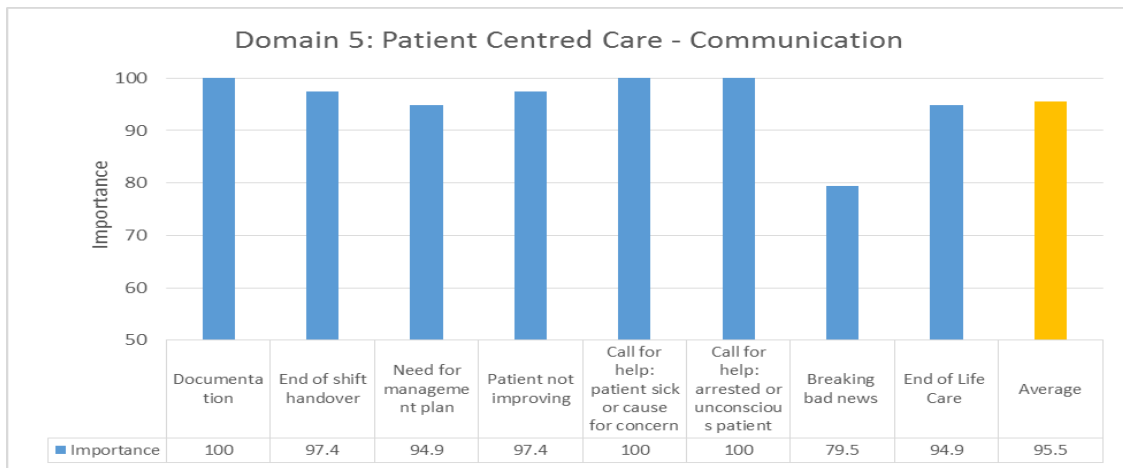


Figure 42. Domain 5: communication competencies level of importance.

The rating of importance for the eight competency groups ranged from 100% (n=39) to 79.5% (n=31). On average 95.5% of participants indicated that the eight communication competencies were important to their clinical practice.

From the eight competency groups, three were rated important by 100% (n=39) of the participants. These included: documentation; call for help patient sick or cause for concern; and call for help arrested or unconscious patient competencies. The breaking bad news competency, was rated least important with 79.5% of participants indicating this was important in their current practice.

Team working was the objective of the second part, with six competency groups directed towards: personal accountability; decision making; leadership; team communication; and review of the acutely ill patient (see Figure 43).

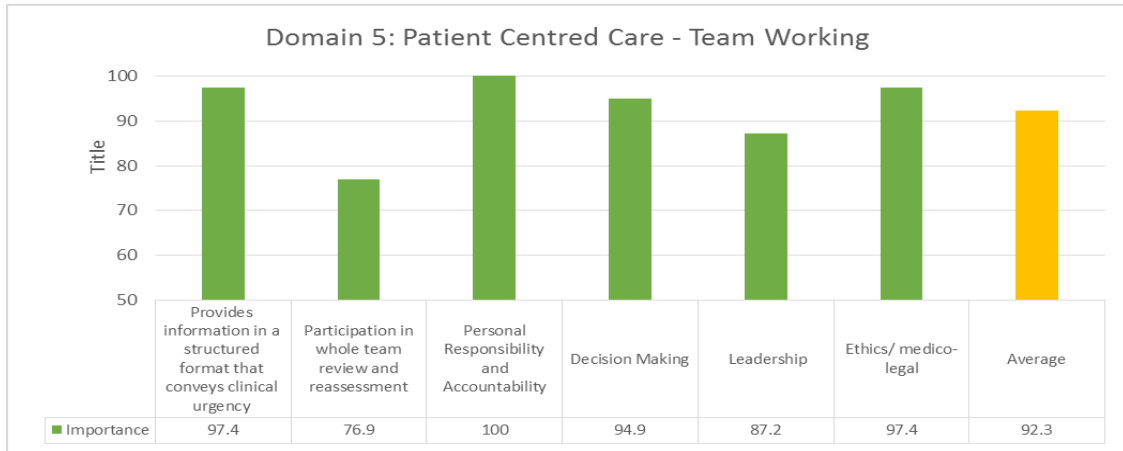


Figure 43. Domain 5: team working competencies level of importance.

The rating of importance ranged from 100% (n=39) to 76.9% (n=30). On average, the team working competencies were viewed as important by 92.3% of participants.

From the six team work competencies, the personal responsibility and accountability competency was rated important by 100% (n=39) of participants. This was closely followed by the ethics/medico-legal competency with 97.5% (n=38) of participants. Interestingly participants placed a higher importance on scope of practice and hospital policies than they did on decision making and leadership in managing the acutely ill.

Patient Safety was the main focus of the final part of Domain 5. There were six competencies directed towards: equipment safety; patient handling; reducing risk; and detecting infection in the acutely ill patient (see Figure 44).

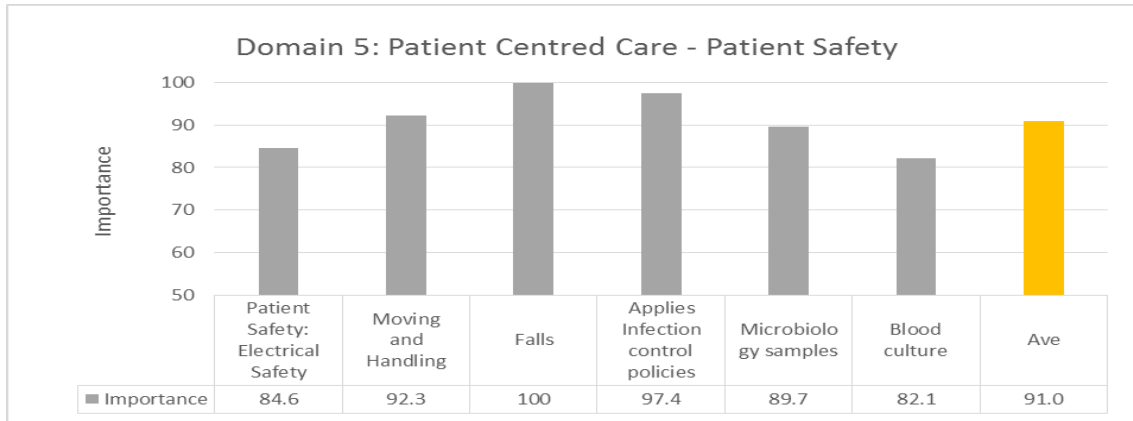


Figure 44. Domain 5: patient safety competencies level of importance.

The rating of importance by participants ranged from 100% (n=39) to 82.1% (n=32). The average rating for the patient safety competencies was high, with 91% of GRN participants rating the competencies as important.

Interestingly, the highest rated competencies within patient safety was related to assessment: the falls competency. This was rated as important by 100% of the GRNs. It was closely followed by applies infection control policies competency, rated important by 97.5% (n=38) of participants. The procedure, blood cultures, was rated the least important by 82.1% (n=32) of participants.

Following the ratings of individual competency groups, the measure of central tendency was calculated using the average rating of importance by area of specialty (see Figure 45).

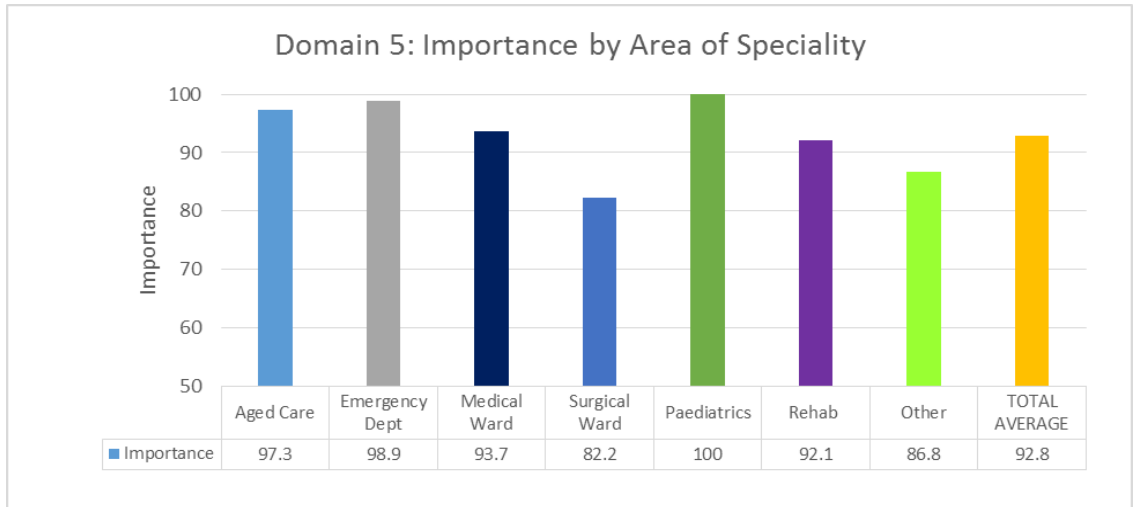


Figure 45. Domain 5: overall level of importance by area of speciality.

Generally, the Domain 5 Patient Centred Care competencies, were rated as important by the majority of participants within all specialties. Communication focused competencies had the highest overall rating of importance with 95.5% of participants agreeing. The Team working competencies were rated important by 92.3% of participants. The Patient Safety competency groups were rated important by 91% of participants.

The specialty that rated the highest level of importance was the paediatrics area with 100% of participants. This was followed closely by the Emergency Department 98.9% and Aged Care 97.3%. The lowest level of importance was in the Surgical Ward participants, with an average of 82.2% rating the competencies as important.

Chain of response level.

The COR level of working, in relation to the Domain 5 competency groups, was measured. Ranked order frequency distributions were calculated for the responses for each competency group. A measure of central tendency using the mode of the responses was calculated for each competency. This provided the most commonly occurring level of working for each of the competencies (see Table 8).

Table 8

Domain 5: Competencies Chain of Response Levels

Domain 5 Competency Groups	Chain of Response MODE	Chain of Response AVERAGE
Part 1: Communication		
Documentation	2	2.6
End of shift handover	3	3
Need for management plan	3	3
Patient not improving	3	3.1
Call for help: patient sick or cause for concern	3	3
Call for help: arrested or unconscious patient	1	2.3
Breaking bad news	2	2.7
End of Life Care	5	4
Part 2: Team Working		
Provides information in a structured format that conveys clinical urgency	2	2.3
Participation in whole team review and reassessment	2	2.9
Personal Responsibility and Accountability	5	4.4
Decision Making	3	3.3
Leadership	3	3.9
Ethics/ medico-legal	3	2.9
Part 3: Patient Safety		
Patient Safety: Electrical Safety	1	2.4
Moving and Handling	1	2
Falls	2	2.3
Applies Infection control policies	2	1.7
Microbiology samples	1	1.9
Blood culture	3	2.6
OVERALL DOMAIN 5 Competencies	3	2.8

From the participants responses, the COR level of working for the Domain 5 competencies ranged from level 1 (Non-clinical supporter) through to level 5 (Secondary Responder). The mode for all Domain 5 competencies was COR level 3 (The Recogniser).

Chain of response by areas of speciality.

A measure of central tendency was calculated using the mode of the COR from each area of speciality. To identify differences in the speciality areas more clearly, the Domain 5 competencies were again subdivided into three parts; Communication; Team working; and Patient Safety (see Figure 46).

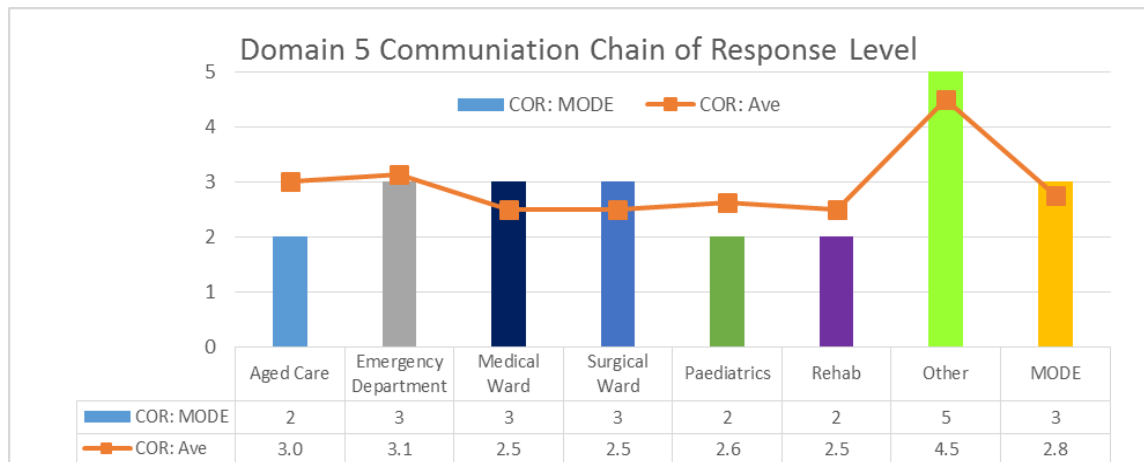


Figure 46. Domain 5: communication competencies COR levels by area of speciality.

For the Communication competencies, the majority of participants in the specialties were working at level 3 (The Recogniser). The exception was the “Other” specialty category where GRNs identified as working at level 5 (Secondary Responder).

Overall within Domain 5, the participants worked at the highest COR levels in relation to the Team Working competencies. Three of the specialty areas: Aged Care; Rehab; and “Other”, they identified as working at level 5 (Secondary Responder) for the Team working competencies. The Surgical ward specialty identified working at level 2 (The Recorder) in relation to team working (see Figure 47).

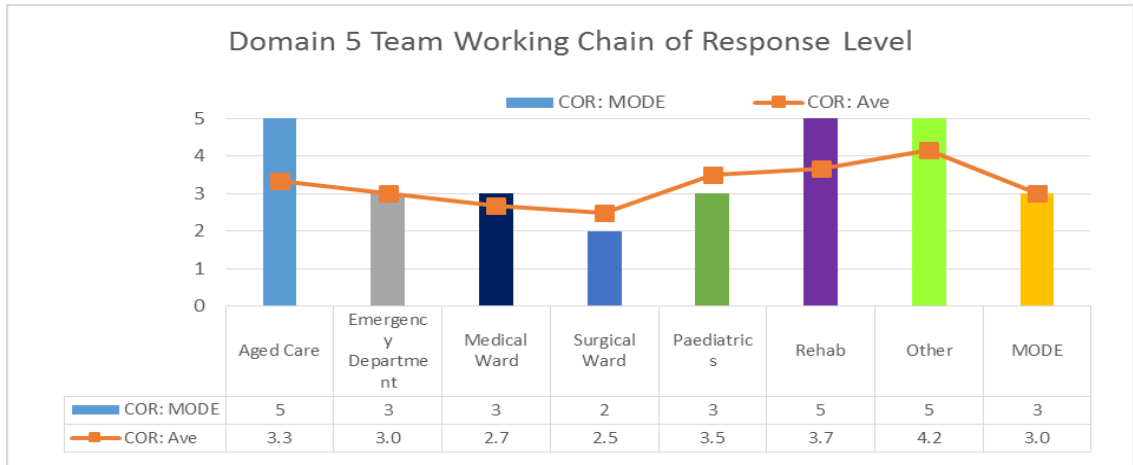


Figure 47. Domain 5: team working competencies COR levels by area of speciality.

Within the third part of Domain 5, Patient Safety competencies appeared to have the lowest level of working (see Figure 48).

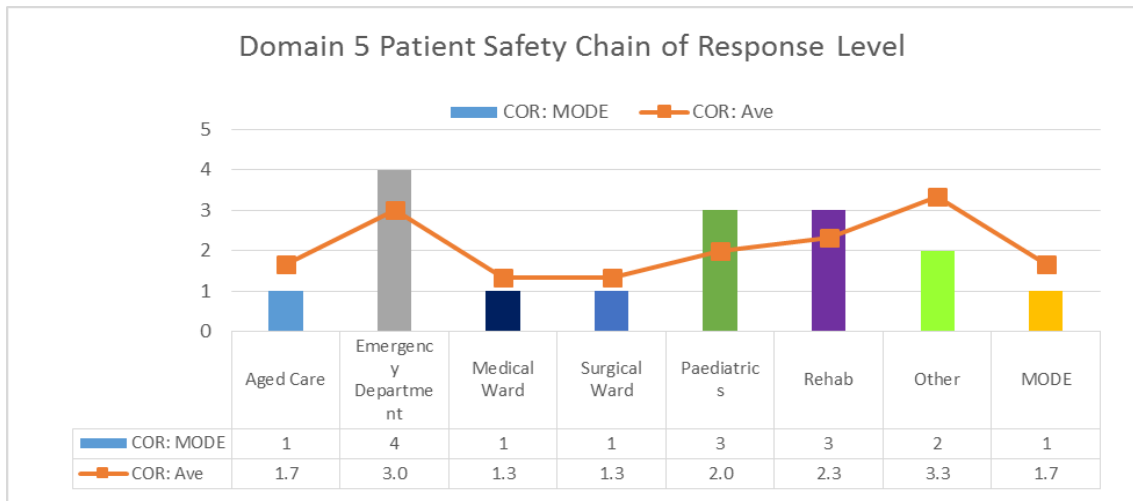


Figure 48. Domain 5: patient safety competencies COR levels by area of speciality.

Interestingly the mode across the specialty areas for the Patient Safety competencies was level 1 (Non-clinical supporter). Participants working within the speciality of the Emergency Department worked at the highest level in relation to patient safety, identifying level 4 (Primary Responder). Three specialties, Aged Care,

Medical Ward and Surgical Ward identified working at level 1 (Non-clinical supporter) for patient safety.

Fisher's exact results.

The data collected from the Domain 5 competencies was analysed for independence using the Fisher's exact test. The rating of the importance of competencies was compared with the demographics variables. This process led to the calculation and analysis of 100 Fisher's exact test P values. From this 100 P values, one was identified as significant:

1. Difference by area of specialty in the level of importance given to the Participation in whole team review and reassessment competency group (Fisher's exact test, P Value = 0.013).

Domain 5 competencies were analysed for independence in regards to the COR level of working. This led to the calculation and analysis of a further 100 Fisher's exact test P values, with three identified as significant:

1. Difference by age group in the COR level of working in relation to the End of shift handover competency (Fisher's exact test, P Value = 0.007).
2. Difference by private or public hospital employment in the COR level of working in relation to the Personal Responsibility and Accountability competency (Fisher's exact test, P Value = 0.049).
3. Difference by area of specialty in the COR level of working in relation to the Need for management plan competency (Fisher's exact test, P Value = 0.008).

Summary: Q-Comp Findings

The findings from all of the five competency domains were combined to provide a summary of the average levels of importance for the competency domains across all speciality areas (see Figure 49).

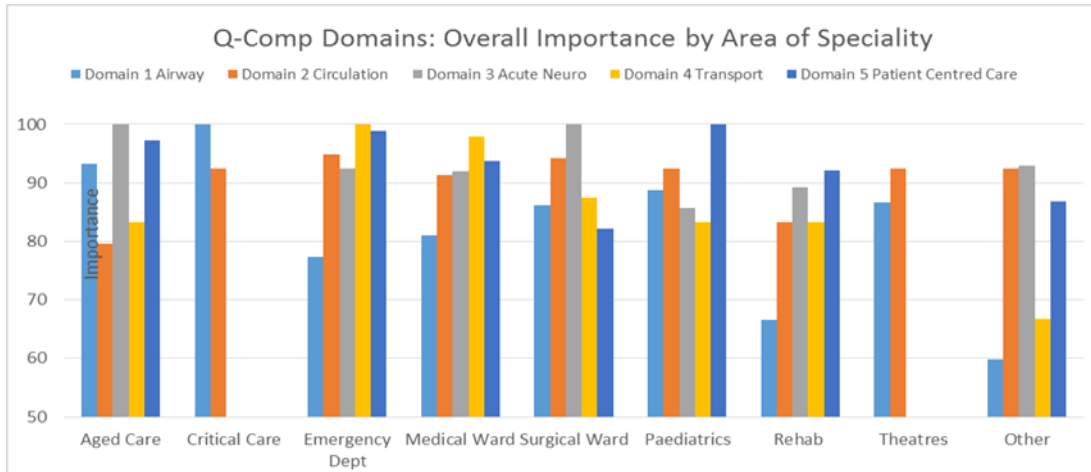


Figure 49. Q-Comp overall importance of competency domains by area of speciality.

The findings from all of the five competency domains were combined to provide a summary of the average COR level of working for each competency domain across all speciality areas (see Figure 50).

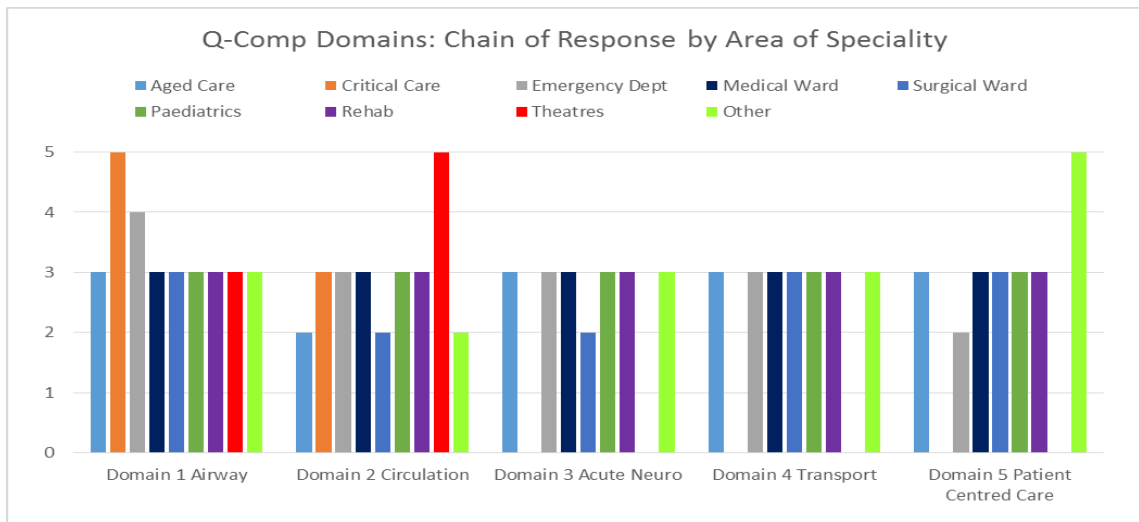


Figure 50. Q-Comp overall COR levels by area of speciality.

It was apparent from combining the average ratings that there were high levels of consistency across the participant group in both ratings of importance for competency domains and COR levels of working.

The overall ratings of importance and COR level of working by all GRNs across the five acute care competency domains again demonstrate a high level of consistency (see Figure 51).

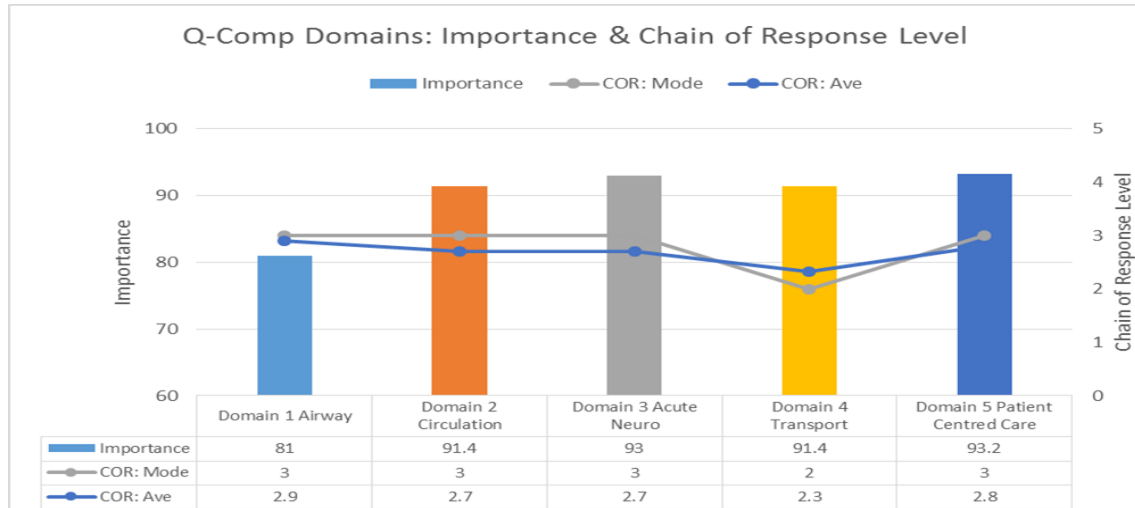


Figure 51. Overall importance and COR level across competency domains.

The majority of participants rated as ‘important’ managing the deteriorating ward patient in all of the five competency domains. The COR level of working also demonstrated consistency, with the majority of GRNs working at COR level 3 “The Recogniser” across four out of the five competency domains.

Summary

This chapter presented the findings from Phase 2 of the study. Initially the Q-Role findings were presented, including the demographics of the participants followed by the eight core theme findings. This was followed by the findings of the Q-Comp. The key findings related to the acute care competencies, their importance and the level of working of the participants. Finally a summary of the Q-Comp domain data was provided including the overall importance of the competencies and level of work.

Chapter 7

Qualitative Data Collection and Analysis

Introduction

The previous chapter presented the findings from the quantitative phase two of the study. In an explanatory sequential approach to mixed method methods the quantitative phase precedes the qualitative phase. Thus, this next part of the study, phase three, uses a qualitative stance. It will provide further insight into the factors influencing the role and competencies of the GRN in managing the deteriorating ward patient. The chapter discusses the recruitment of participants for focus group interviews, which were aimed at exploring in more detail findings from phase two. The chapter will highlight some the participants' statements in evidence of the findings.

