

**School of Nursing and Midwifery**

**The development, implementation and evaluation of a shared care  
model of nursing in a tertiary hospital using participatory action  
research and practice development**

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**This thesis is presented for the Degree of  
Doctor of Philosophy  
of  
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## **Declaration**

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signature: .....

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## LIST OF ABBREVIATIONS

Name	Abbreviation
Advanced incident management system	AIMS
Assistants in nursing	AIN
Australian Bureau of Statistics	ABS
Australian Institute of Health & Welfare	AIHW
Certified nursing assistant	CNA
Clinical activities coordinator	CAC
Clinical nurse manager	CNM
Clinical Nurse Specialist	CNS
Coefficient	Coef
Confidence Interval	CI
Data, action, responsive	DAR
Department of Education, Employment & Workplace Relations	DEEWR
Director of Nursing	DON
Emancipatory practice development	ePD
Enrolled Nurse	EN
Intensive Care Unit	ICU
Intercostal catheter	ICC
Interquartile range	IQR
Licensed practical nurses	LPN
Model of care	MOC
Model of nursing care	MONC
New South Wales	NSW
Nursing Director	ND
Nursing Executive Council	NEC
Odds ratio	OR
Organisation for Economic Cooperation and Development	OECD
Participatory action research	PAR
Patient care attendant	PCA
Registered Nurse	RN
Shared care model	SCM
Situation, Background, Assessment, and Recommendation	SBAR
Staff development nurse	SDN
State major trauma unit	SMTU
Statistical term that indicates a difference between two coefficients	ISCMX
Time management plan	TMP
Transforming Care at the Bedside	TCAB
United States of America	USA
Urinary tract infection	UTI
Venous access catheter	VAC

## **GLOSSARY OF NURSING MODELS OF CARE**

### **Primary nursing**

The focus of primary nursing is to provide patient centred care whereby each patient is assigned a primary nurse (RN) who has 24 hour responsibility and the authority to assess, plan, organise, implement, coordinate and evaluate care in collaboration with patients and their families. The primary nurse is supported by an associate nurse (RN) who follows the care plans prepared by the primary nurse when delivering care.

### **The total patient care model**

A registered nurse (RN) is responsible for the clinical decision making and provision of all care requirements for an assigned group of patients for the period of each shift.

### **Patient allocation model of care (same as total patient care model)**

This model relies on an experienced registered nurse workforce whereby nurses have the appropriate expertise to provide all assigned patient care requirements for a group of patients for the period of each shift.

## **VARIATIONS OF TEAM NURSING**

### **Team nursing**

A RN undertakes the role of team leader and guides and supervises a small group of nurses or a combination of registered and unregistered staff. They are collectively responsible for the provision of care requirements either through task allocation or elements of total patient care.

### **Functional care delivery model**

The charge nurse delegates tasks to individual staff for patient care. A RN undertakes complex care and routine tasks are assigned to either nurses or ancillary personnel, depending on their skill level.

### **Team oriented “partners-in-care”**

Model reduced the number of RNs and introduced ENs and assistants in nursing (AIN). Using a team nursing