Data collection methods

Permission & consent.

Gaining permission to recruit participants for the focus group interviews was complex and time consuming. Initially an approach was made to the research department of both hospitals to ascertain the process for gaining permission to conduct the research. Following this communication, an official application was made to the required Human Research Ethics Committees (HREC) from both of the hospitals to be used. Several briefing meetings took place in the research department for both hospitals. The aims of the study, along with the confidentiality and consent arrangements, were discussed.

The HREC approvals were received from both hospitals, which allowed the recruitment of potential participants to be to take place. This process involved contacting the Staff Development Nurse (SDN) from both hospitals. These nurses organised the graduate education programs. Information regarding the study, the objectives, together with the HREC permission was provided. It was agreed that focus groups could be undertaken at the end of pre-planned study days for the GRNs. In total three focus groups were planned; two were at the same private hospital and one at a public hospital. It was felt that this number of focus groups would be sufficient to provide a saturation point in data, where no new ideas should emerge (Bowen, 2008; Polit & Beck, 2012).

Several weeks prior to conducting the focus groups, the GRNs within the hospitals were given written information by the SDN outlining the study, the aims of the focus groups, confidentiality and anonymity arrangements, and a consent form (see Appendix 10). The GRNs returned their consent form to the SDN within a seven day period. A list of participants was then compiled by the SDNs and forward to the researcher.

Population & sample.

The qualitative phase of the study focused on gathering data from participants working in an acute hospital setting within the Perth metropolitan area and enrolled in the GradConnect program. A homogenous purposive sample of GRNs was recruited for the focus group interviews. This technique was advocated on the basis that those chosen can provide the necessary data for analysis and provide the best answers to the research questions (Parahoo, 1997). Purposeful sampling is used regularly in qualitative research for the selection of information-rich cases related to the phenomenon of interest (Palinkas et al., 2015).

In total, there were three focus group interviews undertaken in the study, with 21 GRN participants. The first focus group interview was conducted in the private hospital setting and had seven (n=7) participants. The second was conducted in the public hospital setting and had nine (n=9) participants. The third was conducted in the

private hospital setting and had five (n=5) participants. There was some consensus that numbers of participants should be between 4 and 12 to ensure workability of the group (Liamputtong, 2011; Subramony et al., 2002).

The GRNs recruited represented both the public and private hospital setting. There was a mixture of age range and gender within the focus group interviews. The GRNs worked in a variety of clinical specialties within the hospitals including: medical wards; surgical wards; rehab units; oncology units; mental health wards; and theatres. All GRNs were currently employed and enrolled in the first year of the GradConnect program.

Context.

The focus groups were undertaken within two acute care hospital settings within the Perth Metropolitan area. The first hospital was a 578 bed private hospital that provided a number of services including medical, surgical, obstetrics, gynaecology, rehab along with emergency admission capacity and a critical care unit. The hospital was part of the GradConnect program offering places to GRNs following completion of their undergraduate studies.

The second hospital was a 290 bed public hospital that provided numerous services including an emergency department, elective and emergency surgery, general medicine, mental health, obstetrics, gynaecology, rehab and a critical care unit. The hospital was also part of the GradConnect program, offering places to GRNs following completion of their undergraduate studies.

Focus group interviews.

The primary goal of focus groups was to utilise the interaction of data, to increase the depth of enquiry and uncover aspects of the phenomenon that would otherwise be less accessible (Freeman, O'Dell, & Meola, 2001; van Eyk and Baum, 2003; Lambert and Loiselle, 2008). Using this method of data collection, constructs could be expanded and the factors influencing GRNs role and competencies in managing the deteriorating patient could be explored in more depth. The focus groups were designed to obtain

GRN perceptions of the subject area through discussion, and in a setting that was non-threatening (Burns & Grove, 2002; Liamputtong, 2011). The main purpose of using focus group interviews was to draw upon the participants' experiences and reactions in a way that was not be feasible using the questionnaires (Liamputtong, 2011).

Focus groups are viewed as particularly useful when there needs to be a degree of consensus on a given topic (Morgan, 1997). The group is 'focused' as a collective by debating, talking to one another, asking questions and commenting on experiences and points of view on an issue (Doody, Slevin & Taggart, 2013). Focus groups capitalise on the interaction occurring in the group, stimulating the expression of attitudes and opinions, in a supportive and empowering environment (Wood et al., 2004). The focus groups were conducted in an informal setting in familiar surroundings with colleagues enrolled in the same graduate program. This fostered trust and openness and generated insightful discussion around the questions.

The focus group design was intended to elicit information from the GRNs, using semi-structured questions facilitated by the researcher. It was important for the facilitator, to use group dynamics and interactions to gain information, and to keep the participants on track ensuring they all were given an opportunity to contribute (Doody, Slevin & Taggart, 2013). The intention of the focus groups was to clarify a number of findings from the quantitative questionnaire data relating to factors impacting the GRNs in their clinical role, competence and provision of intervention. The focus groups were also intended to explore ways to improve the GRNs' capabilities.

The focus group questions were designed in combination with the literature related to the GRN and clinical deterioration and the results from the phase 2 quantitative questionnaires. The questions were framed to clarify the use of clinical competencies in managing patient deterioration and explore the factors that influenced the GRNs current role and ways to improve GRN performance. This information was valuable in making recommendations from the study. The questions used to guide the semi-structured focus groups were as follows;

1. How would you define clinical deterioration?

2. Is clinical deterioration easy to detect in the ward patient?
3. What factors impact the detection clinical deterioration?
4. What is your role when dealing with a deteriorating patient?
5. What factors impact your role in assessing and managing the deteriorating patient?
6. What clinical intervention do you provide to the deteriorating patient?
7. What factors impact your ability to provide clinical intervention to the deteriorating patient?
8. Is competency important when managing the deteriorating patient?
9. At what level(s) are you currently working in relation to the chain of response (show definitions of COR levels)?
10. How do we improve graduate nurses' capabilities to assess and manage the deteriorating patient?

Each focus group was conducted following a pre-arranged study day for the participants. It took place at the conclusion of the study day. The rooms used for the focus groups were well-equipped teaching rooms. They had adequate seating for the participants along with tables and whiteboards. The researcher provided refreshments and snacks for the participants. Each focus group was conducted over a period of 40-50 minutes, and were audio recorded on two electronic digital recording devices in case one did not record correctly. The audio files were downloaded and stored securely on a password protected computer system. Three focus groups were conducted to seek the stage information became repetitive, reaching the point of saturation (Bowen, 2008; Polit & Beck, 2012).

During the focus group facilitation, the researcher made notes of the participants' responses on a whiteboard. This procedure provided a useful summary of

the data and was reviewed by the group at the end of the session. A digital photograph of the whiteboard notes was taken for data analysis, which was downloaded and stored securely on a password protected computer system.

Data Analysis

Initially the data from the focus group audio recordings were transcribed verbatim. This produced a significant amount of data to be analysed. Thematic analysis was used to identify and interpret patterns of meaning (Braun & Clarke, 2006).

Initially the audio recordings from the three focus groups were transcribed using Microsoft Word (2013) by the researcher, which generated 90 pages or 26,000 words of verbatim transcript. The transcripts for each focus group were separated and given a code to distinguish between the focus groups and to protect the anonymity of participants. An example of the individualised codes was: focus group 1 (FG1); focus group 2 (FG2); and focus group 3 (FG3). Each transcript was read and reread together with the notes from the whiteboards. This process ensured a high level of familiarity with the data and enabled the initial coding to be undertaken.

Initial coding involved identifying interesting and meaningful statements from the participants that explained their experiences of dealing with clinical deterioration within their clinical practice. As the audio recordings were transcribed and participants spoke, they were assigned an individual code. For example, in focus group 1 (FG1) there were seven participants. As they made their first comment on the audio recording, a code was assigned. The first participant to comment was assigned the code FGP01, the second participant making comment was assigned the code FGP02.

These significant statements were highlighted within the transcript and coded as points of interest. These highlighted points were documented together on a separate document where they could be reread more easily. The initial transcripts and codes were reread and refined until no further codes were identified.

The next step involved searching for themes within the codes. A theme is seen to represent some level of meaning or patterned response within the data, representing a level of importance within the data (Braun & Clarke, 2006). Similar codes were placed together in groups for further analysis and refinement. From this preliminary procedure, around 29 rudimentary themes were identified and included: knowledge and knowing; support in practice; confidence levels; fear and uncertainty; learning opportunities; competency and practice; and professional development.

A deeper review of the 29 rudimentary themes allowed for a collapsing of themes, generated a number of main themes with underlying sub-themes. The intent was to establish distinct and separate themes and eliminate redundancy. A series of mind maps were drawn to identify similarities and linkages between themes and sub-themes. This process produced several thematic maps that were reviewed and adjusted multiple times to ensure they were relevant and distinct. The refinement of themes and sub-themes involved frequent referral to the overarching research questions. This was to ensure that findings were relevant and presented in a way that would clearly answer the research questions (Braun & Clarke, 2006). This process of review and refinement of the themes established four main themes and 16 sub-themes (see Figure 52).

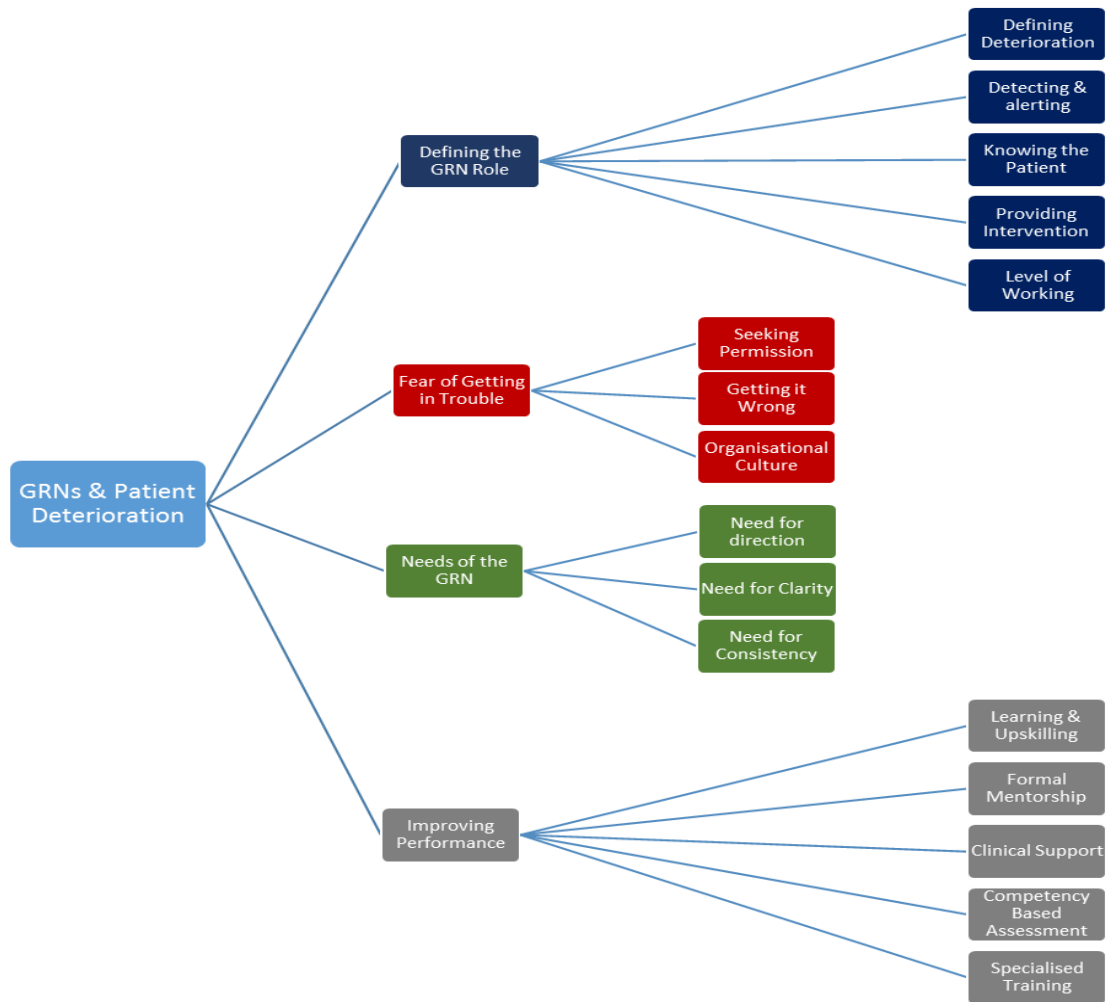


Figure 52. Qualitative findings thematic concept map.

The final step in the thematic analysis process was to write the report and present the qualitative finding in logical and convincing manner. An explicit discussion of the focus group thematic findings will be provided in Chapter 8 of the thesis. Within Chapter 9 of the thesis, the qualitative findings will be combined with the Phase 2 quantitative data findings and the contemporary literature to provide a thorough synthesis of the evidence and to suggest meta-inferences to answer the research questions posed in the study.

Trustworthiness of qualitative data.

Within the realm of qualitative research, the quality of the research is judged by the data trustworthiness (Polit & Beck, 2012). Instead of focusing on reliability and validity, qualitative researchers substitute the term data trustworthiness. There are several factors that contribute to the trustworthiness of the data and these include credibility, dependability, confirmability and transferability (Connelly, 2016; Lincoln & Guba, 1985; Shenton, 2004). The processes used to ensure trustworthiness is outlined in the following section of this chapter.

Credibility.

To establish credibility, phase 3 of the study was conducted using established qualitative methods to collect narrative data to explain the GRN role in more detail. This decision was congruent with providing the descriptive data required and was appropriate to producing more credible data (Shenton, 2004). It has been argued that credibility is one of the key goals of qualitative research and relates to confidence in the truth of the research data and the interpretations made (Polit & Beck, 2012; Shenton, 2004). Triangulation of data was achieved by amalgamating quantitative findings to guide the development of the questions for the semi structured focus groups. Alongside this, site triangulation was achieved, having involved participants from several organisations, reducing the effect of particular local factors peculiar to one institution, and improving the credibility of the data (Shenton, 2004).

Member checks are considered the most important provision that can be made to increase a study's credibility (Guba and Lincoln, 1988). This aspect was done in each of the focus groups with participants being asked to read and agree to the accuracy of the summary notes written on the whiteboards.

Transferability.

Transferability relates to the potential for extrapolation, how the findings may relate to other similar situations, populations or settings (Polit & Beck, 2012). Qualitative researchers need to use sufficient description to show that the research study's findings

can be applicable and this is done using thick description (Shenton, 2004). The following chapter of the thesis provides such a description.

Phase three of the study detailed information to explain the processes used, the decision making made and the data collection and analysis methods utilised. Provision of these details ensured that those reading the study have adequate information to consider the transferability of the findings to similar context, situations or populations.

Dependability.

Dependability is the extent that the study could be repeated by other researchers and that the findings would be consistent (Polit & Beck, 2012). In order to address the dependability of the Phase 3 research, the processes within the study have been reported in detail, enabling a future researcher to repeat the study (Shenton, 2004). The research design, the operation detail of data collection and analysis and the findings have been reported in full, thus meeting the requirements to ensure dependability.

Confirmability.

Confirmability is the degree of objectivity in the research study's findings, that the findings are based on participant responses and not potential bias or personal motivations of the researcher (Polit & Beck, 2012). Several processes were used to demonstrate confirmability of the Phase 3 data. Firstly, the use of data triangulation from the Phase 2 data will reduce potential investigator bias in the Phase 3 results. Secondly providing a rich and detailed explanation of the methods used and the decisions made in data collection and analysis will provide the reader with adequate information. This will allow the reader to follow an "audit trail" of procedures and decisions and thus make an informed choice as to the applicability of the data and whether it should be accepted.

Summary

This chapter has provided a discussion of the processes used in the qualitative phase of the study including the method used in the recruitment process. The sample of GRNs was discussed and the focus group interview method was highlighted. The data analysis of the focus group interview will be detailed together with some extracts of participants' statements to provide evidence of the themes identified from the focus group interviews.

Chapter 8

Qualitative Findings

Introduction

The previous chapter presented a discussion of the processes used in recruitment, data collection and analysis for phase three of the study. This chapter provides an explicit description of the focus group findings. The emergent themes and subthemes will be presented along with examples of narrative from the GRNs to support the themes.

Theme 1: Defining the Graduate Registered Nurse Role

The main purpose of the focus group interviews was to gather further information relating to the GRNs role in managing the deteriorating patient. The first main theme that emerged from the data was “Defining the GRN Role”. During the three focus group interviews, it was apparent all of the participants agreed that part of their clinical role involved dealing in some way with the acutely ill deteriorating patient. A participant summed this by stating ”looking after a deteriorating patient is part of our role right now on the wards” (FGP19). This theme was further divided into five sub-themes. These sub-themes will now be discussed.

Theme 1: Sub-theme 1 Defining Deterioration.

During the focus groups interviews, it was apparent that the participants had numerous ways of defining clinical deterioration in the ward patient. One participant stated deterioration was a “change in the patient that causes you concern or kind of makes

you look closer” (FGP05). For many participants, the focus of defining deterioration was placed on changing physiology and abnormality of vital sign observations of the patient. The majority of participants suggested that “altered obs” or vital signs could indicate deterioration in the patient’s condition and were useful in defining deterioration. A number of participants discussed the patients “baseline observations” again referring to physiology. Others suggested deterioration was, “an alteration in the patient’s regular limits” (FGP01) and “was the patients’ health status getting worse, they are below their normal baseline” (FGP20). One participant stated “I think you have got your parameters that you stick to and if they start falling out of those, like they are trending their blood pressure down then they are getting worse” (FGP09).

Some participants focused on the fact that deterioration may be common in people with pre-existing disease processes. A participant stated “they have got a lot of comorbidities anyway so they aren’t necessarily in the best of health to begin with” (FGP13). Other participants were more specific in their definition. One suggested deterioration “occurs when the patient becomes haemodynamically unstable” (FGP07). Many GRN participants specified that deterioration could be defined by abnormal changes in vital sign parameters such as conscious level, altered urine output, high respiratory rate, high pulse rate and dropping blood pressure. An increasing score produced by the track and trigger “early warning score” (EWS) vital sign charts, was identified as a way of defining patient deterioration. One participant stated

You know, looking at it objectively, you’ve got the EWS obs chart out in front of you, you can notice when someone’s deteriorating, there’s a big trend, their respiratory rate might be going up and their BP’s starting to drop and the pulse is up and you’re like, it’s a three now (EWS score) and it got to a five (EWS score)... there’s a problem (FGP15).

Other concepts were also used to define deterioration by the GRN participants. These concepts included specific conditions such as “bleeding” or “low blood sugar”. Some participants equated deterioration with escalating levels of intervention and

dependence of the patient on care provision. One participant stated deteriorating patients are “highly dependent....lots of things going on” (FGP15).

Theme 1: Sub-theme 2 Detecting and Alerting.

The next sub-theme that became apparent was the GRN role in detecting patient deterioration and alerting others. For many of the participants, detecting and alerting others was seen to be the key role of the GRN. A participant stated the GRNs role in deterioration was “strict observation and obviously you let your CN (senior nurse) or your buddy (co-worker) or whoever you need, know what’s going on and if they (the patient) are getting worse or they are getting better” (FGP08).

Other participants also discussed how the GRNs main role was to alert senior nursing staff and medical staff to a deteriorating patient. It was apparent that senior nursing staff and medical staff also expected the participants to raise the alarm if a patient was deteriorating and call for help. The participants talked about being “a voice” (FGP01) or “an advocate” (FGP03) for the patient with an emphasis on “making things happen” (FGP08) by alerting others. Most of the participants felt this was an extremely important role. This sentiment was summed up by FGP09 who stated their role was “to be the voice of your patient, so if they are becoming worse you’re monitoring them very carefully and you are feeding back to the coordinator (senior nurse) and possibly the doctor to help get things done”.

Detection of deterioration was viewed as challenging at times for some participants. There was concern that rapid changes in physiology may be missed or slow decline not recognised. FGP05 commented that it “can be more difficult if the patient can’t tell you...’oh I don’t feel well’ for example”. Another participants stated it can be difficult to detect “if it's a super rapid deterioration, we might not pick it up in time or also if it's not super rapid, if it's just slow and the obs have gotten a little bit altered, but not really too much ” (FGP04). Others mentioned “if you know your patient well enough then you can probably pick up subtle changes. If it’s a brand new patient and you don’t know what normal for them you might miss it.” (FGP11).

The majority of participants felt confident in their assessment and monitoring skills. Issues around their developing knowledge and experience, however, were raised which gave them less confidence when trying to detect subtle changes. One participant stated “I’m ok to assess, to a degree, but I think I still want someone else to maybe assess again” (FGP06).

A lack of confidence seemed to stem from a perception that GRNs might miss an important subtle change, one participant commented “I feel a little less confident in interpreting my assessment, just because you don't want to be the one to miss something else huge” (FGP06). There was acknowledgement amongst the participants that confidence and ability to detect deterioration would improve with experience. One stated;

I think a lot of the time that knowledge comes with time and experience and as a grad you don't necessarily have all that experience but over time you will build on it and you'd learn how to recognise deterioration a lot better and how to act on it and what you need to do to act on it (FGP20).

In the meantime, participants appeared to rely on the support and opinions of the senior nursing staff, and particularly the judgement of the shift coordinator with regards to recognising deterioration in more challenging patients. This was summed up by a participant who stated “I feel like you're second guessing yourself. So you're always asking another senior or someone else you're working alongside if they can just come and check this patient, because I'm concerned” (FGP17).

Theme 1: Sub-theme 3 Knowing the Patient.

A recurrent sub-theme impacting the role of the GRN was “Knowing the Patient”. This sub-theme had a number of threads and was seen as a particularly important factor in relation to detecting deterioration and alerting senior staff. The participants felt it was a significant advantage to “know the patient”, having previously cared for the patient in the ward area. This prior knowledge of the patient gave the participants a better understanding of the patients' disease processes, comorbidities and appeared to aid the participants with overall situational awareness.

One of the other key aspects of “knowing the patient” was linked to recognition of change, as it helped GRNs to recognise subtle changes in the patient’s condition and potentially pick up earlier signs of deterioration. One participant commented;

You might not have had them before, so therefore you don’t get what their baseline was, what they were like yesterday or what they were like this morning versus now, to pick up on the subtle changes (FGP17).

A further participant stated;

If you know the patients well enough you can probably pick up the subtle changes, if you looked after them all day but if they’re brand new to you then you may not be able to pick those changes up (FGP09).

Knowing the patient provided participants with more confidence in their assessment of the patient and made them more willing to seek help and support. Many participants raised concerns about contacting senior nurses and medical staff in particular, FGP15 said “I’m a bit of a wuss, I’m scared of doctors.....if I know I have to call a doctor, I get pretty nervous.....what if he asks me something about the patient and I don’t know the answer”. Some participants commented that “knowing the patient” and having the correct information was important as “you’ve got to know what is going on so you don’t look like an idiot in front of others” (FGP04).

Knowing the patient and having a better understanding of the patient’s condition meant that the GRN felt they were more informed and could then prepare and present a more logical justification to explain their call for help. By “knowing the patient” the participants felt less likely to be dismissed by senior nurses or medical staff. They felt that having knowledge of the patient empowered the participants and that their concerns would be taken more seriously.

Another important aspect of “knowing the patient” was the use of intuition. The participants seemed to use intuition or “gut feeling” when making decisions about the patient’s condition. One participant stated;

I don't know, I just get this gut feeling,...I just have this feeling that it's going to actually become worse. Then I go to my co-ordinator and I say, look, I'm just not happy...even though, say, the observations are fine, I just don't like the look of them (the patient) (FGP04).

Other participants also agreed that they relied on intuition, FGP17 commented that “you’ve got a gut feel that that’s stuff not quite tickety boo, so you get someone else who has a lot more experience to go yay or nay”.

This form of tacit “knowing” was common and was seen as an important aspect of assessment. One of the participants stated;

I feel just like it’s always good to listen to like your spider sense.....because I’ve had things where I’ve just been showering a patient and I’ve been like, I have to take his obs now! No reason but I’m probably like, something’s telling me I’ve got to take his obs (FGP13).

As discussed previously, participants felt that intuition alone was not enough to present a detailed account and convince others there was a problem. Therefore intuition often directed the participants focus and made them gather more subjective data and “know more about the patient”. Generally the participants felt they needed support and validation from changes in objective assessment or from colleagues before they would call for help.

Theme 1: Sub-theme 4 Providing Intervention.

The next sub-theme that emerged from the focus group interviews was “Providing intervention” to the deteriorating patient. Most participants agreed that limited intervention, prior to medical or senior staff review, would be initiated for some

patients. One stated “you’ve got to be putting in an intervention before they get to a point where they die” (FGP13). These interventions included positioning of the patient, administering higher concentrations of oxygen and in some case providing jaw support and suction to manage a patient’s airway. One participant commented that “we do basic stuff but then I run it past the coordinator” (FGP07).

In general there was a reluctance by participants to provide initial interventions to the deteriorating patient before seeking senior support and permission. A participant stated;

I'm going to go ahead and say no, I wouldn't. I would always just say to my co-ordinator, are you okay for me to do that or what would you like me to do? I would never try and sort of go ahead and do anything (FGP04).

Others agreed with this sentiment, “I wouldn't do it without asking first” (FGP03) and “well, you get authority first” (FGP06)

There was a high level of unease about providing some interventions as participants felt they would “get into trouble” (FGP04) and be working “outside their scope of practice” (FGP08). One participant commented that “scope of practice....it’s hammered into you! You’re petrified that, oh my God, I’m going to lose my registration if I do the wrong thing” (FGP17).

Many participants questioned whether legally they would be supported by the hospital and their professional body if they provided interventions that generally needed some form of “medical approval”. Often the participants commented about seeking permission and the need to have permission granted before providing intervention and support. It was only when “permission” was granted that participants felt enabled and empowered to provide intervention without fear they would “getting into trouble” (FGP04) with senior nurses and medical staff.

The participants also suggested that the provision of initial interventions was limited by the perception of a lack of practice, or not being “skilled” in certain interventions. The participants commented that they may not have had recent training

or updates in some of the skills required and therefore they felt reluctant to provide intervention for fear of “doing it wrong” and again “getting into trouble”. One participant stated;

The one thing that scares me as well is, they teach us about the airway and stuff but I don't think we get enough practice with that, because if I were to walk in and see a patient that's airway was compromised, I probably wouldn't be confident to put like a Guedel (oropharyngeal airway) in (FGP15).

Other participants commented that they needed more consistent practice to develop the required skills. They felt that classroom based teaching was not enough to develop the required level of skill. FGP11 stated “yes teaching, that's all well and good but as long as you do actually get the opportunity to practice it”.

Theme 1: Sub-theme 5 Level of Working.

The final sub-theme from theme 1 was that of the GRNs “level of working” or the complexity of their role in the clinical areas. Again the discussion had several strands to it and emphasised a number of factors influencing the “level of working”.

During the focus groups, the participants discussed the definitions of the levels of working from the “Chain of Response” (DH, 2009). All participants agreed that their role was dynamic and included working at multiple levels from the perspective of the “chain of response”. The majority of participants within the focus groups agreed that the first 3 levels of the “chain of response” reflected their main level of working. FGP13 stated “three...the first three I would say” referring to levels 1-3 of the chain of response. Others suggested the same, FGP06 commented “levels one, two and three..... yes”.

There was agreement during the discussion that at times, the GRN role could include some of the level 4 (Primary Responder) interventions but there was a high level of unease related to providing interventions to the deteriorating patient. Participants felt at times, however, that intervention was needed and they had to “put in an intervention before they get to a point where they die” (FGP13)

The participants' consistent view was that their level of working was tied to their main role in the management of the deteriorating ward patient. The participants felt that their main role was to detect, alert and monitor the deteriorating patient. FGP05 suggested "I would probably deliver as much data as I could and then almost delegate it to the co-ordinator or someone senior to me, like, okay, fair enough, I'm going to ring the doctor. Because usually that's what happens".

The participants also discussed a number of other factors that influenced their "level of working". They commented upon the "attitude of the ward" and the impact of negative emotions on the participants in practice. The need for the participants to seek "permission" from senior staff prior to taking action was highlighted and how this impacted upon their confidence to provide intervention. FGP06 stated;

It depends on the ward, like the ward that I'm on, they want you to run everything past the coordinator. You can't even ring a doctor or you have to run everything past the coordinator and then they'll make the decision of who they call or who they delegate to do what (FGP06).

Other participants indicated that their "level of working" was often influenced by the expectations of the senior nurses and those staff coordinating the shift. One participant commented about the coordinators expectation saying;

I would do basic stuff like giving oxygen, but then I will go out and say, this has happened to this patient, this is what I've done, and they (the nurse coordinator) might then say, okay, well, do this as well. Or they (the nurse coordinator) might say no, they have got to get off that oxygen and I want them to use a hi-flow and so on. So sometimes they'll say no to what you've done and then sometimes yes - and then you'll, sort of learn from that as well (FGP14).

Theme 2: Fear of Getting into Trouble

The second main theme that emerged from the focus group data was the participants' fear of "Getting into trouble". This fear seemed to be a major concern that influenced

the participants' abilities and confidence to manage the deteriorating patient. In particular, the participants commented that the fear of getting into trouble made them less confident in their assessment skills, their knowledge and their ability to interpret information. One participant commented "sometime you just go home and you think, wow, did I make the right call or now I'm going to get in trouble.....you know?" (FGP16). Another stated "there are so many days where I've gone home and not slept, I'm worried! I've called in at 3 a.m. and said, did that patient have to get catheterised, did I miss something?" (FGP08).

The participants commented on questioning their own decision making and becoming more cautious, feeling they required senior nurses to check their assessment and interpretation of information before progressing. This was highlighted by FGP12 who said "I feel like you're always second guessing yourself, asking another senior or someone else you're working alongside can you just come and check this patient, because I'm concerned".

The participants' fear of getting into trouble made some worry about their scope of practice and professional consequences when dealing with a deteriorating patients. One participant stated "it's hammered into you, your scope of practice. You're petrified that, oh my God, I'm going to lose my registration if I do the wrong thing" (FGP20).

It was apparent that participants needed permission before providing intervention for fear of stepping outside of their scope of practice. FGP04 said "I would always just say to my co-ordinator, are you okay for me to do that or what would you like me to do? I would never try and sort of go ahead and do anything". One participant commented that "you need to cover your ass and record everything" (FGP03) as a way of mitigating the risk of getting into trouble. This referred to accurate record keeping particularly in relation to interventions that appeared to be on the cusp of their scope of practice.

Theme 2: Sub-theme 1 Seeking Permission.

Throughout the focus group interviews, one of the main topics of discussion that kept emerging related to a sense of seeking and requiring “permission” to act or intervene in the deteriorating patient’s management. This authorisation related to senior nursing staff or medical staff, sanctioning either a call for help or clinical intervention and management for the deteriorating patient. Participant FGP03 stated “In our ward, a lot of the CNs (senior nurses) call a lot of shots and things, and the doctors are all happy with that” (FGP03).

For some participants, it was evident felt they were compelled to gain “permission” from either senior nurses or medical staff, if they wanted to either raise the alarm or provide intervention to the deteriorating patient. It was apparent that the act of seeking permission was often not for support or guidance from senior staff, but to mitigate the risk of getting into trouble. Participants’ comments included “they want you to run everything past the coordinator, you can’t even ring a doctor” (FGP06) or “you need a doctor’s order, we can’t just do it” (FGP01). This requirement created a reluctance by the participants to call for help until they were certain there was an issue and they were not going to get in trouble.

At times participants stated they often knew what needed to be done for the deteriorating patient, but using their initiative, was often frowned upon by senior nurses. This was highlighted by one participant who commented;

“The coordinator was nowhere in sight. I thought, I’m just going to ring the doctor, because this patient is sick now, like vomiting, and I got ripped by the coordinator for using my initiative because I should have contacted her before contacting a doctor” (FGP21).

Seeking permission was also seen by some participants as a risk management strategy, providing protection against “doing the wrong thing” and the potential ramifications of “getting into trouble”. Initially participants discussed a level of uncertainty of what was expected of them in relation to the deteriorating patient and

what they were “permitted” to do. Some participants commented that they “are not legally allowed to undertake some interventions” (FGP22) others felt that “you need to listen to one of the CNs (senior nurses) and get advice as to what you can do” (FGP17).

Other participants provided apposing accounts, suggesting that having authorization from senior nursing and medical staff was empowering, enabling the participants to use their initiative and provide intervention in the knowledge they were doing the right thing for the patient. For many participants, gaining permission or authorization was seen as essential requirement. Permission provided reassurance to some of the participants, validating their concerns with regards to the patient. “I wouldn't do it without asking” (FGP03) and “I'm going to go ahead and say no, I wouldn't. I would always just say to my co-ordinator, are you okay for me to do that or what would you like me to do? I would never try and sort of go ahead and do anything” (FGP04).

This lack of clarification in what the GRN were expected and permitted to do, caused some confusion and anxiety amongst the participants. Professional and legal concerns were raised by the participants. As discussed previously, these related to worries about scope of practice and the potential professional consequences if they had not sought “permission” prior to undertaking clinical interventions. They had scope of practice “hammered into them” at university. The participants commented on feeling “petrified” or suggesting “I'm going to lose my registration” if they provided certain interventions.

Theme 2: Sub-theme 2 Getting it Wrong.

Running alongside the sub-theme of “seeking permission”, the next sub-theme focused on “getting it wrong” or making the wrong decision about the management of the deteriorating patient. Again this had a number of strands that looked at the sub-theme from numerous perspectives. The participants felt that working as a registered nurse was challenging particularly when looking after the deteriorating ward patient. This was summed up well by a participant who said;

Most of the time, can I just say, so it's on record, I feel as a grad you're winging it every day, not really knowing what you're doing. You don't get enough time to spend with the actual patients to do even fluid balance charts. You're running in and out, in and out, and you don't feel like you've got support and you're just winging it. That's how I feel (FGP07).

The participants were concerned about providing the wrong treatment to the patient, particularly if they had not been given "permission" from the senior nurses or the medical staff to provide intervention. FGP18 commented "it's hard at times, you can kill someone if you get it wrong, that's what really scares me". This led to a reluctance of GRNs to provide urgent intervention to the deteriorating patient for fear of making a mistake. FGP04 stated "I think it's kind of because we're worried that we're going to do the wrong thing".

Others commented upon the inconsistency of senior nurses and their expectations, which made the participants confused and reluctant to act, "I've had two different co-ordinators say, why is this person on oxygen? We're not allowed to give it. And the other one say, this person needs oxygen. Do it before you come and see me".

It was evident that many participants were aware of a "hierarchy" in their areas that involved both senior nursing staff and medical staff. Often lines of communication involved an escalation via different staff in the "chain of command" or hierarchy and stepping outside of this was seen as "getting it wrong". One participant commented "well, we're not supposed to, but, then I suppose you wouldn't get in trouble if the doctor was, like, you did the right thing" (FGP04). Others mentioned the need to keep accurate records of discussion and orders from senior staff and in particular medical staff. FGP03 commented that "you need to cover your ass and record everything" as a way of mitigating the risk of getting into trouble.

Theme 2: Sub-theme 3 Organisational Culture.

The final sub-theme that emerged from theme 2 related to "Culture within the Organisation" and how this impacted on the participants. This included the senior staff attitudes as well as the culture of the ward and hospital as a whole. This was

complicated by the fact that in many areas, participants felt the senior nursing staff and medical staff had divergent and inconsistent expectations of the GRN and their role in managing the deteriorating patient.

The participants discussed initially the attitudes of the senior staff and how they influenced their confidence and decision making when caring for the deteriorating patient. In some areas, the participants felt that senior nursing staff were approachable and supportive. FGP05 stated “yes, we do team nursing, so I'd say yes, I'd always have support”. Others commented that “in general the senior staff were supportive of the GRN” (FGP11) and “were generally supportive of the actions you take” (FGP16) with regards to the deteriorating patient.

In other areas, participants felt senior nursing staff and medical staff could be unsupportive and at times belittling, questioning the participants initial decision making. FGP01 commented “sometimes you are scared to ask something because you're like, okay, how many months is it now, should I be asking this dumb question? Will I get grilled?” The negative emotions often had an adverse impact of the participants and their self-confidence to ask questions and to provide care for the patient. One participant stated “I'm scared to ask at times, I think is this a dumb question and should I be asking this? I pick my people though. Some of them are really approachable, some are not....it's personalities” (FGP 14).

Participants also spoke of the culture of the ward or the hospital. This discussion of ward culture again polarised the participants' opinions. Some felt that their place of work provided a supportive environment where the GRN could work collaboratively in the decision making process. Other participants spoke of a “culture of control”, where using their initiative could get them into trouble with both senior nursing staff and the medical team. Some commented that senior nurses took charge of all decision making, the GRN had no autonomy in making clinical decisions and had to seek permission from the senior nurse in charge. FGP06 spoke of “having to run everything past the coordinator for approval including calling for help”. Others spoke of the expectation that they gather the information and delegate the decision making to

the coordinator, “we need to let the co-ordinators know and they get them to be reviewed by the doctors” (FGP11).

Theme 3: Needs of the GRN

The third main theme that emerged was the “Perceived needs of the GRN” when managing the deteriorating patient. These needs were multifaceted and related to direction and clarification as well as a support structure within the clinical environment and organisation. Once again these perceived needs impacted upon the participants’ confidence and decision making in the clinical environment. From the main theme, three sub-themes were highlighted and will be discussed in detail.

Theme 3: Sub-theme 1 Need for Direction.

The initial sub-theme to emerge was a clear need for direction espoused by the participants. FGP02 stated “I think we still need support with making bigger decisions about patients”. Some of the participants clearly felt out of their depth at times when managing the deteriorating patient. FGP07 summed this up saying “I feel as a grad you’re winging it every day, not really knowing what you’re doing”. FGP02 added that “on the wards you ask someone something and they’ll go, you’re an RN, you should know that, and I’m like, well, I don’t actually really know”.

The participants expressed the need for direction from both senior nurses and medical staff in their decision making and clinical interventions for the deteriorating patient. Many participants felt that senior input gave them clear guidance that they were prioritising and undertaking the correct interventions for the patient. FGP17 stated “I feel like you’re second guessing yourself. So you’re always asking another senior or someone else you’re working alongside if they can just come and check this patient, because I’m concerned”.

Some participants felt unsure what they were required or expected to do before calling for help, “no, I’m probably not 100% clear of what is expected” (FGP09).

FGP07 stated “you just want sometimes just some clarification, do you think I should do this, and then they (senior nurses) turn around and go, you're a RN, you should know that, and you just feel bad”. Accessing senior support and direction allowed the participants to ask questions and clarify what was required of them and what further treatment was necessary for the patient. Seeking direction from senior staff was also a form of validation in regards to their concerns and relieved feelings of being unsure or second guessing their decision to call for help.

Some found that the perceived hierarchy within the ward environment could be a barrier to seeking direction. In particular the participants found it difficult to communicate directly with senior medical staff. They spoke of feeling uneasy or nervous in case they were asked questions they did not know the answer to. Other participants felt intimidated by senior medical staff and found them unapproachable or dismissive. This made participants reluctant to seek direction or clarify intentions.

Theme 3: Sub-theme 2 Need for Clarity.

The second sub-theme related to the “need for clarity” when dealing with the deteriorating patient. The participants discussed clarity from several perspectives. Initially the need for clarity was raised in relation to the expectations of the GRN in the clinical management of the deteriorating patient. Clarity was also discussed in the need for clear communication from senior nursing and medical staff with the participant.

The issue of poor communication was commented upon in regards to trying to understand the clinical decision making of medical staff, “we need good communication as to why decisions are made, so that we can understand it” (FGP19). This view was echoed in the comment “sometimes you ring up because the patient may have a change, a really big change in their BP or whatever and they (the doctor) are like....Oh, that's fine, that's still fine. You're like, that's not really fine, though, I don't understand”. The need for clarity was particularly important in relation to the goals of care and the undertaking of clinical interventions required by the deteriorating

patient. All participants agreed that good communication improved clarity and team working and facilitated the delivery of timely management to the patient.

The participants also discussed the need for clarity in relation to their role. They were concerned that at times, the expectations of senior nursing and medical staff were inconsistent and unclear. This led to a sense of uncertainty and again influenced their decision making. Also within the policies and procedures of the hospitals, GRNs felt there was a general lack of clarity as to interventions registered nurses were allowed to undertake in an emergency situation and the impact on their “scope of practice”. This again led to uncertainty and fear of getting in trouble, some commenting “We are not legally allowed to undertake some interventions” (FGP22). This seemed to be influencing the participants’ decision making and willingness to clinically intervene.

Theme 3: Sub-theme 3 Need for Consistency.

The final sub-theme that emerged was related to a need for consistency. Again the participants approached this concept from a number of perspectives. Initially the need for consistency was discussed in relation to senior nursing staff within their ward areas. It was apparent from the discussions that participants felt there were a number of areas of inconsistency. They related to the differing attitudes and expectations amongst senior nurses concerning the role of GRN when dealing with the deteriorating patient. This could cause confusion and amongst the participants and influencing their willingness to provide interventions to the deteriorating patient.

The need for consistency also extended to ward policies and procedures in the clinical areas. Many senior staff worked outside of policies and procedures when dealing with the deteriorating patient. This created anxiety and confusion for the participants, and made it difficult for the participants to learn best practice. FGP11 commented “we need to actually use them (policies and procedures) on the ward and have everyone engage with them because everyone has different ways of doing things. The policy stipulates one simple method of doing something, but it’s ignored and everyone’s got their own way”.

Participants also raised the need for consistency in relation to senior medical staff. They commented that each consultant working within the ward area had different and often inconsistent practices when dealing with deteriorating patients. This inconsistency made it difficult to predict what was expected of the participants from multiple admitting consultants. Again the participants felt this made it difficult to grasp developing their role. They commented about inconsistent instructions from medical staff with regards to patient management. FGP13 said “some doctors don’t like us calling the physio or the cardiothoracic physio, for, say, a cough. They don’t believe in the evidence so we have to go through them, but other doctors are more than happy for us too”, communicate with other healthcare professionals.

Theme 4: Improving Performance

The fourth main theme that emerged from the focus group data was “improving performance” in the clinical role of managing the deteriorating patient. Many participants felt improving their performance was vital, and that there was “always room for improvement” (FGP10) or “you’ve got some basic knowledge, and it’s expanding, but we need to gain more and more experience” (FGP15).

There was a clear perception by the participants that they were still novices and working at a basic level. One participant stated;

I think a lot of the time that knowledge comes with time and experience and as a grad you don’t necessarily have all that experience but over time you will build on it and you’d learn how to recognise deterioration a lot better and how to act on it and what you need to do to act on it (FGP20).

Another commented “you know that someone can do a better job than us as new graduates. Someone who’s had more experience, more exposure, more practice is going to do a better job than us” (FGP04). There was agreement from all those in the focus groups that the participants required further support to improve their clinical performance when dealing with the deteriorating patient. FGP01 suggested “we’re not saying we know enough, we’re always... we can always know more”.

Theme 4: Sub-theme 1 Learning & Upskilling

The first sub-theme that became clear from the participants within the focus groups was the need for further learning linked to the complex needs of the deteriorating patient. Some participants commented that they needed to improve their knowledge so they could understand how and why patients deteriorate. Others focused upon improving the knowledge concerning assessment and management of the deteriorating patient.

Almost all of the participants involved, indicated that there was much more to learn in regards to the deteriorating patient. The participants suggested that areas for personal learning included understanding the causes of deterioration, recognising the changes associated with deterioration, and understanding the management required for the deteriorating patient.

There was also a general consensus that university preparation covered some of the required knowledge. One participants commented;

We've had a lot of the theory, because I've learned all this stuff at uni and before. Then when you come onto the ward and you see it in action you're having a look at your roles, you're able to link it all together. You're actually able to formulate what's going on so that gives you a clearer picture on how to help that patient as well. So I think the theory is still really, really important (FGP05).

Some participants, however, commented that often much of this is forgotten, "you get so much stuff at uni and you come here and you're like, I don't really remember" (FGP12) and "it was really good but, still, you move on from that semester and...you don't forget it, but you don't remember it until you come to it in practice" (FGP07). Others felt that university provided too much theory based information. FGP03 said "that was a huge issue with undergrad, I reckon. I think so much of it is so theory-based and you're just regurgitating facts and it's like what's the use, it's in one ear and out the other and you forget it once the exam's over".

The participants also focused upon their competence. They felt competence related to the GRN working independently, “to me, it's the ability to do something by myself and do it correctly” (FGP08) and “do it correctly without needing extra support” (FGP10). There was a clear focus upon the practical application to managing the deteriorating patient, “I feel like competence is well reinforced set of skills” (FGP07).

The participants commented on the potential issue of not acting in a safe and competent manner. FGP09 stated “I can do it, but I just need someone to reassure me that I'm doing it competently and that because of the ramifications of what might happen if you haven't done it properly”. Others commented about their concerns of not being fully competent in that “you can kill somebody, that what really scares me” (FGP18).

Participants talked of improving their knowledge and skills within the clinical setting. They felt it was extremely important that new knowledge and skills could be consolidated within their areas of practice. Educational clinical support was seen by many participants as essential to improving their performance with the deteriorating patient. There was universal agreement within the focus groups that the current model of formal educational support offered to participants was in parts inadequate. This support relied heavily upon pre-arranged study days over a period of 12 months and *ad hoc* meetings with the ward based Staff Development Nurse (SDN).

The participants felt that alongside classroom based education, there was a need for more education sessions that were grounded in the clinical setting. GRN comments included “we definitely need hands on learning, scenarios and questions” (FGP21) and “I feel like 90% of what I've learnt in my nursing has been in practice” (FGP11). Some commented the study sessions didn't need to always be formalised “even if it was just like ten minutes during each shift, if the SDN or whoever said, come on, we're doing a practice of the MET (emergency response to clinical deterioration)” (FGP02). Others supported the idea of informal practical education sessions, “just impromptu, out of the blue, so you've got that kind of oh, snap, this is happening now” (FGP06).

Some discussed the need to restructure the graduate learning programs to focus more on skills particularly at the beginning of the graduate year. Participants commented that the education that was provided on the deteriorating patient was useful in the graduate program, “it’s helped me hugely” (FGP09). However, some participants felt it was being provided late on in the program “it needs to be earlier, it’s too late at the end” (FGP16) and “having those days earlier in our programme would be better” (FGP08).

Theme 4: Sub-theme 2 Formal Structured Mentorship.

The majority of participants highlighted the need for a system of formal mentorship within all the clinical areas. This would involve participants being assigned a senior nurse mentor within the clinical area. They commented “yes mentorship would be really good for us” (FGP04) and “I don’t know but I think sometimes just working with a really experienced nurse, that actually would work, one-on-one with you” (FGP08). The participants felt having formal mentors would allow them time to ask questions whilst in clinical practice and provide a role model to learn from.

Some commented that their ward area had informal mentorship programs that were often *ad hoc* and ineffective. FGP06 stated “well, yes, we do have informal mentors but we never see them because they are always rostered differently”. Another participant commented “we have a mentor on our ward but I’ve only worked with her twice in the whole time I’ve been there” (FGP11). One participant stated;

“I find that the students are buddied up with someone on our ward, they are buddied up and do the same roster. We (the GRNs) are with a different person every day and none of them really know where you are in your learning, so you can’t necessarily develop your learning because they don’t know where you’re at! So they end up taking over some of the things that you should really be learning” (FGP17).

This meant that often the process of mentorship was abandoned due to the lack of time for the participants to meet with their mentor or a lack of consistency not being assigned to work with mentors. The participants discussed the need for consistent

mentorship, someone who knows them and where they are up to in their clinical development.

The participants felt they needed periods of regular protected time similar to that offered to junior doctors. This would provide time to work alongside their mentors and gain valuable feedback and clinical guidance to improve their clinical knowledge and competence when dealing with patient deterioration.

Theme 4: Sub-theme 3 Clinical Support.

The next sub-theme that became evident focused on improving the performance of the GRN through the provision of clinical support. There were a number of different perspectives on the levels of support provided by different staff within the participants' areas of work. The participants discussed the need for a more supportive clinical environment where all staff are approachable and have time to help. Participants discussed the issue of senior staff being overstretched, "no one's got the time or everyone's too busy and then someone will go, I'll do it because it will be quicker". FGP07 stated "everyone is too busy to help". This influences the participants' development as senior staff have no time to teach and take over. "Because everyone's busy you're out of time, you just get somebody who can do it quicker and faster and know what they're doing so then you're not actually learning it anyway" (FGP06)

Participants also pointed to issues such as "being scared to ask" (FGP01) and finding "it is very daunting talking to doctors" (FGP19). One of the solutions put forward by the participants was to have more clarity and consistency from senior nurses and medical staff in relation to the expectations of the GRN (discussed previously). A solution put forward by the participants was more inclusive multidisciplinary team working, including debriefing sessions with all members of staff in attendance. Some of the participants felt this would help to highlight good practice and as well as gaining points for improvement. Using this initiative would provide lessons from the whole team perspective.

There was recognition that the SDNs were a valuable resource for the participants learning and development. Many felt the SDN's were extremely busy, overstretched and time poor. This led to a sense of frustration and a feeling of being forgotten and left on their own. "SDNs are good, but at the time, they've got about six people to look after, like mine for example, she's got ENs now as well".

The participants expressed difficulty meeting with the SDN, "I know we all have SDNs but sometimes you don't get to see them much. You know, if you have a burning question or like even just time for reflection. We just go home sometimes and it's like, well, that happened today and I had no one to talk to" (FGP07). FGP06 stated "SDN yes they are good, it's just you can never grab them when you need them".

One solution put forward by the participants was to have more SDNs working clinically to offer support when dealing with acutely ill patients. They felt this would provide an additional level of clinical support and also provide valuable teaching and upskilling for the participants within the clinical environment.

Theme 4: Sub-theme 4 Competency Based Assessment.

The participants expressed a need to improve their clinical expertise when assessing and managing the deteriorating patient. The participants felt this could be achieved by focusing on competency-based education relating to the assessment and management of patient deterioration. The participants discussed the need for a clearly defined set of clinically based competencies which outlined the expected level of practice of a GRN. FGP19 commented "you need a clear set of goals and a clear set of standards and as long as know what we need to do, and know how we have to do it and what we have to do to get there, it's all good"

Most of the participants felt that competencies focusing on how to assess and manage the deterioration would provide them with confidence "having pre-defined clinical competencies with almost a checklist of this is what you do in this situation or that, yes that would be really useful" (FGP12). FGP18 suggested "it would give you a

framework, a basic list of things and then the next step. You know, these are the things you can do before you need to really get somebody else to”.

The participants felt it was necessary for robust clinically based assessment of competencies. FGP09 commented “yes having a clinical assessment of competence, it would be scary but it would be useful”. Others supported this “yes it’s got to be clinical assessment” (FGP11) and “hands on assessment, it’s got to be hands on. It would maybe make us more confident and then you’d be... in thinking like, I actually know about this, I can do this, even though we do anyway” (FGP15).

These would be assessed by senior RNs or the SDN within the clinical area to ensure that the participant was performing to the correct standards required. One stated;

I would like, for me, whoever’s signing it off, to be a consistent person. So potentially, if you had say four SDNs, you know, either running the show or on the ward and you’re six months’ up, you like to have some consistency with that, the same SDN so that their expectations still remain the same. Do you know what I mean? (FGP18).

Theme 4: Sub-theme 5 Specialised Training.

To facilitate improved performance, the participants pointed to a need for training and education that focused specifically on the management of acutely unwell and deteriorating patient. Although participants agreed that some of this content was covered in undergraduate and graduate program education, they felt that there needed to be significantly more in the graduate program.

In particular, the participants discussed the need for clinically focused and practical training on managing deterioration. They agreed that it needed to be “hands on” practical training focusing on both knowledge and skills required to manage the deteriorating patient. “Yes, we need scenario based, where we’re actually working with the masks and things like that and going through practical examples, it’s hands on” (FGP11). Other participants agreed, “yes, we need hands on, practical learning”

(FGP17) and “we need hands on sessions that really challenge us, throwing questions at us” (FGP 19).

This was summed up by FGP19 who stated;

We need scenario based learning like, where you’ve got some case studies and scenarios, things like that, hands on. Because otherwise it’s just like you’re trying to read a paper and apply theory that’s completely separate to what you’ve learnt, to what you’re doing on the ward (FGP19).

Participants felt they needed more focused training on using the EWS vital sign scoring chart systems and knowledge of the interpretation of their assessment. They felt this could be delivered in both classroom and ward based education sessions. Participants also felt that regular practical scenario based training involving all members of the multidisciplinary team would be useful in developing skills and understanding but also defining roles and expectations within the clinical team. This they felt was key to improving performance.

Summary

This chapter has presented the findings from the focus group interviews. The emergent themes and subthemes from the data analysis have been discussed along with extracts from the participant statements as evidence of the themes and subthemes.

Chapter 9

Discussion, Limitations and Recommendations

Introduction

The previous chapter presented the findings from the focus group interviews. This chapter will begin with a synthesis of meta-inferences from the combination of findings from the quantitative and qualitative phases of the study. The meta-inferences will be presented to answer the research questions and be linked to the current literature to provide comparisons. It will conclude with a discussion of the limitation key recommendations from the study.

Study aims and research questions

Within this study, a mixed methods design was employed to gather and analyse both quantitative and qualitative data, providing an in depth explanation of the role undertaken by the participants in their current clinical practice when managing the deteriorating ward patient. A mixed methods approach was required to answer the practical research questions of the study, reflecting the overarching pragmatic philosophy of nursing practice and its pluralistic nature.

The aims of the study were to firstly explore the role of newly graduated nurses in the management of the deteriorating ward patient and the factors impacting on the role. Secondly, it was aimed at investigating the clinical competencies used and the level of intervention nurses provide. Finally the study explored ways to improve the graduate nurses' capabilities in the management of the deteriorating ward patient. The research questions were:

1. What is the role of the newly graduated registered nurse in relation to the identification, assessment and management of the acutely deteriorating ward patient?
2. What factors impact the role of the graduate registered nurse in the management of the acutely deteriorating ward patient?
3. Which acute care competencies are important to the graduate registered nurses practice in the management of the deteriorating ward patient?
4. At what level are newly graduated registered nurses working clinically in relation to the key acute care competencies within the clinical setting?
5. How do we improve the capabilities of graduate registered nurses to assess and manage the acutely deteriorating ward patient?

The participants.

This study recruited GRNs working within the Perth metropolitan hospitals (both public and private), undertaking their first year of a graduate nurse training program. The graduate training program was overseen by the Department of Health, WA via the GradConnect program. Demographic information collected from the participants indicated that there was diverse representation from the GRN group across gender, age groups, area of speciality, university of undergraduate study and private or public hospital employment. The majority of participants were however, female, aged from 21 to 25 years old, who had completed their undergraduate nursing course within a Perth metropolitan university and working within a public acute hospital setting.

The Problem of Clinical Deterioration

Defining clinical deterioration.

As part of understanding the role of the GRN in clinical deterioration, it was important to ascertain their understanding of the concept of clinical deterioration and the meaning it held for the GRNs. The study found that the concept of clinical deterioration was well understood by the participants. There was almost universal

agreement amongst the participants of the key attributes involved in clinical deterioration, and the way that clinical deterioration could manifest itself in the ward patient. The vast majority of participants (93.6%) determined that clinical deterioration was seen as a progressive decline in the patient's physiological state. Almost all participants (95.4%) agreed, that this led to alterations in the patient's vital signs alongside a disruption in the patient's organ function.

The view of clinical deterioration held by the participants agreed with definitions provided within the literature. Four key elements of patient deterioration have been identified and these included an: evolving; physiological; predictable; and symptomatic presentation (Lavioe et al., 2014). The participants of the study also agreed with the following definition of clinical deterioration:

One who moves from one clinical state to a worse clinical state which increases their individual risk of morbidity, including organ dysfunction, protracted hospital stay, disability, or death" (Jones et al 2013, p. 1031).

The frequency of clinical deterioration.

Clinical deterioration of the ward patient was found to be a common event occurring on a regular basis within the hospital setting. An overwhelming majority (86.2%) of participants were regularly involved in assessment, monitoring and providing care to the deteriorating ward patient within their current clinical roles. The participants were not only commonly in contact with the deteriorating ward patient, but also often actively involved in recognising and responding to clinical deterioration within their clinical roles. These findings support the current literature that continues to identify clinical deterioration and serious adverse events as a common issue within the acute hospital setting (ACSQHC, 2008; ACSQHC, 2010; ACSQHC, 2017; CECNSW, 2008; Department of Health, 2009; NCEPOD, 2005; NICE, 2007; NPSA, 2007).

Whilst recent studies identified that both graduate and registered nurses contribute to the response provided to the deteriorating ward patient (Jones et al, 2009,

Odell et al, 2009; Liaw et al, 2011; Purling & King, 2012; Massey et al, 2014; Massey, Chaboyer & Anderson, 2017; Ratta, 2016) none attempted to quantify the frequency of contact between GRNs and the deteriorating ward patient within everyday clinical duties.

Suboptimal care.

Areas of concern relating to the timely management of the deteriorating ward patient were the considerable delays in the medical review and the initiation of treatment. These issues may suggest an ongoing problem with “suboptimal care” and concurs with other studies which argue that it is a common problem in the hospital setting (McQuillan et al, 1998; NCEPOD, 2005; NICE, 2007; ACSQHC, 2010; Quirke et al, 2011). Similarly, GRNs were concerned about other issues associated with suboptimal care such as delays in diagnosis, treatment or referral, along with poor assessment and inadequate or inappropriate patient management (Franklin & Mathew, 1994; Hodgetts et al., 2002; McGloin et al, 1999; Quirke et al, 2011; Schein et al., 1990; Seward et al., 2002).

Demographics & the problem of clinical deterioration.

Participants employed within the public hospital system more frequently encountered the problem of clinical deterioration. This finding may be associated with the nature of the patients entering the public hospitals, often via the Emergency Department, and often requiring urgent care and needing specialist services for acute medical and surgical conditions (AIHW, 2017). These public hospital patients present with higher levels of acuity and comorbidity than the elective patients accessing the private hospital services.

The participants working within the lower acuity speciality areas, such as Aged Care or Rehabilitation wards, had less frequent contact with the deteriorating ward patient despite those areas having an overall increase in morbidity and mortality for their patient groups (AIHW, 2009). This issue may be explained by the risk of “futility of treatment” for a more frail and elderly population of patients as seen within the

lower acuity areas. Often frequent monitoring and the provision of a rapid response team are not appropriate for patients in the aged care or rehabilitation units as they often have multiple comorbidities and there is a likelihood of poor outcome from acute clinical intervention (Hogan et al, 2012).

Role of the GRN in Clinical Deterioration

The participants undertook three broad functions in managing the deteriorating ward patient. These were: the assessment, monitoring and detection of clinical deterioration; activating the RRS and calling for help; and providing basic initial intervention prior to medical review.

Assessment and monitoring of the deteriorating patient was the major function of the GRNs current clinical role and this role was supported in the literature (Aiken et al., 2003; Hogan, 2006; Kisiel & Perkins, 2006; Massey & Meredith, 2010). To facilitate the recognition of clinical deterioration in the ward patient, the GRNs predominantly utilised vital sign measurements. At times the GRNs relied upon more complex physical assessment, including devices such as ECG recording.

The use of vital sign data provided the GRN with patient data that could be used in conjunction with the RRS tracking system for risk stratification of the deteriorating patient. The majority of GRNs (67%) identified that they were responsible not only for the recording of vital signs, but also for the interpretation of the monitored data. The GRNs indicated that abnormal physiology and altered vital signs were extremely useful in providing an objective way to recognise and distinguish the clinical deterioration in their ward patients. The severity of abnormality in the vital signs were important in the determination of the patient's level of risk, and provided the GRNs with evidence to justify their activation of the RRS in the ward area.

These findings agreed with previous studies, which suggested that nurses are responsible for the recognition of physiological abnormalities and the comprehension of their significance (Clarke, 2004; Considine & Botti, 2004; Hogan, 2006; Kisiel & Perkins, 2006; Massey & Meredith, 2010). Also, the findings are consistent with the

literature suggesting registered nurses commonly report that changes in the patient's vital signs provide quantifiable indicators that the patient is deteriorating physiologically. Nurses flag deterioration to medical staff based on these findings in order to elicit approval for escalated responses (Andrews & Waterman, 2005; Gazarian et al., 2010). This action enabled the GRNs to make clinical decisions as to the level of monitoring and the frequency of monitoring required.

The regularity of monitoring undertaken by the GRNs, along with importance placed on vital signs, conflicted with current literature. For example several studies suggested the taking and recording of vital signs have become devalued by registered nurses, and often viewed as ritualistic and of low priority (Cardon-Morell et al., 2016; Hogan, 2006; Wheatley, 2006). There have also been a number of studies indicating that vital sign monitoring and physical assessment are poorly performed and inconsistently recorded by registered nurses; often relying on clinical judgement to identify when physical assessment is required (Cardon-Morell et al., 2016; Goldhill et al., 2005; Van Leuvan & Mitchell, 2008). In contrast however, GRNs in this study highly valued, and regularly undertook, vital sign observation in the acutely unwell ward patient. They used the data to make clinical judgments, to calculate the risk of serious adverse events and to determine the appropriate management of the deteriorating ward patient.

Likewise, the GRNs often used subjective physical assessment cues and intuition as a means of identifying clinical deterioration. An amalgamation of both objective and subjective data was used to determine a patient's condition. These findings concurred with previous studies, which suggested ward nurses appear to consider both subjective and objective signs of deterioration (Cioffi, 2000; Lavoie et al., 2016; Skrifvars et al., 2006).

Calling for help/activate RRS.

The GRNs in this study understood the importance of calling for help and importantly, were willing to call for help quickly when deterioration was detected. Significantly, the majority reported that it was within their role to activate the RRS, calling for the

MET team. They also identified it was their responsibility to alert senior nursing staff and confirmed it was their role to alert medical colleagues to a deteriorating patient. Conversely, multiple studies have highlighted that nurses are often reluctant or unwilling to activate the RRS and call for help (Crispin & Daffurn 1998; Hillman et al., 2015; Jones et al., 2006; Massey et al., 2015; Salamonson et al., 2006; Santiano et al., 2007 Subbe & Welch, 2013; Tee et al., 2008).

Providing initial intervention.

A key function undertaken by the majority of the GRNs in their clinical practice was the provision of initial intervention to the deteriorating ward patient prior to medical team review. Providing initial intervention, however, created anxiety and concern amongst many GRNs. The confidence to provide initial intervention prior to medical review was low, with nearly half the GRNs (45%) feeling less confident to intervene prior to medical review of the patient.

The GRNs felt more confident providing emergency or life-saving interventions, such as airway manoeuvres, or supplemental oxygen to support the deteriorating patient prior to medical review. This level of emergency intervention goes beyond the expectations provided by the ACSQHC, who mandated that nurses managing the deteriorating patient have the skills to provide cardiopulmonary resuscitation to a patient in cardiac arrest (ACSQHC, 2010; NSQHS, 2012). The findings of this study supported the literature suggesting that registered nurses do provide further basic emergency intervention prior to the arrival of the MET (Considine & Botti, 2004; Donohue & Endacott, 2010).

Demographics & role.

It was apparent that GRNs working within the private hospital setting had a number of differences in their roles when compared to their colleagues working within the public hospital setting. The GRNs working within private hospitals had less autonomy in decision making, regarding calls for help, than their colleagues in the public sector. They were also more reluctant to initiate treatment prior to medical staff review. This

difference could be associated with the ward culture and the medical hierarchy within the private hospital setting. Private hospitals have less junior medical staff covering the ward areas thus leaving the decisions and interventions to an on-call senior medical consultant. The GRNs were often reluctant to contact such senior staff directly, particularly out-of-hours, for fear of being reprimanded from both the medical consultant and senior nursing staff.

Significantly, GRNs in private hospitals were less likely to view the detection of the deteriorating ward patient as their responsibility. They were often more reluctant to provide emergency interventions including airway management with adjuncts along with a reluctance to provide basic life support interventions such as automated external defibrillation. Again there may be a number of reasons for these differences including hospital or ward culture, policy and procedures, education and training. These concerning discrepancies require research to provide an explanation that could lead to positive patient outcomes.

Acute Care Competencies

Defining competence.

The GRNs defined “competency” in terms of a practical ability, a set of well-developed skills that were supported by knowledge and education that facilitated safe and independent clinical practice. It was apparent from the findings that GRNs placed significant value and importance on clinical competency. All GRNs indicated that being clinically competent was an extremely important aspect of their practice. Being competent was something that the GRNs aspired to, it was seen as fundamental to their development and to safe clinical practice.

The interpretation of competence and the importance placed on being competent by the GRNs supported the current literature. Studies identified the possession of adequate knowledge, skills and attitudes for a particular purpose as core themes of competency (Alspach, 2008; Kendall-Gallagher & Blegen, 2009; Watson, Stimpson, Topping, & Porock, 2002; Yanhua & Watson, 2011). The literature reported

competency as a crucial attribute to ensuring quality and safe nursing care (Kendall-Gallagher & Blegen, 2009).

Validation of acute care competencies.

Acute care competencies were important and applicable to the GRNs practice with all five of the competency domains being identified as necessary to clinical practice. The entire 79 UKDH (2009) acute care competencies, were used by the majority of GRNs managing the deteriorating ward patient.

Twenty competencies that focused broadly on three key themes: assessment and monitoring; recognising deterioration; and calling for help were identified as crucial to the GRN role. Specifically, these key competencies addressed the assessment of airway and vital signs including: respiratory rate; oxygen saturation; heart rate; blood pressure; conscious level; and urine output. Alongside, these key competencies were the assessment of blood glucose, the timely recognition of clinical deterioration, and calls for urgent help. The frequent utilisation of these key competencies supported the literature describing assessment and monitoring of the acutely unwell patient as a key role for the registered nurse (Clarke, 2004; Massey & Meredith, 2010).

Interestingly, across the five competency domains, the “Patient Centred Care, Team Working and Communications” domain (Domain 5), was reported overall as the most important and frequently utilised overall by GRNs. The competencies within Domain 5 centred on: conveying clinical urgency; calling for urgent help; documentation; accountability and mitigation of risk. These competencies again supported the findings concerning the main role espoused by GRNs.

Surprisingly, the “Airway, Breathing, Ventilation and Oxygenation” domain (Domain 1) was least important of the five domains. This was contrary to studies highlighting the importance of prioritising airway and breathing in the initial approach to the management of the deteriorating patient (Liaw et al, 2011; Smith et al, 2002; Thim, Krarup, Grove, Rohde, & Løfgren, 2012). A number of the competency groups

within Domain 1 did, however, involve more technical interventions, addressing more complex respiratory tasks, often involving specialist knowledge. The high level of complexity within the domain may explain why the GRNs did not regard the Domain 1 competencies with the same importance as other domains. The GRNs were mindful of their capabilities and scope of practice, appropriately identifying competencies that were beyond their level of competence. Competencies linked to assessment, monitoring, communication, calling for help and emergency intervention, were regarded as the most important and frequently utilised in managing the deteriorating ward patient. More technical or specialist competencies that required complex intervention were of less importance to the GRNs.

Initial assessment and intervention to provide life-saving intervention was an accepted and frequent part of GRNs role. This supported the assertions from several government health organisations recommending that healthcare staff, including registered nurses, should have the ability to assess the acutely ill patient, interpret abnormal physiological parameters, and initiate appropriate early interventions including life-sustaining measures to address concerning patient deterioration (ACSQHC, 2010; IHI, 2004; NICE, 2007; Department of Health, 2009). Effective observation of vital signs and initiating prompt intervention to ward patients is often the key to providing appropriate and timely management to the deteriorating patient (NICE, 2007; Odell et al., 2009).

Level of Working

As mentioned in the literature review, the “chain of response” (COR) framework (see chapter 2), provided a set of five sequential roles. Each role had broadly defined functions to be undertaken by healthcare staff working at different levels of complexity, in relation to acute care competencies. This framework identified the complexity and level of work undertaken by the GRN in relation to the 79 acute care competencies (Department of Health, 2009).

The GRNs were at times, working across a number of COR roles when managing the deteriorating patient. These roles ranged from level 1: “Non-Clinical

Support” to, to level 5: “The Secondary Responder”. Significantly, the most frequent COR role undertaken by GRNs across competency groups was level 3: “The Recogniser” role. This was a major finding of the study, and the first time the GRN level of functioning in relation to management of the deteriorating patient had been determined. The primary function of COR “The Recogniser” role was the monitoring of the patient’s condition along with the interpretation of the data collected and the recognition of deterioration (Department of Health, 2009). The primary role of GRNs was the assessment, monitoring, detection and call for help in the clinical deterioration of a patient.

Despite the perceived differences in acuity of the clinical areas, the GRNs functioned at a similar COR level 3 across all clinical speciality areas when managing the deteriorating ward patient. The COR level 3, supported the primary role of the GRN in managing the deteriorating patient. It focused upon assessment, monitoring, recognition and calling for help. At times, however, the complexity and COR level of working increased, often to accommodate the GRNs undertaking of more complex tasks associated with the deteriorating patient’s need for intervention with airway, breathing and circulatory support.

No other studies could be located within the contemporary literature that attempted to explore or clarify the complexity or level of work undertaken by GRNs in their clinical management of the deteriorating patient. Neither could any be identified that explored the COR or the acute care competencies advocated by the UKDH. This study however, supports the generic recommendations made for an educated and suitably skilled healthcare workforce to provide appropriate care for the deteriorating patient (ACSQHC, 2010; McGloin et al., 1999; Schein et al., 1990; Smith et al., 2006; Story et al., 2004; NICE, 2007).

Level of Working & Demographics.

The area of speciality in which a GRN worked, influenced the COR level and the complexity of functioning for specific acute care competency groups within that clinical area. As an example, GRNs working in critical care identified interventions

related to Domain 1 (Airway, Breathing, Ventilation and Oxygenation) competencies as very important to their clinical practice, and undertook these competencies at a higher COR level in comparison to other areas of speciality. This finding may be influenced by the nature of the patients' condition within this area, many of whom often require advanced airway management and ventilatory support.

The nature of the area of speciality, the patients, and medical issues commonly dealt with influenced the COR level of working for some acute care competencies. This influence may be due to the experience gained by the GRNs in the areas of speciality, along with the development of competence and the support provided to deal with familiar problems.

Working within a private hospital setting influenced the COR level of working for GRNs. They often worked at lower COR level of complexity. A number of factors which have been eluded to previously may have influenced the role of the GRNs in identifying and managing the deteriorating patient within a private hospital.

Factors Impacting GRN Role

A number of factors adversely affected the capacity of the GRNs to undertake their role in managing the deteriorating ward patient. These factors included: lack of knowledge and competence; seeking permission; and scope of practice.

Lack of knowledge & competence.

Participants raised concerns regarding a lack of knowledge and competence to undertake the GRN clinical role in managing the deteriorating patient. These concerns centred on the knowledge required to make decisions, and the provision of clinical interventions. Competence influenced confidence levels and the course of action taken to manage the deterioration patient. This factor concurs with the dominant view that GRNs may lack the requisite knowledge and are inadequately prepared for the transition from student to graduate nurse (Clark & Holmes, 2007; Cubit & Lopez, 2012; Missen et al., 2010; Newton & McKenna, 2007). Graduate nurses need to be able

to practice safely and competently, utilising knowledge from their undergraduate education to achieve the required patient outcomes (Hickey, 2009; Meechan et al., 2011).

Contrarily, however, the majority of GRNs in this study identified that their undergraduate nursing program had provided the knowledge required to assess and monitor the deteriorating patient. It was, however, the lack of acute care clinical placements as an undergraduate student that prevented the development and consolidation of knowledge in the majority of GRNs. This discrepancy could be seen as leading to inadequate preparation of the graduate nurse and a lack of practice application of theory (Hickey, 2009).

Seeking permission.

A further factor that influenced the GRN in managing deteriorating patient, was seeking permission from senior nurses to act. Previous studies have highlighted the requirement for senior support of the GRNs, when facing adverse clinical events. An inability to process information has been associated with overwhelming complex clinical situations (Goode et al., 2013, Ranse & Arbon, 2008; Della Ratta, 2016).

The findings of the study, however, were contrary to the current literature. Whilst the graduates sought permission to act frequently, they had a clear understanding and comprehension of the patient's situation, along with the initial treatment required to manage the deteriorating patient. The GRNs often did not seek permission for the purpose of requiring clinical support. Instead the GRNs often sought permission to provide the intervention so as not to upset the hierarchy of the ward. Seeking permission to intervene occurred across all clinical speciality areas, in both public and private hospital settings.

The need to seek permission to intervene was influenced heavily by the ward culture and the hospital hierarchy. These two factors contributed significantly to the GRNs being fearful of "getting into trouble" for not seeking permission prior to taking action. This apprehension often led to anxiety and stress in many of the GRNs which

affected their willingness to act. Studies have linked the culture of the ward to a fear of being reprimanded and humiliated for taking action or activating the RRS (Cioffi, 2000; Massey et al., 2014, Tee et al., 2008).

Taking action has been closely linked to self-efficacy or a belief in one's own capability to perform a particular behaviour or role (Bandura, 1977). Self-efficacy and self-confidence are interrelated, the more self-confident the person is, the higher the level of self-efficacy, and the more inclined the person is to act (Pike & O'Donnell, 2010). High levels of stress and anxiety are linked with low self-confidence and low levels of self-efficacy. This in turn has been correlated with poor clinical reasoning skills and poor performance of nurses (Munroe et al., 2015). Nurses involved in the management of the deteriorating patient have identified that negative emotions such as stress, anxiety, panic and uncertainty have impacted their decision making and resulted in a reluctance to activate the RRS and call for help (Cioffi, 2000; Massey et al., 2015).

Scope of practice.

A further factor creating negative emotion and limiting capabilities amongst the GRNs was uncertainty related to their "scope of practice". The notion of "working outside of their scope of practice" created uncertainty, anxiety and stress with regards to the provision of intervention to the deteriorating patient. These issues reinforced the need to seek permission to intervene. The stress associated with the perception of legal and professional consequences of working outside of their scope of practice, often changed the way the GRNs acted. These findings concurred with studies that suggested that anxiety and stress associated with the perception of legal consequences changed the way nurses practice, making them fearful, reluctant to make decision and at times unwilling to take action for fear of getting in trouble (Savage et al., 2011).

The GRNs understanding of their scope of practice and inconsistency of expectations from senior staff along with negative emotions often clouded the need to seek permission to act. Complex interventions created uncertainty, despite GRNs having knowledge and skills to competently undertake the appropriate tasks. These

tasks, however, were viewed by the GRNs as outside of the “scope of practice” and the responsibility of senior staff. Previous studies identified similar beliefs in that nurses who are uncertain of their scope of practice defer decision-making and tasks to staff with higher authority as a way of minimizing the risk of legal consequences (Birks et al., 2016; Savage et al., 2011).

Lack of clarity & consistency.

The lack of clarity regarding the expected role of the GRN in managing the deteriorating patient was a factor impacting the performance of the GRNs. Uncertainty regarding the expectations of senior nursing and medical staff, created hesitation and negative emotions such as stress and anxiety. The lack of role clarification has been highlighted as a significant problem, impacting both experienced and new graduated registered nurses (Hamric, Spross & Hanson, 2009; Lu et al., 2008; Della Ratta, 2016). A lack of role clarification can often lead to role ambiguity, indeterminate expectations, diffuse responsibilities and uncertainty about sub-roles to be undertaken (Horsburgh, 1989; Kramer et al., 2013; Schuler et al., 1979).

The expectations and attitudes of senior nursing and medical staff were at times, inconsistent and unclear. This created confusion amongst the GRNs and led to further stress and uncertainty. Role stress occurs when there is incongruence or disparity between an individual's perceived role expectations and the actual achievements whilst performing the specific role (Chang & Hancock, 2003; Lambert & Lambert, 2001).

In summary, many factors including the need to seek permission, uncertainty about scope of practice, and a lack of clarity and consistency led to the GRNs experiencing negative emotions including anxiety, uncertainty and stress. The impact of negative emotions adversely affected the GRNs willingness to make decisions and to provide interventions to the deteriorating patient. These factors are concerning as the deteriorating ward patient might, in some cases, experience delays in assessment and treatment resulting in suboptimal care (Franklin & Mathew, 1994; Hodgetts et al., 2002; McGloin et al., 1999, Schein et al., 1990; Seward et al., 2002).

Improving the Capabilities of GRNs

An aim of the study was to ascertain from the GRNs, ways to improve their capabilities in the management of the deteriorating ward patient. A number of common suggestions were provided by the GRNs and are outlined below.

Improving competency.

Clinical competence was viewed by GRNs as an essential component, providing the capabilities required to function in their role. To guide and develop clinical competence in the assessment and management of the deteriorating patient, the key strategy advocated by the GRNs was the use of acute care competency standards (ACCS) in both undergraduate and graduate programs. The participants argued for the use of ACCS supported by a formal competency assessment process applied within the clinical setting. The participants suggested that ACCS would provide clarity, consistency and constructive feedback to improve their clinical capabilities.

This approach to improving competency is supported in the literature. Nursing competence has long been associated with the technical aspect of performance, and used to measure the skills and knowledge of nurses in the development of more advanced roles (Axley, 2008; Halcomb et al., 2016). Using competency standards enabled clinical competence to be attained via practical experience, the integration of theory into practice, and the development of critical thinking and team-working (Cubit & Leeson, 2009; Levett-Jones & FitzGerald, 2005). The role clarity provided by ACCS, was seen by the GRNs as a means to delineate their scope of practice, and provide assurance that they were working within acceptable legal and professional boundaries. It would also establish consistency amongst senior nursing and medical staff about the GRNs role.

Education & knowledge.

Targeted education and training were advocated by the GRNs as a way to redress their clinical deterioration knowledge deficits. This suggestion agreed with numerous

studies supporting the need for further education and the development of knowledge in nurses to manage the deteriorating patient (ACSQHC, 2014; Buist et al., 1999; Endacott et al., 2007; NICE, 2007; Wood et al., 2004). The GRNs advocated an increased focus on clinical deterioration within the undergraduate nursing programs. This focus could be supported by appropriate scenario based learning, simulation training and clinical placements. Alongside this suggestion, the GRNs recommended the use of ACCS and clinical competency assessment.

The GRNs argued for specialised education and training within the graduate programs, focusing on the evidence base and rationale for the RRS, the use of the early warning scoring system and the role of the MET team. They argued that education should take place within the first few months of entering their graduate year. Overwhelmingly, the GRNs supported the use of multidisciplinary team, clinically focused, scenario based training, with high fidelity simulation. These strategies were supported by the current literature (Buckley & Gordon, 2011; Liaw et al., 2011; Odell et al., 2009). Importantly, GRNs agreed that regular education and training should include both theory application to the clinical area, to improve their competence in the management of the deteriorating patient.

Mentorship.

Although some participants had mentors, it was not formalised. It was suggested that this be rectified by the formal allocation of mentors. The literature suggested that a carefully chosen mentor-mentee matching improves the success of a mentoring program (Tiew, Koh, Creedy, & Tam, 2017). In addition, the GRNs argued the need for protected time to work with their allocated mentor(s) and to have regular feedback in regards to their progress and performance would be beneficial.

Clinical support.

To enable a supportive and inclusive ward culture and clinical environment, the GRNs recommended the use of multidisciplinary team critical event debriefing sessions as a way to improve professional communication, role clarity and performance. The

opportunity to debrief as a team was seen by the GRNs as a means to improve team-working, understand the multidisciplinary team roles, the decision making processes, alongside identifying lessons learnt and points for improvement. This view agrees with the literature suggesting that debriefing following a clinical event encourages communication, enabling participants to reflect, improve future performance, team working, and patient outcomes (Buykx et al., 2011; Shinnars, Africa, & Hawkes, 2016).

Clinical support from the ward-based staff development nurse (SDN) was also identified as important to the GRNs developing their competencies. They recognised the need to spend more time working alongside the SDN to support their practice. A formal process of allocated time for each graduate to meet and work with the SDN was advocated to replace what was often ad hoc. This support would provide structure and the opportunity for equity in access to the SDN for all GRNs within the clinical areas.

Conclusion of Discussion

There remains a significant gap within the literature related to defining or exploring the role of the GRN in the detection and management of the deteriorating ward patient. Without clarification of the role to be undertaken by the registered nurse, it is very difficult to decipher the required focus for competence and the level of working and complexity needed to undertake the role. Generic recommendations provide little clarity in this matter. No studies could be identified that specified the expected or actual role or functions undertaken by the GRNs in the management of the deteriorating patient.

The main purpose of this study was to redress this gap within the literature, identifying the role undertaken by the GRN in their current clinical practice. As far as is known, this is the first study to determine the specific role undertaken by the GRN in the management of the deteriorating patient. This study has provided the first quantifiable evidence that assessment, monitoring and recognition of the deteriorating patient, is a regular and ongoing part of the GRNs clinical role. The findings of the study also provide evidence that GRNs are actively utilising acute care competencies

within their clinical practice and are prioritising and selecting pertinent competencies that focus upon their main role to assess, monitor, detect and alert others to the deteriorating patient in their clinical practice. This study has provided insight into the level of working and the complexity of the role undertaken by the GRN in managing the deteriorating ward patient. It is hoped that it will provide some clarity as to the role undertaken, the appropriate competencies required, and the level of complexity needed by future GRNs.

The data collected for the study, sampled GRNs working within the Perth metropolitan area of Western Australia. The recommendations, however, are applicable to all health care providers, health care facilities, universities, nursing boards and health departments within all the States and Territories of Australia. The broad findings and recommendations may also have application internationally.

Recommendations of the Study

The findings of the study clearly demonstrate that GRNs are involved in recognising and responding to the deteriorating ward patient. To undertake this role, the GRNs utilise specific acute care competencies to provide assessment and management to the acutely unwell patient. Clearly, a number of factors have influenced the GRNs in their role and they have identified strategies for improving their nursing practice. The recommendations of this study are based upon these findings in an effort to ensure better patient outcomes.

The recommendations of this study include:

- A national statement clarifying the broad expectation of the registered nurses' role in the management of the clinically deteriorating ward patient. It should include: monitoring; detecting; alerting; and the provision of emergency intervention.

- A national recommendation for the adoption and use of a comprehensive set of acute care competency statements to develop competency amongst all registered nurses managing the deteriorating ward patient.
- The incorporation of the acute care competency statements into both undergraduate nursing education programs and the graduate nurse programs, supported by competency based assessment within the clinical practice setting and appropriate acute care placements.
- The provision of additional acute care education and training within both undergraduate nursing education and graduate nurse programs addressing: the common causes of clinical deterioration; the signs of clinical deterioration; the rationale for the RRS and MET; and the use of the track and trigger early warning systems.
- The provision of a formal mentorship program for all graduate nurses working within the hospital setting, including the allocation of appropriate mentors and protected time to meet.
- The provision of regular hospital based multi-professional training using high fidelity simulation, focused on the recognition, initial assessment and response to the clinically deteriorating ward patient.
- The use of ward-based, facilitated, multi-professional debriefing sessions following the occurrence of adverse clinical events within the ward area.
- Greater consultation and cooperation between nursing regulatory boards, tertiary education providers and health care providers as to the expected role of the GRN and their scope of practice, in the management of the deteriorating ward patient.
- Further research into the expected roles and competencies of the registered nurse and other allied and medical staff in the management of the deteriorating patient.

Limitations

The main limitation for the study was the reduced response rates for the two questionnaires, Q-Role and Q-Comp. Whilst the number of responses to the

questionnaires was enough to provide valuable data and insight into the graduate nurse's role, an increased response rate may have provided further useful information and could be generalised to a larger population.

A further limitation of the study was that GRN sample was confined to the Perth metropolitan area. Ideally a sample including GRNs from regional and rural WA, alongside GRNs from all States and Territories within Australia could have provided further valuable data and inclusive representation. It may be the case that internationally, the preparation and characteristics of the GRNs are similar, and the findings and recommendations, therefore, pertinent to those countries.

Chapter Summary

The study has provided further support for the use of a mixed methods approach to comprehend and explain the role of the GRN in the management of the deteriorating ward patient. It has significantly added to the body of knowledge within the current contemporary literature.

Within this chapter, the findings of both quantitative and qualitative data have been synthesised to produce meta-inferences answering the research questions. The discussion chapter has incorporated the current research evidence in the presentation of the meta-inferences, to provide a comparison of the study's findings with the current contemporary literature.

This study has significantly contributed new knowledge concerning the graduate nurse and the clinically deteriorating patient. The study has provided an evidence based account of the role of the graduate registered nurse in the management of the deteriorating ward patient and new understanding of the competencies utilised to by the GRN, and the complexities and challenges faced by the GRN in undertaking this role.

The chapter has provided recommendations from the findings of the study for all Health care providers, Health care facilities, Universities, Nursing Boards and Health Departments within Australia. Finally, the chapter has provided an account of the key limitations of the study.

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Appendix 1: Ethical Approval

Ethical Approval: University of Notre Dame Australia HREC



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CRICOS PROVIDER CODE: 01632F

1 November 2012

Mr Steven Hardman
School of Nursing and Midwifery
The University of Notre Dame, Australia
Fremantle Campus

Reference Number: 012076F

Dear Steven,

I am writing to you in regards to your Low Risk Ethical Review Application for your proposed research, to be undertaken as a student project at The University of Notre Dame Australia. The title of the project is: *"The identification of the role and competencies of the graduate nurse in recognising and responding to the deteriorating patient in an acute ward environment: A mixed methods study."*

Your proposal has been reviewed by the University's Human Research Ethics Committee, and based on the information provided has been assessed as meeting all the requirements as mentioned in the *National Statement on Ethical Conduct in Human Research* (2007). Therefore, I pleased to advise that ethical clearance has been granted for this proposed study.

All research projects are approved subject to standard conditions of approval. Please read the attached document for details of these conditions.

On behalf of the Human Research Ethics Committee, I wish you well with what promises to be a most interesting and valuable study.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Natalie Giles'.

Dr Natalie Giles
Executive Officer, Human Research Ethics Committee
Research Office

cc: Prof Selma Allex, Deen, School of Nursing;
A/Prof Adrian Morgan, SRC Chair, School of Nursing.

Ethical Approval: South Metropolitan Health Service HREC

Subject: RE: Ethical Approval for PhD focus groups at Armadale Hospital

Hi Steven

As discussed with you today.

As the study has been reviewed and approved by the Nursing Research Committee FHHS, it will not require SMHS HREC review.

Many thanks

Amanda

Amanda Carter | A/Ethics Coordinator | SIRO Research Ethics & Governance Unit South Metropolitan Health Service Level 2, Southern Research Facility (Perkins building) Fiona Stanley Hospital 102-118 Murdoch Drive Murdoch WA 6150

T: 08 6151 1180 / 1175

E: Amanda.carter@health.wa.gov.au

Delivering a Healthy WA

Ethical Approval: St John of God Health Care HREC

29 April 2015

Mr Steven Hardman
PhD Candidate, School of Nursing & Midwifery
University of Notre Dame
PO Box 1225
FREMANTLE, WA 6959

Dear Mr Hardman,

Re: The identification of the role and competencies of the graduate nurse in recognising and responding to the deteriorating patient in an acute ward environment: A Mixed Method Study (Our ref No: 778)

I refer to the letter of 29 April 2015, advising of ethical approval of the above "low risk" study, as granted by the St John of God Health Care Human Research Ethics Committee.

I understand that St John of God Subiaco Hospital ("the participating site") is supportive of having Phase 3 of this study conducted at its site. Accordingly, I now confirm final approval for your study to be conducted at the participating site.

I wish you well with your research.

Yours sincerely



Dr Mark Lubliner
Group Director Medical Services
St John of God Health Care

cc. Dr Janie Brown (via email)
cc. Ms Laura Colvin, Director of Nursing & Midwifery, SJG Subiaco Hospital (via email)

Appendix 2: Phase 1 Expert Consent

Phase 1: Expert Panel Consent Form



Dear Colleague,

I am currently enrolled as a PhD candidate at the University of Notre Dame Australia, School of Nursing and Midwifery. My PhD research project is entitled "The identification of the role and competencies of the graduate nurse in recognising and responding to the deteriorating patient in an acute ward environment: A mixed methods study". It explores the role of the graduate nurse in caring for the acutely unwell deteriorating ward patient and identifies the competencies that are important in caring for these patients.

There are four phases in my research project, two of which will involve graduate nurses and data collection. The first phase of data collection involves asking graduate nurses to complete an online questionnaire looking at their current involvement with acutely unwell ward patients and rating the importance of preselected competencies in their provision of care. The second phase of data collection will involve focus group interviews with graduate nurses to explore in more depth their role and future training needs to manage the deteriorating ward patient.

Benefits of the study will include clarification of the graduate nurse's role managing the deteriorating ward patient, an outline of the relevant clinical competencies required for managing the deteriorating ward patient, guidance for educational institutions and graduate programs to reflect the roles and competencies required in developing graduate nurses.

I am inviting you to participate in the development of the questionnaire for this project. I require experienced nurses to help by reviewing the questions to be posed to the graduate nurses in the first phase of data collection. This will involve reading through the proposed questions, checking the clarity of the questions, internal consistency and validity and making any comments necessary to help refine the questions before a pilot study can be undertaken.

A full set of instruction will be given for each part of the questionnaire review along with a response sheet for your comments. The project has been approved by the University of Notre Dame Australia Human Research Ethics Committee. Your privacy and the confidentiality of any information you provide are guaranteed. All

I hope you will be able to contribute to the study and look forward to receiving your feedback. A consent form for involvement in the development of the study is provided below. If you could sign and date it and return it to myself either by hand or by post to the address below. Thanks for your involvement.

Kind regards

Steven Hardman

Senior Lecturer
School of Nursing & Midwifery
The University of Notre Dame Australia
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Phone: + 61 8 9433 0275 Fax: + 61 8 9433 0227
Email: Steven.Hardman@nd.edu.au Web: www.nd.edu.au



CONSENT FORM

Title of Project: *"The identification of the role and competencies of the graduate nurse in recognising and responding to the deteriorating patient in an acute ward environment: A mixed methods study"*.

Name of Researcher: **Steven Hardman**

Please initial

1. I confirm that I have read and understand the information concerning the above study and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason or legal rights being affected.

3. I agree to take part in the development of the above PhD study and will treat all information disclosed as confidential.

Name of Participant

Date

Signature

Researcher

Date

Signature

Expert Review: PARTS 2 & 3

Apparent Internal Consistency & Content Validity

Dear

Thank you for agreeing to participate as an expert reviewer for my PhD project concerning the graduate nurses' role and perceived level of competence in the care and management of the deteriorating ward patient.

To continue the process of refinement for the questionnaire, I again need your help. This will involve reading through two separate sets of proposed questions and checking; Part 2: the internal consistency and Part 3: the content validity of the questions.

A full set of instruction will be given for each part of the questionnaire review along with a response sheet for your comments.

The project has been approved by the University of Notre Dame Australia Human Research Ethics Committee (Ref No: 012076F). Your privacy and the confidentiality of any information you provide are guaranteed.

I hope you will be able to continue to contribute to the study and look forward to receiving your feedback. Thanks again for your continuing help and support.

Kind regards

Steve

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Appendix 3: Expert Panel Review of Clarity (Q-Role)



Instructions

Research Questions: Clarity of Questions

The questions below have been designed to gather data concerning the graduate nurses' role and perceived level of competence in the care and management of the deteriorating ward patient. The questions were developed following an extensive review of the current literature focusing upon the detection and management of clinically deteriorating hospital patient, the role of the registered nurse and the competencies required to care for the deteriorating ward patient.

This review of the questions is designed to highlight any issues with the clarity, the comprehension, the clearness, the explicitness and legibility of the questions listed. Please read each question below carefully and indicate whether the item is clear or unclear by circling the appropriate response. Please write any comments you feel are appropriate in the space provided next to each question.

Once you have finished reviewing the questions then please feel free to discuss your comments with myself. Thank you for your help.

Regards,

Steve Hardman

Question	Please circle appropriate response		Comments
	Clear	Unclear	
Acutely ill deteriorating patients are well managed within the hospital ward setting	Clear	Unclear	
My graduate nurse program provides a clear set of competencies needed for the initial treatment and management of the deteriorating ward patient	Clear	Unclear	
As a graduate nurse I believe it should be my role to monitor the acutely ill deteriorating ward patient	Clear	Unclear	
It is my role to initiate treatment before the medical team arrive to review the deteriorating ward patient	Clear	Unclear	
I'm expected to look after the acutely ill ward patient in my current clinical area of work	Clear	Unclear	
I have a clear understanding of my responsibilities when dealing with the acutely ill deteriorating ward patient	Clear	Unclear	
In my undergraduate nursing course I had relevant clinical practice placements where I was able to assess and manage the deteriorating ward patient with support	Clear	Unclear	
I am an important part of the decision making process	Clear	Unclear	
Sudden decline and clinical deterioration of the patients' condition is a common event in the hospital	Clear	Unclear	
I feel supported by my nursing colleagues when I call for help	Clear	Unclear	
I feel my knowledge and clinical competence to assess and monitor the deteriorating ward patient could be improved	Clear	Unclear	
In my undergraduate nursing course I was taught relevant clinical competencies to provide effective care for ward patients	Clear	Unclear	
The deteriorating ward patient often experiences delays in being reviewed by medical staff	Clear	Unclear	
As a graduate nurse I believe it should be my role to alert medical staff to the presence of an acutely ill deteriorating ward patient	Clear	Unclear	
A clear set of relevant competencies to assess and manage the deteriorating ward patient would have been useful during my undergraduate nursing course	Clear	Unclear	
In my undergraduate nursing course I was taught specific clinical competencies to provide initial treatment to the deteriorating ward patient	Clear	Unclear	
Acutely ill deteriorating patients are often poorly managed within the hospital ward setting with delays in assessment and treatment	Clear	Unclear	
In my undergraduate nursing course I was taught specific clinical competencies to monitor the deteriorating ward patient	Clear	Unclear	

My graduate nurse program provides a clear set of competencies needed for assessing and monitoring the deteriorating ward patient	Clear	Unclear	
Acute deterioration of the patients' condition is often challenging to detect	Clear	Unclear	
I feel confident assessing and monitoring the acutely ill deteriorating ward patient	Clear	Unclear	
I feel confident calling for help when a patient becomes unwell	Clear	Unclear	
As a graduate nurse I believe it should be my role to alert senior nursing staff to the presence of an acutely ill deteriorating ward patient	Clear	Unclear	
There are often times when I feel out of my depth assessing and managing the deteriorating ward patient	Clear	Unclear	
I feel supported by medical staff when I call for help	Clear	Unclear	
I have the right level of knowledge to assess and monitor the acutely ill deteriorating ward patient	Clear	Unclear	
As a graduate nurse I believe it should be my role to provide initial treatment to the acutely ill deteriorating ward patient	Clear	Unclear	
My current clinical area of work encourages the development of relevant clinical competencies to manage the deteriorating ward patient	Clear	Unclear	
My current clinical area of work has specific policies and procedures for monitoring the acutely ill deteriorating patient	Clear	Unclear	
The deteriorating ward patient often experiences delays in being treated by medical staff	Clear	Unclear	
Acute deterioration of the patients' condition can be easily detected	Clear	Unclear	
Clinical deterioration often leads to a homeostatic imbalance and organ dysfunction	Clear	Unclear	
There is a clear policy and procedure in my current clinical area of work for alerting help when a patient deteriorates	Clear	Unclear	
I feel confident to initiate treatment before the medical team have reviewed the deteriorating ward patient	Clear	Unclear	
Acute illness is a common problem in the hospital setting	Clear	Unclear	
As a graduate nurse I believe it should be my role to assess the acutely ill deteriorating ward patient	Clear	Unclear	
It is my responsibility to detect clinical deterioration in the ward patient	Clear	Unclear	
I feel confident talking to the medical staff and explaining my concerns about the deteriorating ward patient	Clear	Unclear	
Having a clearly defined role in the management of the deteriorating ward patient would help me to develop my clinical competence	Clear	Unclear	

Acutely ill deteriorating patients are often poorly managed within my current clinical area of work with delays in assessment and treatment	Clear	Unclear	
The responsibility of calling for help when a patient deteriorates lies with the person detecting the patients decline	Clear	Unclear	
Sudden decline and clinical deterioration of the patients' condition is a common event in my current clinical area of work	Clear	Unclear	
It is not my role to formulate a management plan for the deteriorating patient	Clear	Unclear	
I have the right level of competence to assess and monitor the acutely ill deteriorating ward patient	Clear	Unclear	
I have a clear understanding of my role when dealing with the acutely ill deteriorating ward patient	Clear	Unclear	
Being clinically competent in the assessment and management of the deteriorating ward patient is important for graduate nurses	Clear	Unclear	
It is my role to call the medical emergency team when a patient is acutely ill and deteriorating	Clear	Unclear	
I am able to interpret the findings of my assessment and formulate a management plan for the deteriorating patient	Clear	Unclear	
It is important to call for help quickly when a patient deteriorates	Clear	Unclear	
I have no idea what my role is when faced with an acutely ill deteriorating ward patient	Clear	Unclear	
The lack of clarity outlining my role and responsibilities when dealing with the deteriorating ward patient is often frustrating	Clear	Unclear	
The deteriorating ward patients in my current clinical area of work are always given priority by the nursing staff	Clear	Unclear	
My current clinical area of work encourages the development of relevant clinical competencies to assess and monitor the deteriorating ward patient	Clear	Unclear	
In my undergraduate nursing course I was taught specific clinical competencies to assess the deteriorating ward patient	Clear	Unclear	
Clinical competence is important in the delivery of effective patient care	Clear	Unclear	
It is my role to assess and monitor the acutely ill deteriorating ward patient	Clear	Unclear	
I often feel confused about my responsibilities when dealing with the acutely ill deteriorating ward patient	Clear	Unclear	
There are often times when I feel out of my depth in my role caring for the acutely ill deteriorating ward patient	Clear	Unclear	
In my undergraduate nursing course there was very little focus on clinical competencies to assess and manage the deteriorating ward patient	Clear	Unclear	

The deteriorating ward patients in my current clinical area of work are always given priority by the medical staff	Clear	Unclear	
Within my current clinical area of work, acutely ill patients are commonly admitted	Clear	Unclear	
I feel my knowledge and clinical competence to treat and manage the deteriorating ward patient could be improved	Clear	Unclear	
I often feel confused about my role when dealing with the acutely ill deteriorating ward patient	Clear	Unclear	
Medical staff are able to guide me and clarify my role and responsibilities dealing with the acutely ill deteriorating ward patient	Clear	Unclear	
My main role is monitoring the patient, interpreting measurements and adjusting frequency and levels monitoring required by the acutely unwell ward patient	Clear	Unclear	
My current clinical area of work has specific policies and procedures for the management of the acutely ill deteriorating patient	Clear	Unclear	
I have the right knowledge to make decisions about the deteriorating ward patient's management	Clear	Unclear	
Clinical deterioration can be defined as the progressive decline in the physiological state of the patient	Clear	Unclear	
My main role is recording the observations and vital signs of the acutely ill deteriorating ward patient	Clear	Unclear	
I have the right level of competence to make decisions about the deteriorating ward patient's management	Clear	Unclear	
I feel confident talking to nursing staff and explaining my concerns about the deteriorating ward patient	Clear	Unclear	
My nursing colleagues are able to guide me and clarify my role and responsibilities dealing with the acutely ill deteriorating ward patient	Clear	Unclear	
Decisions about patient management are made quickly when the patient is acutely ill or deteriorating	Clear	Unclear	
My role goes beyond recording vital signs and includes interpreting measurements and initiating a clinical management plan e.g. commencing oxygen therapy, insertion of airway adjuncts, selection of Intravenous fluids and administration of a bolus of fluid	Clear	Unclear	
Acutely ill deteriorating patients are well managed within my current clinical area of work	Clear	Unclear	

End of Questions

**Appendix 4: Expert Panel Review Apparent Internal
Consistency (Q-Role)**



PART 1: Apparent Internal Consistency:

Potential Questionnaire Items Review

Instructions

The potential questionnaire items below have been designed to gather data concerning the graduate nurses' role and perceived level of competence in the care and management of the deteriorating ward patient. The items were developed following an extensive review of the current literature focusing upon the detection and management of clinically deteriorating hospital patient, the role of the registered nurse and the competencies required to care for the deteriorating ward patient.

You are being asked to look at potential questionnaire items listed in separate sets below and indicate if these items belong together. Please look at one set of items at a time.

1. Please read the entire set of items in the list before answering the response questions for that set.
2. Once you have read the entire set of items, please answer question 1 at the top of the page first.
3. Then please answer question 2 for each individual item in the set.
4. Please write any comments you feel are appropriate in the space provided next to each item.

Once you have finished reviewing the potential questionnaire items, feel free to discuss your comments with myself. Could you please return the completed review to me by **Friday the 22nd February 2013**. Thank you for your help.

Regards,

Steve Hardman

Apparent Internal Consistency: Set 1

1. Do these question items “generally” belong together in this question set? YES / NO

(Please circle answer)

2. In the box below, please read each question item carefully and decide if each question belongs in this set of questions. Please circle YES or NO and add any comments you feel are necessary.

Question item	Does each question item belong in this set of questions?		Comments
Clinical deterioration can be defined as the progressive decline in the physiological state of the patient	YES	NO	
Clinical deterioration often leads to a homeostatic imbalance and organ dysfunction	YES	NO	
Acute illness is a common problem in the hospital setting	YES	NO	
Within my current clinical area of work, acutely ill patients are commonly admitted	YES	NO	
Sudden decline and clinical deterioration of the patients' condition is a common event in the hospital	YES	NO	

End of set

Apparent Internal Consistency: Set 2

1. Do these question items “generally” belong together in this question set? YES / NO

(Please circle answer)

2. In the box below, please read each question item carefully and decide if each question belongs in this set of questions. Please circle YES or NO and add any comments you feel are necessary.

Question item	Does each question item belong in this set of questions?		Comments
Acutely ill deteriorating patients are often poorly managed within the hospital ward setting with delays in assessment and treatment	YES	NO	
Acutely ill deteriorating patients are often poorly managed within my current clinical area of work with delays in assessment and treatment	YES	NO	
The deteriorating ward patient often experiences delays in being reviewed by medical staff	YES	NO	
The deteriorating ward patient often experiences delays in being treated by medical staff	YES	NO	

End of set

Apparent Internal Consistency: Set 3

1. Do these question items “generally” belong together in this question set? YES / NO

(Please circle answer)

2. In the box below, please read each question item carefully and decide if each question belongs in this set of questions. Please circle YES or NO and add any comments you feel are necessary.

Question item	Does each question item belong in this set of questions?		Comments
Acute deterioration of the patients' condition can be easily detected	YES	NO	
Acute deterioration of the patients' condition is often challenging to detect	YES	NO	
My current clinical area of work has specific policies and procedures for monitoring the acutely ill deteriorating patient	YES	NO	

End of set

Apparent Internal Consistency: Set 4

1. Do these question items “generally” belong together in this question set? YES / NO

(Please circle answer)

2. In the box below, please read each question item carefully and decide if each question belongs in this set of questions. Please circle YES or NO and add any comments you feel are necessary.

Question item	Does each question item belong in this set of questions?		Comments
It is important to call for help quickly when a patient deteriorates	YES	NO	
There is a clear policy and procedure in my current clinical area of work for alerting help when a patient deteriorates	YES	NO	
I feel confident talking to the medical staff and explaining my concerns about the deteriorating ward patient	YES	NO	
Acutely ill deteriorating patients are well managed within the hospital ward setting	YES	NO	
Acutely ill deteriorating patients are well managed within my current clinical area of work	YES	NO	
My current clinical area of work has specific policies and procedures for the management of the acutely ill deteriorating patient	YES	NO	
The deteriorating ward patients in my current clinical area of work are always given priority by the nursing staff	YES	NO	
The deteriorating ward patients in my current clinical area of work are always given priority by the medical staff	YES	NO	
Decisions about patient management are made quickly when the patient is acutely ill or deteriorating	YES	NO	

Apparent Internal Consistency: Set 5

1. Do these question items “generally” belong together in this question set? YES / NO

(Please circle answer)

2. In the box below, please read each question item carefully and decide if each question belongs in this set of questions. Please circle YES or NO and add any comments you feel are necessary.

Question	Does each question item belong in this set of questions?		Comments
I feel confident assessing and monitoring the acutely ill deteriorating ward patient	YES	NO	
I have the right level of knowledge to assess and monitor the acutely ill deteriorating ward patient	YES	NO	
I have the right level of competence to assess and monitor the acutely ill deteriorating ward patient	YES	NO	
I feel confident calling for help when a patient becomes unwell	YES	NO	
I feel confident talking to nursing staff and explaining my concerns about the deteriorating ward patient	YES	NO	
I am able to interpret the findings of my assessment and formulate a management plan for the deteriorating patient	YES	NO	
I feel confident to initiate treatment before the medical team have reviewed the deteriorating ward patient	YES	NO	
I have the right knowledge to make decisions about the deteriorating ward patient’s management	YES	NO	
There are often times when I feel out of my depth in my role caring for the acutely ill deteriorating ward patient	YES	NO	
Clinical competence is important in the delivery of effective patient care	YES	NO	

In my undergraduate nursing course I was taught relevant clinical competencies to provide effective care for ward patients	YES	NO	
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In my undergraduate nursing course I was taught specific clinical competencies to assess the deteriorating ward patient	YES	NO	
In my undergraduate nursing course I was taught specific clinical competencies to monitor the deteriorating ward patient	YES	NO	
In my undergraduate nursing course I was taught specific clinical competencies to provide initial treatment to the deteriorating ward patient	YES	NO	
In my undergraduate nursing course I had relevant clinical practice placements where I was able to assess and manage the deteriorating ward patient with support	YES	NO	
In my undergraduate nursing course there was very little focus on clinical competencies to assess and manage the deteriorating ward patient	YES	NO	
A clear set of relevant competencies to assess and manage the deteriorating ward patient would have been useful during my undergraduate nursing course	YES	NO	
My graduate nurse program provides a clear set of competencies needed for assessing and monitoring the deteriorating ward patient	YES	NO	
My graduate nurse program provides a clear set of competencies needed for the initial treatment and management of the deteriorating ward patient	YES	NO	
Being clinically competent in the assessment and management of the deteriorating ward patient is important for graduate nurses	YES	NO	
My current clinical area of work encourages the development of	YES	NO	

relevant clinical competencies to assess and monitor the deteriorating ward patient			
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My current clinical area of work encourages the development of relevant clinical competencies to manage the deteriorating ward patient	YES	NO	
There are often times when I feel out of my depth assessing and managing the deteriorating ward patient	YES	NO	
I feel my knowledge and clinical competence to assess and monitor the deteriorating ward patient could be improved	YES	NO	
I feel my knowledge and clinical competence to treat and manage the deteriorating ward patient could be improved	YES	NO	

End of set

Apparent Internal Consistency: Set 6

1. Do these question items “generally” belong together in this question set? YES / NO

(Please circle answer)

2. In the box below, please read each question item carefully and decide if each question belongs in this set of questions. Please circle YES or NO and add any comments you feel are necessary.

Question	Does each question item belong in this set of questions?		Comments
It is my responsibility to detect clinical deterioration in the ward patient	YES	NO	
It is my role to assess and monitor the acutely ill deteriorating ward patient	YES	NO	
The responsibility of calling for help when a patient deteriorates lies with the person detecting the patients decline	YES	NO	
I feel supported by my nursing colleagues when I call for help	YES	NO	
I feel supported by medical staff when I call for help	YES	NO	
It is not my role to formulate a management plan for the deteriorating patient	YES	NO	
It is my role to initiate treatment before the medical team arrive to review the deteriorating ward patient	YES	NO	
I am an important part of the decision making process	YES	NO	
I’m expected to look after the acutely ill ward patient in my current clinical area of work	YES	NO	
I have a clear understanding of my role when dealing with the acutely ill deteriorating ward patient	YES	NO	

I have a clear understanding of my responsibilities when dealing with the acutely ill deteriorating ward patient	YES	NO	
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I often feel confused about my role when dealing with the acutely ill deteriorating ward patient	YES	NO	
I often feel confused about my responsibilities when dealing with the acutely ill deteriorating ward patient	YES	NO	
The lack of clarity outlining my role and responsibilities when dealing with the deteriorating ward patient is often frustrating	YES	NO	
My nursing colleagues are able to guide me and clarify my role and responsibilities dealing with the acutely ill deteriorating ward patient	YES	NO	
Medical staff are able to guide me and clarify my role and responsibilities dealing with the acutely ill deteriorating ward patient	YES	NO	
As a graduate nurse I believe it should be my role to assess the acutely ill deteriorating ward patient	YES	NO	
As a graduate nurse I believe it should be my role to alert senior nursing staff to the presence of an acutely ill deteriorating ward patient	YES	NO	
As a graduate nurse I believe it should be my role to alert medical staff to the presence of an acutely ill deteriorating ward patient	YES	NO	
It is my role to call the medical emergency team when a patient is acutely ill and deteriorating	YES	NO	
As a graduate nurse I believe it should be my role to monitor the acutely ill deteriorating ward patient	YES	NO	
As a graduate nurse I believe it should be my role to provide initial treatment to the acutely ill deteriorating ward patient	YES	NO	

My main role is recording the observations and vital signs of the acutely ill deteriorating ward patient	YES	NO	
My main role is monitoring the patient, interpreting measurements and adjusting frequency and levels monitoring required by the acutely unwell ward patient	YES	NO	

My role goes beyond recording vital signs and includes interpreting measurements and initiating a clinical management plan e.g. commencing oxygen therapy, insertion of airway adjuncts, selection of Intravenous fluids and administration of a bolus of fluid	YES	NO	
I have no idea what my role is when faced with an acutely ill deteriorating ward patient	YES	NO	
Having a clearly defined role in the management of the deteriorating ward patient would help me to develop my clinical competence	YES	NO	

End of set

Appendix 5: Expert Panel Review of Content Validity (Q-Role)



PART 3: Content Validity:

Questionnaire Items Review

Instructions

The potential questionnaire items below have been designed to gather data concerning the graduate nurses' role and perceived level of competence in the care and management of the deteriorating ward patient. The items were developed following an extensive review of the current literature focusing upon the detection and management of clinically deteriorating hospital patient, the role of the registered nurse and the competencies required to care for the deteriorating ward patient.

You are being asked to look at the potential questionnaire items listed in the separate sets below and indicate if these items measure various aspects of the graduate nurses' perceptions of their role and level of competence to detect and manage the clinically deteriorating ward patient.

Please look at one set of items at a time. Read the entire set of items in the list before answering the response questions for that set.

1. Once you have read the entire set of items, please answer question 1 at the top of the page first.
2. Then answer questions 2 & 3 for each individual item in the set.
3. Finally indicate if anything has been left off the question item list for the set that you feel should be added.

Once you have finished reviewing the potential questionnaire items, feel free to discuss your comments with myself. Could you please return the completed review to me by *Friday the 22nd February 2013*. Thank you for your help.

Regards,

Steve Hardman

Set 1

Label: *The Problem of Clinical Deterioration*

Definition: *Acute care hospitals have an increasing proportion of patients with complex co morbidities, increasing the likelihood of developing serious illness and physiological deterioration during their hospital stay*

1. Please read the label and definition above. Then please read all question items in the set below. In general does the label and definition fit with the whole set of question items below? YES / NO (Please circle)

In the boxes below, please read each question item carefully and answer questions 2 and 3 by circling YES or NO

Question item	2. Does each question item belong to the label and definition above?		3. Is each item unique in the set?	
	YES	NO	YES	NO
Clinical deterioration can be defined as the progressive decline in the physiological state of the patient	YES	NO	YES	NO
Clinical deterioration often leads to a disruption in organ function	YES	NO	YES	NO
Acute illness is a common problem in the hospital setting	YES	NO	YES	NO
Acutely ill patients are often admitted to my clinical area,	YES	NO	YES	NO
Acute decline and clinical deterioration of the patients' condition is a common event in the hospital	YES	NO	YES	NO

4. Is anything left off the question item list for the set that you feel should be added?

End of set

Set 2

Label: *Suboptimal Care and Clinical Deterioration*

Definition: *Suboptimal care is defined as delayed or inappropriate management of the deteriorating patient. Studies have identified core themes or attributes that included significant delays in diagnosis, treatment and referral of acutely unwell or deteriorating patients, inadequate or incomplete physical assessment and inappropriate or delayed clinical management*

1. Please read the label and definition above. Then please read all question items in the set below. In general does the label and definition fit with the whole set of question items below? YES / NO (Please circle)

In the boxes below, please read each question item carefully and answer questions 2 and 3 by circling YES or NO

Question item	2. Does each question item belong to the label and definition above?		3. Is each item unique in the set?	
	YES	NO	YES	NO
Acutely ill deteriorating patients are often poorly managed within the hospital ward setting with delays in assessment and treatment	YES	NO	YES	NO
Acutely ill deteriorating patients are often poorly managed within my current clinical area of work with delays in assessment and treatment	YES	NO	YES	NO
The deteriorating ward patient often experiences delays in being reviewed by medical staff	YES	NO	YES	NO
The deteriorating ward patient often experiences delays in being treated by medical staff	YES	NO	YES	NO

4. Is anything left off the question item list for the set that you feel should be added?

End of set

Set 3

Label: *Warning Signs of Clinical Deterioration*

Definition: *There is agreement that clinical deterioration is detectable and preventable in many cases. Warning signs of clinical deterioration such abnormalities in blood pressure, respiratory rate, heart rate, conscious level and oxygen saturation are common, prior to serious adverse events*

1. Please read the label and definition above. Then please read all question items in the set below. In general does the label and definition fit with the whole set of question items below? YES / NO (Please circle)

In the boxes below, please read each question item carefully and answer questions 2 and 3 by circling YES or NO

Question item	2. Does each question item belong to the label and definition above?		3. Is each item unique in the set?	
	YES	NO	YES	NO
Acute deterioration of the patients condition is easily detected	YES	NO	YES	NO
Acute deterioration of the patient's condition is often challenging to detect	YES	NO	YES	NO
My current clinical area of work has specific policies and procedures for monitoring the acutely ill deteriorating patient	YES	NO	YES	NO

4. Is anything left off the question item list for the set that you feel should be added?

End of set

Set 4

Label: *Rapid Response Systems and Clinical Deterioration*

Definition: *A formalised clinical process developed to improve the mortality and morbidity in acutely ill physiologically deteriorating hospital patient. Rapid response systems are based on the assessment and tracking of the patient's physiological status and triggering of a rapid escalation of acute care provision when patient deterioration is detected.*

1. Please read the label and definition above. Then please read all question items in the set below. In general does the label and definition fit with the whole set of question items below? YES / NO (Please circle)

In the boxes below, please read each question item carefully and answer questions 2 and 3 by circling YES or NO

Question item	2. Does each question item belong to the label and definition above?		3. Is each item unique in the set?	
	YES	NO	YES	NO
It is important to call for help quickly when a patient deteriorates	YES	NO	YES	NO
There is a clear policy and procedure in my current clinical area of work for alerting help when a patient deteriorates	YES	NO	YES	NO
I feel confident talking to the medical staff and explaining my concerns about the deteriorating ward patient	YES	NO	YES	NO
Acutely ill deteriorating patients are well managed within the hospital ward setting	YES	NO	YES	NO
Acutely ill deteriorating patients are well managed within my current clinical area of work	YES	NO	YES	NO
My current clinical area of work has specific policies and procedures for the management of the acutely ill deteriorating patient	YES	NO	YES	NO
The deteriorating ward patients in my current clinical area of work are always given priority by the nursing staff	YES	NO	YES	NO
The deteriorating ward patients in my current clinical area of work are always given priority by the medical staff	YES	NO	YES	NO
Decisions about patient management are made quickly when the patient is acutely ill or deteriorating	YES	NO	YES	NO

4. Is anything left off the question item list for the set that you feel should be added?

End of set

Set 5

Label: *Clinical Competence and Clinical Deterioration*

Definition: *A satisfactory level of performance demonstrating the effective application of knowledge, skill, attitude and judgement in the care of the deteriorating patient. The ability to perform a task with a desirable outcome, under varied circumstances and in such a way that these specifically address the needs of the practitioner and the patient.*

1. Please read the label and definition above. Then please read all question items in the set below. In general does the label and definition fit with the whole set of question items below? YES / NO (Please circle)

In the boxes below, please read each question item carefully and answer questions 2 and 3 by circling YES or NO

Question item	2. Does each question item belong to the label and definition above?		3. Is each item unique in the set?	
	YES	NO	YES	NO
I feel confident assessing and monitoring the acutely ill deteriorating ward patient	YES	NO	YES	NO
I have the right level of knowledge to assess and monitor the acutely ill deteriorating ward patient	YES	NO	YES	NO
I have the right level of competence to assess and monitor the acutely ill deteriorating ward patient	YES	NO	YES	NO
I feel confident calling for help when a patient becomes unwell	YES	NO	YES	NO
I feel confident talking to nursing staff and explaining my concerns about the deteriorating ward patient	YES	NO	YES	NO
I am able to interpret the findings of my assessment and formulate a management plan for the deteriorating patient	YES	NO	YES	NO
I feel confident to initiate treatment such as commencing oxygen therapy, suctioning, positioning of the patient, inserting airway adjuncts before the medical team have reviewed the deteriorating ward patient	YES	NO	YES	NO
I have the right knowledge to make decisions about the deteriorating ward patient's management	YES	NO	YES	NO
There are often times when I feel out of my depth in my role caring for the acutely ill deteriorating ward patient	YES	NO	YES	NO

Clinical competence is important in the delivery of effective patient care	YES	NO	YES	NO
In my undergraduate nursing course I was taught relevant clinical competencies to provide effective care for ward patients	YES	NO	YES	NO
In my undergraduate nursing course I was taught specific clinical competencies to assess the deteriorating ward patient	YES	NO	YES	NO
In my undergraduate nursing course I was taught specific clinical competencies to monitor the deteriorating ward patient	YES	NO	YES	NO
In my undergraduate nursing course I was taught specific clinical competencies to provide initial treatment to the deteriorating ward patient	YES	NO	YES	NO
In my undergraduate nursing course I had relevant clinical practice placements where I was able to assess and manage the deteriorating ward patient with support	YES	NO	YES	NO
In my undergraduate nursing course there was very little focus on clinical competencies to assess and manage the deteriorating ward patient	YES	NO	YES	NO
A clear set of relevant competencies to assess and manage the deteriorating ward patient would have been useful during my undergraduate nursing course	YES	NO	YES	NO
My graduate nurse program provides a clear set of competencies needed for assessing and monitoring the deteriorating ward patient	YES	NO	YES	NO
My graduate nurse program provides a clear set of competencies needed for the initial treatment and management of the deteriorating ward patient	YES	NO	YES	NO
Being clinically competent in the assessment and management of the deteriorating ward patient is important for graduate nurses	YES	NO	YES	NO
My current clinical area of work encourages the development of relevant clinical competencies to assess and monitor the deteriorating ward patient	YES	NO	YES	NO
My current clinical area encourages the development of relevant clinical competencies to manage the deteriorating ward patient	YES	NO	YES	NO
There are often times when I feel out of my depth assessing and managing the	YES	NO	YES	NO

deteriorating ward patient				
I feel my knowledge and clinical competence to assess and monitor the deteriorating ward patient could be improved	YES	NO	YES	NO
I feel my knowledge and clinical competence to treat and manage the deteriorating ward patient could be improved	YES	NO	YES	NO



4. Is anything left off the question item list for the set that you feel should be added?

End of set

Set 6

Label: *Role Definition and Clinical Deterioration*

Definition: *The attributes of the nurse that are socially accepted and expected by the individual nurse, their peers, other health care professionals, the health care organisation and the wider community. The clarification of the expectations of a specific role and the associated competence to undertake an ascribed role, are fundamental to the success of role transition, role acquisition and role implementation*

1. Please read the label and definition above. Then please read all question items in the set below. In general does the label and definition fit with the whole set of question items below? YES / NO (Please circle)

In the boxes below, please read each question item carefully and answer questions 2 and 3 by circling YES or NO

Question item	1. Does each question item belong to the label and definition above?		2. Is each item unique in the set?	
	YES	NO	YES	NO
It is my responsibility to detect clinical deterioration in the ward patient	YES	NO	YES	NO
It is my role to assess and monitor the acutely ill deteriorating ward patient	YES	NO	YES	NO
The responsibility of calling for help when a patient deteriorates lies with the person detecting the patients decline	YES	NO	YES	NO
I feel supported by my nursing colleagues when I call for help	YES	NO	YES	NO
I feel supported by medical staff when I call for help	YES	NO	YES	NO
It is not my role to formulate a management plan for the deteriorating patient	YES	NO	YES	NO
It is my role to initiate treatment before the medical team arrive to review the deteriorating ward patient	YES	NO	YES	NO
I am an important part of the decision making process	YES	NO	YES	NO
I'm expected to look after the acutely ill ward patient in my current clinical area of work	YES	NO	YES	NO

I have a clear understanding of my role when dealing with the acutely ill deteriorating ward patient	YES	NO	YES	NO
I have a clear understanding of my responsibilities when dealing with the acutely ill deteriorating ward patient	YES	NO	YES	NO
I often feel confused about my role when dealing with the acutely ill deteriorating ward patient	YES	NO	YES	NO
I often feel confused about my responsibilities when dealing with the acutely ill deteriorating ward patient	YES	NO	YES	NO
The lack of clarity outlining my role and responsibilities when dealing with the deteriorating ward patient is often frustrating	YES	NO	YES	NO
My nursing colleagues are able to guide me and clarify my role and responsibilities dealing with the acutely ill deteriorating ward patient	YES	NO	YES	NO
Medical staff are able to guide me and clarify my role and responsibilities dealing with the acutely ill deteriorating ward patient	YES	NO	YES	NO
As a graduate nurse I believe it should be my role to assess the acutely ill deteriorating ward patient	YES	NO	YES	NO
As a graduate nurse I believe it should be my role to alert senior nursing staff to the presence of an acutely ill deteriorating ward patient	YES	NO	YES	NO
As a graduate nurse I believe it should be my role to alert medical staff to the presence of an acutely ill deteriorating ward patient	YES	NO	YES	NO
It is my role to call the medical emergency team when a patient is acutely ill and deteriorating	YES	NO	YES	NO
As a graduate nurse I believe my main role is to monitor the acutely ill deteriorating ward patient	YES	NO	YES	NO
As a graduate nurse I believe it should be my role to provide initial treatment to prevent further decline of the acutely ill deteriorating ward patient	YES	NO	YES	NO

My main role is recording the observations and vital signs of the acutely ill deteriorating ward patient	YES	NO	YES	NO
My main role is monitoring the patient, interpreting measurements and adjusting the frequency and level of monitoring required by the deteriorating ward patient	YES	NO	YES	NO
My role goes beyond recording vital signs and includes interpreting measurements and initiating a clinical management plan e.g. commencing oxygen therapy, insertion of airway adjuncts, selection of Intravenous fluids and administration of a bolus of fluid	YES	NO	YES	NO
I have no idea what my role is when faced with an acutely ill deteriorating ward patient	YES	NO	YES	NO
Having a clearly defined role in the management of the deteriorating ward patient would help me to develop my clinical competence	YES	NO	YES	NO

4 Is anything left off the question item list for the set that you feel should be added?

End of set

Thank you for completing PART 3

Appendix 6: Phase 1 Reliability Testing of Q-Role

Email for Armadale Reliability Study: Registered Nurses

Hi everyone,

I am emailing to ask for your help and support as a group of motivated registered nurses to take part in a research study that I am undertaking as part of my PhD. The study needs level 1 RN's to answer a series of questionnaires concerning their roles and competencies to manage the deteriorating patient within the hospital setting. A more detailed and complete information guide explaining the pilot study is attached to the email.

There will be two parts to the reliability study. The questionnaires within the study will be completely anonymous, all information collected will be stored securely and involvement in the study is on a purely voluntary basis.

The initial part of the study involves you completing two online questionnaires over a period of two weeks. These can be completed on any computer, laptop, iPad, phone or device that can connect to the internet at any time day or night. Hopefully each of the questionnaires should not take more than 20 – 30 minutes to complete.

The link for Part 1 of the study is below, when you click the link you will be taken directly to the online questionnaire. Just follow the prompts to complete the questionnaire. There is a progress bar to show you how far along you are in the questionnaire.

Link for Pilot Study Part 1: https://www.surveymonkey.com/s/Deteriorating_Patient_Study_Part1

The link for part 2 will be emailed to you in a couple of weeks time.

Please feel free to email me or give me a ring if you have any further questions regarding the pilot project. I will send out a couple of reminder emails over the next two weeks for the study, but part 1 is open and available for you to complete right now. Your help in completing the pilot study would be really appreciated. Thanks in advance.

Regards,

Steve

Steven Hardman

Senior Lecturer

School of Nursing & Midwifery

The University of Notre Dame Australia

19 Mouat St (PO Box 1225) Fremantle 6959

Phone: + 61 8 9433 0275 Fax: + 61 8 9433 0227

Email: Steven.Hardman@nd.edu.au Web: www.nd.edu.au



PhD Reliability Pilot Project Information Sheet

PhD Project "The identification of the role and competencies of the graduate nurse in recognising and responding to the deteriorating patient in an acute ward environment: A mixed methods study".

Researcher: *Steven Hardman*

Dear Colleague,

My name is Steven Hardman and I am currently enrolled as a PhD candidate at the University of Notre Dame Australia, School of Nursing and Midwifery. My PhD research project is entitled "The identification of the role and competencies of the graduate nurse in recognising and responding to the deteriorating patient in an acute ward environment: A mixed methods study". It explores the role of the graduate nurse in caring for the acutely unwell deteriorating ward patient and identifies the competencies that are important in caring for these patients.

There are four phases in the research project, two of which will involve graduate nurses and data collection. The first phase of data collection involves asking graduate nurses to complete an online questionnaire looking at their current involvement with acutely unwell deteriorating ward patients and rating the importance of preselected competencies in their provision of care. The second phase of data collection will involve focus group interviews with graduate nurses to explore in more depth, their role and future training needs to manage the deteriorating ward patient.

The benefits of the study will include clarification of the graduate nurse's role managing the deteriorating ward patient, an outline of the relevant clinical competencies required for managing the deteriorating ward patient, guidance for educational institutions and graduate programs to reflect the roles and competencies required in developing graduate nurses to manage the deteriorating ward patient.

I am asking for permission to undertake a small study involving registered nurses working within the intensive care unit at Armadale Health Service. My intention is to test the questionnaire developed for the main PhD project and the online technology that will be used to deliver the questionnaire to the graduate nurses. It will involve around 10-15 registered nurses completing the online questionnaire on two occasions related to their current role and involvement with acutely unwell deteriorating patients and provision of care. I will of course provide the registered nurses with information regarding the project and the pilot study and ask for their consent to be involved. All information will be kept strictly confidential and will be de-identified, including the unit and hospital.

The PhD project has been approved by the School of Nursing & Midwifery Research Committee and has been granted ethical approval by the Human Research Ethics Committee (ref number 012076F) at the University of Notre Dame Australia as a low risk project. It has also been approved by the Chief Nurse Professor Catherine ~~Stodart~~ from the Department of Health, Nursing and Midwifery Office and received the Advancing the Nursing Profession Fellowship for 2012.

I have attached a copy of the questions that will be asked along with a copy of the Ethical clearance granted by the HREC at the University of Notre Dame Australia. My PhD supervisor is Dr Carol Piercey and she can be reached via email carol.piercey1@nd.edu.au or on telephone 94330277 if you have any further questions.

If you require any further information from myself, then please feel free to contact me via email steven_hardman@nd.edu.au or at steven_hardman@health.wa.gov.au. Alternatively I can be contact via telephone 0432077322. I look forward to hearing from you.

Kind regards

Steven Hardman

Senior Lecturer & Clinical Nurse (ICU Armadale)
School of Nursing & Midwifery
The University of Notre Dame Australia
19 Mouat St (PO Box 1225) Fremantle 6959
Phone: + 61 8 9433 0275 Fax: + 61 8 9433 0227
Email: Steven.Hardman@nd.edu.au Web: www.nd.edu.au

Appendix 7: Q-Role questionnaire

Appendix 7: Q-role Questionnaire

Part 1: Graduate Nurses Role & Competencies

1. PhD Project "The identification of the role and competencies of the graduate nurse in recognising an

WELCOME & THANK YOU FOR TAKING PART

Questionnaire Part 1: Role & Competence

Thank you for taking part in this PhD research project. The project is entitled "The identification of the role and competencies of the graduate nurse in recognising and responding to the deteriorating patient in an acute ward environment: A mixed methods study".

The research will explore the role of the graduate nurse in caring for the acutely unwell deteriorating ward patient and identify the specific competencies that are seen as important in caring for these patients.

Within this initial questionnaire you will be asked about you're the deteriorating patient, the role you undertake and the knowledge and clinical competencies that you have to deal with the acutely unwell patient.

The questionnaire should take around 10 to 15 minutes to complete and there is a progress bar that will allow you to track how far you have progressed. Please read the questions carefully before answering.

The next questionnaire will be emailed to you in around two weeks. Thanks again for your participation in the research project.

For more information about this project, or for a summary of the research findings, please contact Steven Hardman at the University of Notre Dame Australia on (08) 94330275 or email at steven.hardman@nd.edu.au.

Study findings will be reported in a way that ensures the responses from an individual cannot be identified. All responses are strictly confidential. Participation is voluntary.

Submitting a completed questionnaire is an indication of your consent to participate in the study and, due to the confidential nature of your submission, cannot be removed from the database once submitted.

Data will be kept secured and destroyed after five years. This research project has the approval of the Human Research Ethics Committee (HREC) of The University of Notre Dame Australia.

If participants have any complaint regarding the manner in which a research project is conducted, it should be directed to the Executive Officer of the Human Research Ethics Committee, Research Office. The University of Notre Dame Australia, PO Box 1225 Fremantle WA 6959, phone (08) 9433 0943, research@nd.edu.au.

The researcher is Steven Hardman from the School of Nursing & Midwifery (Fremantle) at the

1

University of Notre Dame Australia.

* Do you wish to continue with the survey?

YES

NO

Part 1: Graduate Nurses Role & Competencies

2. Demographic Information

Please complete the following demographic questions. Select the most appropriate answers

* What is your gender?

- Female
- Male

* Which category below includes your age?

- 18-20
- 21-25
- 26-30
- 31-35
- 36-40
- 41-45
- 46-50
- 51-55
- 56 & over

* Are you currently registered with APRHA as an RN?

- Yes
- No

* Are you currently employed within a Perth Metro hospital?

- Yes
- No

* Is your hospital a private or public hospital?

- Private
- Public

* Are you currently enrolled on a graduate nurse programme within a Perth Metro hospital?

- Yes
- No

* How long have you currently been enrolled on your graduate nurse program?

- 0-3mths
- 4-6mths
- 7-9mths
- 10-12 mths
- Over 12 mths
- Completed graduate nurse program

* Which area of nursing or speciality do you currently work in?

- Other
- Medical Ward
- Surgical Ward
- Orthopaedics
- Paediatrics
- Emergency Department
- Critical Care
- Theatres
- Aged Care
- Rehab

* At which University did you complete your undergraduate or initial nursing education?

- Other University
- Notre Dame
- Edith Cowan
- Curtin
- Murdoch
- UWA

Part 1: Graduate Nurses Role & Competencies

3. Clinical Deterioration

Please read the statements carefully and rate your level of agreement

* Clinical deterioration can be defined as the progressive decline in the physiological state of the patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Clinical deterioration often leads to a disruption in organ function

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Acute illness is a common problem in the hospital setting

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Acutely ill patients are often admitted to my clinical area

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Sudden decline and clinical deterioration of the patients' condition is a common event in the hospital

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Sudden decline and clinical deterioration of the patients' condition is a common event in my current clinical area of work

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Acute deterioration of the patients' condition can be easily detected

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Acute deterioration of the patients' condition is often challenging to detect

Strongly disagree Disagree Undecided Agree Strongly Agree

* It is my responsibility to detect clinical deterioration in the ward patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* I feel confident assessing and monitoring the acutely ill deteriorating ward patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* I have the right level of knowledge to assess and monitor the acutely ill deteriorating ward patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* I have the right level of competence to assess and monitor the acutely ill deteriorating ward patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* It is my role to assess and monitor the acutely ill deteriorating ward patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* My current clinical area of work has specific policies and procedures for monitoring the acutely ill deteriorating patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* The responsibility of calling for help when a patient deteriorates lies with the person detecting the patients decline

Strongly disagree Disagree Undecided Agree Strongly Agree

Part 1: Graduate Nurses Role & Competencies

4. Clinical Deterioration 2

Please read the statements carefully and rate your level of agreement

* It is important to call for help quickly when a patient deteriorates

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* There is a clear policy and procedure in my current clinical area of work for alerting help when a patient deteriorates

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I feel confident calling for help when a patient becomes unwell

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I feel confident talking to nursing staff and explaining my concerns about the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I feel confident talking to the medical staff and explaining my concerns about the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I feel supported by my nursing colleagues when I call for help

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I feel supported by medical staff when I call for help

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Acutely ill deteriorating patients are well managed within the hospital ward setting

Strongly disagree Disagree Undecided Agree Strongly Agree

* Acutely ill deteriorating patients are well managed within my current clinical area of work

Strongly disagree Disagree Undecided Agree Strongly Agree

* I am able to interpret the findings of my assessment and formulate a management plan for the deteriorating patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* It is not my role to formulate a management plan for the deteriorating patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* Acutely ill deteriorating patients are often poorly managed within the hospital ward setting with delays in assessment and treatment

Strongly disagree Disagree Undecided Agree Strongly Agree

* Acutely ill deteriorating patients are often poorly managed within my current clinical area of work with delays in assessment and treatment

Strongly disagree Disagree Undecided Agree Strongly Agree

* My current clinical area of work has specific policies and procedures for the management of the acutely ill deteriorating patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* The deteriorating ward patients in my current clinical area of work are always given priority by the nursing staff

Strongly disagree Disagree Undecided Agree Strongly Agree

Part 1: Graduate Nurses Role & Competencies

5. Clinical Deterioration 3

Please read the statements carefully and rate your level of agreement

- * The deteriorating ward patients in my current clinical area of work are always given priority by the medical staff

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- * The deteriorating ward patient often experiences delays in being reviewed by medical staff

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- * The deteriorating ward patient often experiences delays in being treated by medical staff

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- * I feel confident to initiate treatment such as commencing oxygen therapy, suctioning, positioning of the patient, inserting airway adjuncts before the medical team have reviewed the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- * I feel confident to initiate treatment before the medical team have reviewed the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- * Decisions about patient management are made quickly when the patient is acutely ill or deteriorating

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- * I am an important part of the decision making process

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I have the right knowledge to make decisions about the deteriorating ward patient's management

Strongly disagree

Disagree

Undecided

Agree

Strongly Agree

* I have the right level of competence to make decisions about the deteriorating ward patient's management

Strongly disagree

Disagree

Undecided

Agree

Strongly Agree

Part 1: Graduate Nurses Role & Competencies

6. Role

Please read the statements carefully and rate your level of agreement

* I'm expected to look after the acutely ill ward patient in my current clinical area of work

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I have a clear understanding of my role when dealing with the acutely ill deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I have a clear understanding of my responsibilities when dealing with the acutely ill deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I often feel confused about my role when dealing with the acutely ill deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I often feel confused about my responsibilities when dealing with the acutely ill deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* The lack of clarity outlining my role and responsibilities when dealing with the deteriorating ward patient is often frustrating

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* There are often times when I feel out of my depth in my role caring for the acutely ill deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* My nursing colleagues are able to guide me and clarify my role and responsibilities dealing with the acutely ill deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Medical staff are able to guide me and clarify my role and responsibilities dealing with the acutely ill deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 1: Graduate Nurses Role & Competencies

7. Role 2

Please read the statements carefully and rate your level of agreement

* As a graduate nurse I believe it should be my role to assess the acutely ill deteriorating ward patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* As a graduate nurse I believe it should be my role to alert senior nursing staff to the presence of an acutely ill deteriorating ward patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* As a graduate nurse I believe it should be my role to alert medical staff to the presence of an acutely ill deteriorating ward patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* It is my role to call the medical emergency team when a patient is acutely ill and deteriorating

Strongly disagree Disagree Undecided Agree Strongly Agree

* As a graduate nurse I believe my main role is to monitor the acutely ill deteriorating ward patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* As a graduate nurse I believe it should be my role to provide initial treatment to prevent further decline of the acutely ill deteriorating ward patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* My main role is recording the observations and vital signs of the acutely ill deteriorating ward patient

Strongly disagree Disagree Undecided Agree Strongly Agree

* My main role is monitoring the patient, interpreting measurements and adjusting the frequency and level of monitoring required by the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* My role goes beyond recording vital signs and includes interpreting measurements and initiating a clinical management plan e.g. commencing oxygen therapy, insertion of airway adjuncts, selection of Intravenous fluids and administration of a bolus of fluid

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I have no idea what my role is when faced with an acutely ill deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 1: Graduate Nurses Role & Competencies

8. Relevance to Role

Please read the statements carefully and rate your level of agreement

* Clinical competence is important in the delivery of effective patient care

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* In my undergraduate nursing course I was taught relevant clinical competencies to provide effective care for ward patients

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* In my undergraduate nursing course I was taught specific clinical competencies to assess the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* In my undergraduate nursing course I was taught specific clinical competencies to monitor the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* In my undergraduate nursing course I was taught specific clinical competencies to provide initial treatment to the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* In my undergraduate nursing course I had relevant clinical practice placements where I was able to assess and manage the deteriorating ward patient with support

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* In my undergraduate nursing course there was very little focus on clinical competencies to assess and manage the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* A clear set of relevant competencies to assess and manage the deteriorating ward patient would have been useful during my undergraduate nursing course

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 1: Graduate Nurses Role & Competencies

9. Relevance to Role 2

Please read the statements carefully and rate your level of agreement

- * My graduate nurse program provides a clear set of competencies needed for assessing and monitoring the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- * My graduate nurse program provides a clear set of competencies needed for the initial treatment and management of the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- * Being clinically competent in the assessment and management of the deteriorating ward patient is important for graduate nurses

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- * My current clinical area of work encourages the development of relevant clinical competencies to assess and monitor the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- * My current clinical area encourages the development of relevant clinical competencies to manage the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- * There are often times when I feel out of my depth assessing and managing the deteriorating ward patient

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I feel my knowledge and clinical competence to assess and monitor the deteriorating ward patient could be improved

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I feel my knowledge and clinical competence to treat and manage the deteriorating ward patient could be improved

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Having a clearly defined role in the management of the deteriorating ward patient would help me to develop my clinical competence

Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 1: Graduate Nurses Role & Competencies

10. Questionnaire Completed

Thank you for taking the time to complete the questionnaire.

Please click done to submit your questionnaire.

Appendix 8: Q-Role Invitation Email to GRNs

Dear colleague,

My name is Steve Hardman and I am currently enrolled as a PhD candidate at the University of Notre Dame Australia.

I am emailing to ask for your help in my research project looking into the role of the graduate nurse in managing the acutely ill deteriorating ward patient.

The deteriorating ward patient can be very challenging to manage and it is often the graduate nurse who initially identifies the patient as being unwell.

The aim behind the research is to identify how you see the graduate nurses' role in this situation and the clinical competencies that help you to undertake this role.

Below is a link for a short 3 min YouTube clip explaining the project Please click the link to watch the clip.

YouTube clip: <http://www.youtube.com/watch?v=4q1ld9wKs>

The research project will involve you completing four short online questionnaires which should take around 10-20 minutes each to complete.

A link to each of the online questionnaires will be sent via email over the next few weeks. You just need to click the link to undertake the questionnaire.

These can be completed on any PC or mobile device that has connection to the internet.

Here is the link to the first questionnaire PART 1 ROLE & COMPETENCIES: CLICK LINK BELOW

[SurveyLink] <https://www.surveymonkey.com/s/Part1GraduateNursesRoleandCompetencies3KWRQ>

Involvement in the research project is completely voluntary and all information is anonymous and will be stored in a secure and confidential manner,

If you have any questions about the project then please feel free to get in touch
steven.hardman@nd.edu.au

You involvement in the research project will help to shape the development of graduate nurses and the provision of care to the acutely ill patient.

If you do not wish to be involved in the survey please click the link below;

[RemoveLink] <https://www.surveymonkey.com/s/GraduateNursesRoleandCompetenciesREMOVE>

Thank you for your time and involvement, it is greatly appreciated.

Kind regards,

Steve

Steve Hardman
PhD Candidate

Appendix 9: Q-Comp Questionnaire

Q-Comp Domain 1: Airway, Breathing, Ventilation & Oxygenation

Part 2: Airway, Breathing, Ventilation & Oxygenation

Part 2: Airway, Breathing, Ventilation & Oxygenation Competencies

COMPETENCY GROUPS: Airway, Breathing, Ventilation & Oxygenation

The following short questions contain headings of competency groups related to Airway, Breathing, Ventilation & Oxygenation. There are 15 competencies to rate and the questionnaire should take no more than 10 mins to complete.

These competency groups have been linked to providing care to the deteriorating ward patient.

Please read each of the competency group headings and rate how important these are to you in providing care for the deteriorating ward patient in your current role as a graduate nurse.

Should you rate a particular competency group as "1 = very important" or "2 = important" to you in your current role as a graduate nurse, then a second question will be revealed.

These questions will ask you to choose from a list specific competency elements that relate to your role when dealing with the deteriorating ward patient.

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

Thank you again for your participation in the study.

Regards,
Steve Hardman

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 1. Respiratory rate

Very important

Important

Of little importance

Not important

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 2. Respiratory rate: competency elements

- Recognises Respiratory Arrest and calls 333
- Measures respiratory rate and records result, assigns trigger score for respiratory rate. Has knowledge of what constitutes an abnormal value
- Interprets trigger in context of patient and responds in accordance with local escalation protocols. Adjusts frequency of observations in keeping with trigger
- Identifies inadequate respiratory effort and institutes clinical management therapies.
- Evaluates effectiveness of treatment, refines treatment plan if necessary, formulates a diagnosis and recognises when referral to Critical Care

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

3. Assessment of adequacy of ventilation and oxygenation

Very important

Important

Of little importance

Not important

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 4. Assessment of adequacy of ventilation and oxygenation: competency elements

- Recognises Respiratory Arrest and calls 333
- Measures respiratory rate, and oxygen saturation. Assesses pattern of ventilation. Records measurements, has knowledge of abnormal values.
- Interprets measurements in context and intervenes with basic measures in accordance with local protocols including oxygen and airway support. Adjusts frequency of observations in keeping with trigger.
- Identifies inadequate ventilation and institutes clinical management therapies
- Formulates diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognises when referral to Critical Care is indicated

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 5. Common causes of breathlessness

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 6. Common causes of breathlessness: competency elements

- Describes the common causes of breathlessness. Recognises when a patient is breathless.
- Identifies cause of breathlessness and institutes clinical management therapies.
- Formulates diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognises when referral to Critical Care is indicated

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

7. Peak Flow, Spirometry

Very important

Important

Of little importance

Not important

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 8. Peak flow, Spirometry: competency elements**

- Identifies equipment and seeks advice if unclear, transports equipment to ward.
- Supervises patient performing peak expiratory flow measurement and records result.
- Interprets reading in context, can undertake bedside spirometry when instructed to do so.
- Has knowledge of which additional diagnostic tests are appropriate, institutes them and formulates a clinical management plan.
- Reviews diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognises when referral to Critical Care is indicated.

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

9. Administration of drugs via nebuliser

Very important

Important

Of little importance

Not important

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 10. Administration of drugs via nebuliser : competency elements

- Identifies and collects medical gases if designated.
- Recognises nebuliser devices and can use under supervision.
- Uses nebuliser device and administer therapy using correct driving gas as prescribed.
- Prescribes nebulisers including appropriate driving gas.
- Reviews effectiveness of nebuliser therapy and revises treatment accordingly.

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 11. Oxygen Saturation

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 12. Oxygen Saturation: competency elements

- Measures oxygen saturation. Records result and assigns trigger score. Has knowledge of limitations of pulse oximetry and recognises abnormal result.
- Interprets measurements in context and intervenes with basic measures in accordance with local escalation protocols including oxygen and airway support. Adjusts frequency of observations in keeping with trigger.
- Identifies possible cause of hypoxia, prescribes oxygen therapy and institutes clinical management therapies.
- Formulates diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognises when referral to Critical Care is indicated.

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 13. Arterial blood gas sampling

Very important

Important

Of little importance

Not important

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 14. Arterial blood gas sampling: competency elements

- Transports sample according to local protocol.
- Collects equipment and transports sample.
- Assists operator in performing task.
- Undertakes arterial blood gas sampling and measurement. Has knowledge of and can interpret arterial blood gas measurement.
- Recognises need for assistance from Critical Care.

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 15. High flow and controlled oxygen therapy

Very important

Important

Of little importance

Not important

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 16. High flow and controlled oxygen therapy: competency elements

- Identifies and collects medical gases if designated.
- Identifies and uses masks /nasal cannulae/venturi adapters at appropriate oxygen flow rates. Records oxygen concentration/flow.
- Follows oxygen prescription. Understands the context when controlled oxygen is required and applies high flow oxygen effectively in emergencies.
- Prescribes oxygen and evaluates effectiveness.
- Has detailed knowledge of the use of controlled and high flow oxygen therapy. Evaluates effectiveness of oxygen therapy and revises treatment accordingly.

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 17. Continuous Positive Airway Pressure (CPAP) and/or Non-Invasive Pressure Supported Ventilation (NIV)

Very important

Important

Of little importance

Not important

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 18. Continuous Positive Airway Pressure (CPAP) and/or Non-Invasive Pressure Supported Ventilation (NIV): competency elements

- Identifies equipment and seeks advice if unclear, transports equipment to ward.
- Identifies and transports equipment to the patient.
- Has knowledge of the indications for CPAP and NIV. Identifies the risks associated with CPAP and NIV therapy.
- Has knowledge of indications for CPAP and NIV. Identifies risks associated with CPAP and NIV.
- Prescribes, uses CPAP and/or NIV, evaluates effectiveness of treatment and revises accordingly. Recognises need for assistance from Critical Care.

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 19. Chest Radiograph

Very important

Important

Of little importance

Not important

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 20. Chest Radiograph (Xray): competency elements

- Recognises need for chest xray
- Requests and interprets Chest Radiograph

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 21. Use of airway adjuncts and suction

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 22. Use of airway adjuncts and suction: competency elements

- Identifies equipment and seeks advice if unclear, transports equipment to ward.
- Uses basic adjuncts and suction.

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 23. Urgent endotracheal intubation

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 24. Urgent endotracheal intubation: competency elements

- Identifies and transports emergency equipment to the patient.
- Recognises endotracheal tube and laryngoscope.
- Assists with urgent intubation

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 25. Tracheostomy (spontaneous ventilation)

Very important

Important

Of little importance

Not important

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 26. Tracheostomy (spontaneous ventilation): competency elements

- Identifies a tracheostomy is in place.
- Has knowledge of clinical signs and symptoms associated with a misplaced or displaced tracheostomy tube.
- Identifies when fiberoptic endoscopy is required to check position of tracheostomy tube.
- Performs fiberoptic endoscopy to check position of tracheostomy tube. Changes tracheostomy tube

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 27. Tension Pneumothorax

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 28. Tension Pneumothorax

- Measures respiratory rate and oxygen saturation. Assesses pattern of ventilation. Records measurements, has knowledge of abnormal values.
- Describes the common causes of breathlessness. Recognises when a patient is breathless.
- Identifies tension pneumothorax as a possible cause of breathlessness. Has knowledge of the management of a tension pneumothorax.
- Formulates a diagnosis for and confirms the presence of a tension pneumothorax. Performs chest drain insertion and directs subsequent management.

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 29. Chest Drain

Very important

Important

Of little importance

Not important

Part 2: Airway, Breathing, Ventilation & Oxygenation

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 30. Chest Drain

- Recognises that transferring a patient with a chest drain needs clinical assistance.
- Recognises drain presence. Has knowledge of the use of a chest drain. Records output from drain and/or position (swinging and bubbling).
- Prepares equipment for and assist with insertion of drain. Manages a patient with a chest drain.
- Inserts chest drain using either seldinger or traditional technique

Q Comp Domain 2: Circulation

Part 3: Circulation Competencies

Part 3: Circulation Competency Statements

COMPETENCY GROUPS: CIRCULATION

The following short questions contain headings of competency groups related to Circulation. There are 27 competencies to rate and the questionnaire should take around 10 mins to complete.

These competency groups have been linked to providing care to the deteriorating ward patient.

Please read each of the competency group headings and rate how important these are to you in providing care for the deteriorating ward patient in your current role as a graduate nurse.

Should you rate a particular competency group as "1 = very important" or "2 = important" to you in your current role as a graduate nurse, then a second question will be revealed.

These questions will ask you to choose from a list specific competency elements that relate to your role when dealing with the deteriorating ward patient.

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

Thank you again for your participation in the study.

Regards,
Steve Hardman

Part 3: Circulation Competencies

Circulation Competency Statements

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 1. Measurement of Heart Rate

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 2. Measurement of Heart Rate**

- Measures heart rate, records measurement, assigns trigger score and has knowledge of what constitutes an abnormal value.
- Interprets trigger in context of patient and responds in accordance with local escalation protocols. Adjusts frequency of observations in keeping with trigger.
- Identifies abnormal heart rate (tachyarrhythmias and bradyarrhythmias) and institutes clinical management therapies.
- Formulates diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognises when referral to Critical Care is indicated

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 3. ECG monitoring and recording of trace

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 4. ECG monitoring and recording of trace

- Identifies equipment and seeks advice if unclear, transports equipment to the patient or ward as appropriate.
- Recognises ECG machine.
- Uses machine to perform 12 lead ECG. Has knowledge of local equipment eg refilling paper/toner.
- Has knowledge of common abnormalities and can interpret ECG in the context of the patient. Responds in accord with local protocols and institutes clinical management therapies.
- Formulates diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognises when referral to Critical Care is indicated.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 5. Measurement of Blood Pressure

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 6. Measurement of Blood Pressure**

- Measures blood pressure, records measurement, assigns trigger score and has knowledge of what constitutes an abnormal value.
- Interprets trigger in context of patient and responds in accordance with local escalation protocols. Adjusts frequency of observations in keeping with trigger.
- Has knowledge of causes of an abnormal blood pressure, and which diagnostic investigations are appropriate. Institutes clinical management therapies.
- Formulates diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognises when referral to Critical Care is indicated

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 7. Fluid status and balance assessment

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 8. Fluid status and balance assessment**

- Records input and output and reports abnormalities to 'primary responder' or senior staff.
- Interprets fluid balance status and informs primary responder of any abnormalities.
- Identifies when clinical intervention is required and institutes diagnostic investigations and a clinical management plan.
- Formulates diagnosis and evaluates effectiveness of treatment, refines treatment plan if necessary and recognises when referral to Critical Care is indicated.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 9. Urinary catheter

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 10. Urinary catheter

- Collects and prepares equipment.
- Inserts catheter

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 11. Nasogastric tube

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 12. Nasogastric tube

- Recognises tube, can record input and output.
- Inserts tube in the awake, uncomplicated patient and understands local protocol for checking position. Can use for drainage, drug administration and enteral feed administration.
- Inserts tube in unconscious patients.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 13. External haemorrhage

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 14. External Haemorrhage

- Recognises overt blood loss.
- Assesses severity of overt blood loss and interprets loss in the context of the patient. Initiates first aid management eg compression, dressing.
- Identifies source of bleeding, clinical impact and initiates definitive management. Commences resuscitation.
- Evaluates effectiveness of resuscitation, management of haemostasis and appropriate use of blood products. Refines treatment plan if necessary and recognises when referral to specialist services and/or Critical Care is indicated.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 15. Hypodermic needles and syringes

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 16. Hypodermic needles and syringes

- Recognises and understands safety issues.
- Has knowledge of safe practice for use and disposal of hypodermic needles and syringes.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 17. Blood sampling equipment

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 18. Blood sampling equipment**

- Transports samples according to local protocols.
- Has knowledge of which tests are required in an emergency, can perform venesection.
- Has knowledge of which tests are required in both elective and emergency situations. Can request test/s, performs venesection.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 19. Peripheral Venous Cannula

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 20. Peripheral Venous Cannula

- Recognises peripheral cannula.
- Assesses potential sites for peripheral IV access and inserts cannula in "simple" cases.
- Inserts IV cannula in "difficult" cases.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 21. Intravenous fluid maintenance and resuscitation

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 22. Intravenous fluid maintenance and resuscitation

- Recognises infusion equipment (eg in relation to patient transport).
- Retrieves correct IV fluid, volume and infusion device.
- Administers fluid as prescribed and in accord with local protocols.
- Identifies need for, and initiates fluid challenge for resuscitation and institutes clinical management plan. Prescribes maintenance fluids.
- Evaluates effectiveness of treatment, and refines treatment plan if required. Recognises when invasive monitoring is required and referral to Critical Care is indicated.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 23. IV infusions (giving sets and pumps)

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 24. IV infusions (giving sets and pumps)

- Recognises presence of IVI and safely transfers patients with IVI's.
- Assists patient to manoeuvre with IVI running. Calculate and record hourly fluid input. Has knowledge of how to use device.
- Prepares infusion device for use and administers fluids and drugs as prescribed.
- Prescribes intravenous fluids and drugs.
- Administers larger range of drugs and infusions.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 25. Administration of blood products including warming

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 26. Administration of blood products including warming

- Collects blood products according to local protocols.
- Documents administration of Blood Products.
- Administers products including the use of a blood warmer. Ensures adherence to traceability protocol.
- Has knowledge of indications for, and risks associated with, blood products. Prescribes blood products.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 27. Measurement of Temperature

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 28. Measurement of Temperature

- Measures temperature, records result and has knowledge of what constitutes an abnormal value.
- Interprets trigger in context of patient and responds in accord with local protocols.
- Identifies abnormal temperature and recognizes when clinical intervention is required. Institutes clinical management therapies.
- Formulates diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognizes when referral to Critical Care is indicated.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 29. Care of peripheral venous access

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 30. Care of peripheral venous access

- Recognises presence of IV access.
- Undertakes and records observation of IVI in situ in accordance with local protocol. Utilises VIP score and refers to recogniser where appropriate.
- Identifies extravasated IVI and infected IV site. Removes infected IV cannula.
- Identifies need for replacement.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 31. Alternatives to peripheral venous access

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 32. Alternatives to peripheral venous access

- Recognition of a Central Venous Catheter.
- Has knowledge of when central venous access may be required and can assist in preparing equipment.
- Performs central venous access under supervision.
- Inserts central venous catheter in accord with NICE guideline and local protocol. Competent in the use of Ultrasound and Landmark techniques.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 33. Central venous catheter

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 34. Central venous catheter

- Recognises a Central Venous Catheter and records CVP.
- Has knowledge of when Central Venous Access may be required, understands risk/benefit associated with Central Venous Catheter and uses catheter including the administration of drugs. Interprets CVP readings in context of current patient management and treatment.
- Performs Central Venous Access under supervision.
- Inserts central venous catheter in accord with NICE guideline and local protocol. Competent in the use of Ultrasound and Landmark techniques.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 35. Ultrasound machine

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 36. Ultrasound machine

- Identifies and transports equipment to the patient.
- Recognises machine.
- Has Knowledge of common indications for use.
- Uses ultrasound under supervision for insertion of central venous catheter.
- Uses ultrasound independently for insertion of central venous catheter.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 37. Arterial catheter

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 38. Arterial catheter**

- Recognises arterial catheter as distinct from venous catheter.
- Understands principles of invasive arterial pressure measurement and has knowledge of technique for insertion, use and removal of catheter.
- Samples from catheter under supervision.
- Inserts arterial catheter, manages independently, displays and interprets arterial pressure waveform.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 39. Assessment of cardiac output

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 40. Assessment of cardiac output

- Has knowledge of how to assess adequacy of cardiac output clinically using colour of skin, capillary refill, temperature of skin, presence of sweating and level of consciousness. Alerts senior staff if assessment indicates inadequate cardiac output.
- Interprets assessment in the context of the patient and responds in accord with local protocols.
- Identifies low cardiac output and institutes diagnostic investigations and a clinical management plan.
- Formulates diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognises when referral to Critical Care is indicated.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 41. Collapsed/unresponsive patient

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 42. Collapsed/unresponsive patient

- In hospital resuscitation according to local policy.
- Identifies potential causes relevant to the individual patient.
- Advanced life support with a broad approach to finding information and treatment of specific causes of collapse.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 43. Anaphylaxis

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 44. Anaphylaxis

- Records clinical signs of anaphylaxis
- Has knowledge of the clinical signs and symptoms of anaphylaxis
- Identifies potential causes relevant to the individual patient. Has knowledge of the clinical management of anaphylaxis.
- Has Knowledge of the first line relevant investigations required to confirm the diagnosis of anaphylaxis. Evaluates effectiveness of resuscitation.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 45. External chest compressions

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 46. External chest compressions

- Recognises when cardio-pulmonary resuscitation is in progress.
- Provide In hospital resuscitation.
- Provide Advanced life support.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 47. Cardiac arrest rhythms (VF, pulseless VT, PEA and asystole)

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 48. Cardiac arrest rhythms (VF, pulseless VT, PEA and asystole)

- Recognises when cardio-pulmonary resuscitation is in progress.
- Provide In hospital resuscitation.
- Provide Advanced life support.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 49. Emergency drugs

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 50. Emergency drugs**

- Recognises situations when emergency drugs are used.
- Selects drug when instructed.
- Understands rationale for therapeutic intervention and can administer drugs according to in hospital resuscitation standard.
- Provides Advanced life support.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 51. Automated external defibrillator

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 52. Automated external defibrillator

- Recognises equipment and +/- in hospital resuscitation according to local policy.
- Provides In hospital resuscitation.
- Provides Advanced life support.

Part 3: Circulation Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 53. Non-automated external defibrillation

Very important

Important

Of little importance

Not important

Part 3: Circulation Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 54. Non-automated external defibrillation

- Recognises equipment
- Provides In hospital resuscitation.
- Provides Advanced life support.

Q-Comp Domain 3: Acute Neurological Care

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

COMPETENCY GROUPS: ACUTE NEUROLOGICAL CARE

COMPETENCY GROUPS: ACUTE NEUROLOGICAL CARE

The following questions contain headings of competency groups related to Acute Neurological Care. These competency groups have been linked to providing care to the deteriorating ward patient.

Please read each of the competency group headings and rate how important these are to you in providing care for the deteriorating ward patient in your current role as a graduate nurse.

Should you rate a particular competency group as "1 = very important" or "2 = important" to you in your current role as a graduate nurse, then a second set of questions will be revealed.

These questions will ask you to choose from a list specific competency elements that relate to your role when dealing with the deteriorating ward patient.

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

2

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 1. Acute confusional states

Very Important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 2. Acute confusional states**

- Recognizes that confusion may be marker of illness.
- Understands importance of these signs as markers of pathology, performs additional tests such as capillary blood glucose, checks for hypoxia.
- Identifies when clinical intervention is required. Initiates diagnostic tests and institutes clinical management therapies.
- Evaluates effectiveness of treatment, refines treatment plan if necessary and recognizes when referral to Critical Care is indicated.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 3. Blood Glucose measurement and interpretation

Very Important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 4. Blood Glucose measurement and interpretation**

- Identifies equipment and seeks advice if unclear, transports equipment to the patient or the ward.
- Supervises patient to undertake own blood glucose measurement.
- Performs blood glucose measurement. Has knowledge to interpret blood glucose value in context of the patient. Initiates local protocol for hypoglycaemia.
- Identifies when clinical intervention is required and institutes clinical management therapies including the prescription of insulin or intravenous bolus of 50% glucose if the patient is hypoglycemic.
- Evaluates effectiveness of treatment, refines treatment plan if necessary and recognizes when referral to Critical Care is indicated

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 5. Acute sudden onset headache

Very Important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 6. Acute sudden onset headache

- Recognizes severe sudden onset headache as a problem.
- Understands that severe sudden headache, temperature and stiff neck needs further urgent intervention.
- Identifies when clinical intervention is required. Initiates diagnostic tests and institutes clinical management therapies.
- Differentiates meningitis/encephalitis from other causes of severe sudden onset headache such as subarachnoid hemorrhage. Institutes appropriate interventions and investigations including lumbar puncture if appropriate. Refers for specialist neurological advice.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 7. Lumbar Puncture

Very Important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 8. Lumbar Puncture**

- Transports samples according to local protocols.
- Assists with patient positioning.
- Prepares equipment and labels samples.
- Performs lumbar puncture under supervision.
- Independently performs lumbar puncture.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 9. Computerised Tomography (CT) Scan of Head

Very Important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 10. Computerised Tomography (CT) Scan of Head

- Recognizes that CT scan may be needed.
- Identifies indications and priorities for requesting imaging.
- "Simple" interpretation of CT scan and recognizes when referral for specialist advice required.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 11. Altered motor / sensory function

Very Important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 12. Altered motor / sensory function

- Recognizes new weakness as abnormal.
- Interprets clinical signs in context of the patient and responds in accord with local protocol.
- Identifies when clinical intervention is required. Initiates diagnostic tests and institutes clinical management therapies.
- Reviews diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognizes when referral to Critical Care or specialist neurology is indicated.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 13. Swallowing difficulties

Very Important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 14. Swallowing difficulties

- Understands clinical implications of oral intake.
- Interprets clinical signs in context of the patient and responds in accord with local protocol.
- Identifies when clinical intervention is required. Initiates diagnostic tests and institutes clinical management therapies.
- Reviews diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognizes when referral to Critical Care, Speech and Language Therapist or specialist neurology is indicated.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 15. Seizures

Very Important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 16. Seizures

- Recognizes and records seizures. Understands basic practical procedures that need to be done to maintain the safety of the patient e.g. posture, airway.
- Confirms seizure activity, initiates airway protection, oxygen and positioning and responds further in accord with local protocol.
- Has knowledge of the causes of seizures, eliminates hypoglycaemia and hypoxia as causes and responds in accord with local protocol.
- Reviews diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognizes when referral to Critical Care or specialist neurology is indicated.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 17. Unconsciousness

Very Important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 18. Unconsciousness**

- Calls for help.
- Recognizes the danger of airway obstruction and takes remedial action.
- Has knowledge of common causes of unconscious state, eliminates these, provides in hospital resuscitation, and institutes local protocol for assistance.
- Identifies the cause of reduced consciousness and institutes clinical management therapies.
- Evaluates diagnosis and effectiveness of treatment, refines treatment plan if necessary and recognizes when referral to Critical Care is indicated.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 19. Recovery Position

Very Important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 20. Recovery Position

- Calls for help.
- Recognizes the danger of airway obstruction and takes remedial action.
- Places patient in recovery position.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 21. AVPU Scale (Awake and responsive, Responds to verbal commands, Responds to painful stimuli, Unresponsive)

Very Important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 22. AVPU Scale (Awake and responsive, Responds to verbal commands, Responds to painful stimuli, Unresponsive)

- Measures, records, assigns trigger score and has knowledge of what constitutes an abnormal value.
- Interprets trigger in context of patient and understands clinical importance of an abnormal score. Responds in accordance with local escalation protocols.
- Has knowledge of the diagnostic and clinical therapies that are indicated in the context of an abnormal score. Refers to "secondary responder".
- Initiates definitive diagnostic and clinical treatment strategies and recognizes when referral to Critical Care or specialist neurology is indicated.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 23. Assessment of pupil and light reflex

Very Important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 24. Assessment of pupil and light reflex

- Measures size of pupils, assesses light reflex and has knowledge of what constitutes an abnormal reaction and pupil size.
- Interprets pupillary size and response to light in context of patient Understands clinical significance of either abnormal pupil size or response to light reflex. Responds in accordance with local escalation protocols.
- Has knowledge of the diagnostic and clinical therapies that are indicated in the context of an abnormal pupil size or light reflex. Refers to "secondary responder".
- Initiates definitive diagnostic and clinical treatment strategies and recognizes when referral to Critical Care or specialist neurology is indicated.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 25. Glasgow Coma Score

Very Important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 26. Glasgow Coma Score

- Measures and records score and has knowledge of what constitutes an abnormal value.
- Interprets score in context of patient and understands clinical importance of an abnormal score. Responds in accordance with local escalation protocols.
- Has knowledge of the diagnostic and clinical therapies that are indicated in the context of an abnormal score. Refers to "secondary responder".
- Initiates definitive diagnostic and clinical treatment strategies and recognizes when referral to Critical Care or specialist neurology is indicated.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 27. Cervical spine protection

Very Important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 28. Cervical spine protection

- Recognizes not to move patient after major trauma unless instructed by clinical staff.
- Maintains spinal immobilization once initiated.
- Assesses risk for spinal immobilization. Initiate spinal immobilization procedures.
- Identifies the indications for requesting imaging and when to request senior assistance.
- Interprets cervical spine radiograph and recognizes when referral for specialist advice required

Q-Comp Domain 4: Transport & Mobility

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

COMPETENCY GROUPS: TRANSPORT & MOBILITY

COMPETENCY GROUPS: TRANSPORT & MOBILITY

The following questions contain headings of competency groups related to **TRANSPORT & MOBILITY**. These competency groups have been linked to providing care to the deteriorating ward patient.

Please read each of the competency group headings and rate how important these are to you in providing care for the deteriorating ward patient in your current role as a graduate nurse.

Should you rate a particular competency group as "1 = very important" or "2 = important" to you in your current role as a graduate nurse, then a second set of questions will be revealed.

These questions will ask you to choose from a list specific competency elements that relate to your role when dealing with the deteriorating ward patient.

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 29. Patient handling equipment and beds

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 30. Patient handling equipment and beds

- Recognizes equipment.
- Uses in accord with local protocols.
- Identifies need for specialist bed and handling requirements.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 31. Portable suction

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 32. Portable suction

- Can identify equipment and seeks advice if unclear, transports equipment to the ward.
- Uses in accord with local protocols.
- Uses equipment and adjuncts (e.g. yakeur sucker and suction catheters).

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 33. Portable monitoring

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 34. Portable monitoring

- Identifies and transports equipment to the patient.
- Assists in setting up of the equipment.
- Uses portable monitoring equipment to measure heart rate, oxygen saturation, respiratory rate and blood pressure.

Q-Comp Domain 5: Patient Centred Care, Teamworking & Communication

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

COMPETENCY GROUPS: PATIENT CENTRED CARE, TEAMWORKING & COMMUNICATION

COMPETENCY GROUPS: PATIENT CENTRED CARE, TEAMWORKING & COMMUNICATION

The following questions contain headings of competency groups related to Patient Centred Care, Teamworking & Communication. These competency groups have been linked to providing care to the deteriorating ward patient.

Please read each of the competency group headings and rate how important these are to you in providing care for the deteriorating ward patient in your current role as a graduate nurse.

Should you rate a particular competency group as "1 = very important" or "2 = important" to you in your current role as a graduate nurse, then a second set of questions will be revealed.

These questions will ask you to choose from a list specific competency elements that relate to your role when dealing with the deteriorating ward patient.

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 35. Documentation

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 36. Documentation

- Produces clear, legible documentation of the event. E.g. note of event, date, time, signature, and print name and contact details.
- Writes a structured note of the event including a referral plan.
- Incorporates within the documentation a management plan and timescale for reassessment. Identifies when referral to the secondary responder will be indicated.
- Incorporates within the documentation situations when referral to critical care is appropriate and timescale for reassessment after secondary intervention.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 37. End of shift handover

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 38. End of shift handover

- Undertakes handover to next shift. Receives information. Documents and communicates appropriately to other members of the multi-disciplinary team.
- Communicates frequency of observations and ongoing management plans for all patients who have reached the low, medium or high trigger and also for those where there is clinical concern.
- Evaluates clinical progress in conjunction with the ongoing management plans for all patients who have reached medium or high triggers and also for those where there is clinical concern. Communicates to next shift.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 39. Need for management plan

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 40. Need for management plan

- Communicates to staff who are competent in the management of acutely ill patients.
- Recognizes lack of plan.
- Documents plan request and / or formulates management plan.
- Reviews management plan and refines if necessary.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 41. Patient not improving

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 42. Patient not improving**

- If aware or informed by patient that they are not improving, makes a structured call for help (e.g. using the SBAR or RSVP approach) in accord with local policy and records communication pathway.
- Interprets clinical deterioration in the context of the patient, adjusts frequency of observations and level of monitoring and initiates management strategies in accord with local protocols.
- Identifies when clinical intervention is required. Initiates diagnostic tests and institutes clinical management therapies.
- Formulates diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognizes when referral to Critical Care is indicated.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 43. Call for help: patient sick or cause for concern

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 44. Call for help: patient sick or cause for concern

- Communicates need for help in accord with local policy.
- Interprets and documents patient condition, adjusts frequency of observations and level of monitoring in accord with local protocol.
- Identifies when clinical intervention is required. Initiates diagnostic tests and institutes clinical management therapies. Performs resuscitation to in-hospital standard.
- Formulates diagnosis, evaluates effectiveness of treatment, refines treatment plan if necessary and recognizes when referral to Critical Care is indicated.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 45. Call for help: arrested or unconscious patient

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 46. Call for help: arrested or unconscious patient

- Communicates need for help in accord with local policy.
- Initiates in hospital resuscitation. Dials 333.
- Performs resuscitation to "in hospital" standard..
- Recognition of potential causes pertinent to the individual patient.
- Advanced life support with a broad approach to finding information and treatment of specific causes of unconsciousness or cardiac arrest.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 47. Breaking bad news

Very important

Important

Of little importance

Not important

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 48. Breaking bad news

- Supports patients and/or those close to them.
- Identifies need to inform primary responder. Contacts friends or relatives, if time, to be with receiver of bad news.
- Informs senior clinician and may deliver bad news under supervision. Documents discussion. Liaises with carers.
- Breaks bad news and documents discussion in the notes.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 49. End of Life Care

Very important

Important

Of little importance

Not important

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 50. End of Life Care

- Respects patient's dignity and privacy.
- Ensures clear documentation of events.
- Facilitates expression of a patient's and their family wishes. Provides holistic care.
- Determines a patient and their family wishes. Communicates end of life wishes to all staff.
- Institutes appropriate end of life care to comply with the patient's wishes. Regularly reviews decisions and plan. Checks for possible patient's Advanced Directive.
- Recognizes when to refer for palliative care and when to introduce a structured

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 51. Team Working: Provides information in a structured format that conveys clinical urgency e.g. using techniques such as SBAR

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 52. Teamwork: Provides information in a structured format that conveys clinical urgency e.g. using techniques such as SBAR

- Professional and respectful in approach. Actively listens. Gives clear information.
- Communicates with patient/carers. Documents discussion in notes. Informs senior staff.
- Gives clear instructions and communicates with senior staff when appropriate. Feedback given to junior members of the team.
- Recognizes when secondary responder needs to be informed .
- Evaluates effectiveness of communication. Recognizes when referral to Critical Care is indicated.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 53. Participation in whole team review and reassessment

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 54. Participation in whole team review and reassessment

- Participates in review, documents actions and communicates to senior staff.
- Communicates to primary responder after review. Feedback given to junior members of the team.
- Examines patient, gives clear instructions and communicates with secondary responder.
- Leads the team, including giving feedback to all members of the team.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 55. Personal Responsibility and Accountability

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 56. Personal Responsibility and Accountability

- Is aware of accountability.
- Complies with code of professional conduct, complies with local policies.
- Recognizes leadership role within the team and responsibility to refer to secondary responder.
- Acknowledges overall responsibility for the care of a patient

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 57. Decision Making

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 58. Decision Making**

- Is aware of policies, complies with policies.
- Interprets observations, adjusts frequency of observations and level of monitoring, provides nursing intervention and communicates with primary responder when escalation of care is required. Feedback given to junior members of the team. Recognizes own limitations.
- Identifies when clinical intervention is required. Initiates treatment ,monitors patient response, recognizes limitations. Communicates with secondary responder when further escalation or de-escalation of care is indicated.
- Formulates diagnosis if not already done. Evaluates effectiveness of management plan, refines where appropriate and communicates with critical care when further escalation of care is needed. Recognizes when de-escalation of care is appropriate and the patient requires palliative care in-put. Communicates decisions to patient, carers and team.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 59. Leadership

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 60. Leadership

- Adopts leader or follower role as appropriate.
- Reviews team working and identifies areas for improvement. Recognizes when team support is required and identifies strategies to enhance team working.
- Works to resolve problems.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 61. Ethics/ medico-legal

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 62. Ethics/ medico-legal**

- Has an awareness of concepts. Acknowledges limitations.
- Works within established hospital procedures. Acknowledges limitations.
- Works independently, can review and agree plan. Seeks advice or second opinion as needed.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 63. Patient Safety: Electrical Safety

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 64. Patient Safety: Electrical Safety

- Recognizes basic electrical safety and associated clinical risk. Communicates concerns to ward staff and instigates appropriate action to avoid patient harm.
- Recognizes and documents clinical risk associated with the equipment on which training has been given. Communicates risk to senior staff and initiates appropriate action.
- Assesses, quantifies and documents risk in the workplace. Initiates appropriate action to minimize clinical risk and communicates risk to primary responder.
- Quantifies individual risk, acts to prevent or minimize it.
- Manages risk-benefit across groups of patients e.g. triage.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 65. Moving and Handling

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 66. Moving and Handling**

- Recognizes clinical risk associated with moving and handling using a standard format e.g. task, individual, load and environment. Communicates concerns to ward staff and instigates appropriate action to avoid patient and personal harm.
- Recognizes and documents clinical risk associated with the equipment for moving and handling on which training has been given using a standard format e.g. task, individual, load and environment.. Communicates risk to senior staff and initiates appropriate action.
- Assesses, quantifies and documents risk in the workplace using a standard format e.g. task, individual, load and environment.. Initiates appropriate action to minimize clinical risk and communicates risk to primary responder.
- Quantifies individual risk using a standard format e.g. task, individual, load and environment.. Acts to prevent or minimize it.
- Manages risk-benefit across groups of patients e.g. triage.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 67. Falls

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

*** 68. Falls**

- Recognizes clinical risk associated with falls. Communicates concerns to ward staff and instigates appropriate action to avoid harm.
- Recognizes and documents clinical risk associated with falls. Communicates risk to senior staff and initiates appropriate action.
- Assesses, quantifies and documents risk in the workplace. Initiates appropriate action to minimize clinical risk and communicates risk to primary responder.
- Should document probable cause of the fall and institute measures to prevent recurrence in that patient. Quantifies individual risk, acts to prevent or minimize it.
- Should document probable cause of the fall and institute measures to prevent recurrence in that patient. Manages risk-benefit across groups of patients e.g. triage.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 69. Applies infection control policies to minimize risk of Hospital Acquired Infections

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 70. Applies infection control policies to minimize risk of Hospital Acquired Infections

- Adheres to hospital infection control policy.
- Documents infection-related hazards and communicates such hazards to all staff.
- Provides leadership on the ward for Hospital Acquired infections (HAI).
- Implements measures in collaboration with infection control staff to limit risk.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 71. Microbiology samples

Very important	Important	Of little importance	Not important
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 72. Microbiology samples

- Transports samples according to local protocols.
- Performs microbiological sampling under supervision
- Independently performs microbiological sampling as requested.
- Has knowledge of which microbiological samples are required.

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please rate how important this competency group is to you in providing care for the deteriorating ward patient

* 73. Blood culture

Very important

Important

Of little importance

Not important

Part 4: Acute Neurological, Transport & Mobility, Patient Centered Care Competencies

Please choose the element/s that best reflect your current level of practice when dealing with a deteriorating ward patient. You may choose more than one element.

* 74. Blood culture

- Can transport samples according to local protocols.
- Identifies and transports equipment to the patient.
- Recognizes when a blood culture is appropriate and identifies equipment required and procedure to undertake the intervention.
- Performs blood cultures according to local aseptic policy.

Appendix 10: Focus Group Interview GRN Consent



GRADUATE NURSE FOCUS GROUPS:

Dear Colleague,

I am currently enrolled as a PhD candidate at the University of Notre Dame Australia, School of Nursing and Midwifery. My PhD research project is entitled "The identification of the role and competencies of the graduate nurse in recognising and responding to the deteriorating patient in an acute ward environment: A mixed methods study". It explores the role of the graduate nurse in caring for the acutely unwell deteriorating ward patient and identifies the competencies that are important in caring for these patients.

There are four phases within the research study, two of which involve graduate nurses and data collection. The first phase of data collection has been completed and involved asking graduate nurses to complete several online questionnaires related to the management of the deteriorating patient.

The second phase of data collection will involve focus group interviews and this is where I need your help. The focus groups will involve graduate nurses and will explore their roles, competencies and possible future training needs to manage the deteriorating ward patient.

I am therefore inviting you to participate in a focus group at SJOGH Subiaco. Each group will involve around 5 to 8 graduate nurses from different areas/departments of the hospital along with myself as the group facilitator. The focus group will last around 40 minutes and will be undertaken at the end of pre-organised study day within SJOGH Subiaco (dates to be confirmed).

As the facilitator, I will ask a number of open questions to the group and hopefully this will generate a discussion of ideas from the group. The focus group discussions will be audio recorded by myself and I will also make notes whilst the group is discussing the different questions.

Participation in the focus groups is completely voluntary and participants can opt out of the focus groups at any time. All information shared within the group will be anonymised and will remain confidential. All recorded information will be stored in accordance with strict data protection protocols. The project has been approved by the University of Notre Dame Australia Human Research Ethics Committee.

I hope you will be able to join the focus groups. A consent form for involvement in the focus groups is included below. If you are keen to be involved please could you sign and date the consent form and return it to..... Once the consent forms have been collated, I will contact you to let you know the dates for the focus groups. Thanks again for your involvement.

Kind regards

Steven Hardman

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CONSENT FORM: GRADUATE NURSE FOCUS GROUPS

Title of Project: *"The identification of the role and competencies of the graduate nurse in recognising and responding to the deteriorating patient in an acute ward environment: A mixed methods study".*

Name of Researcher: **Steven Hardman**

Please initial

1. I confirm that I have read and understand the information concerning the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason or legal rights being affected.
3. I agree to take part in the focus groups for the above PhD study and will treat all information disclosed as confidential.

Name of Participant Date Signature

Researcher Date Signature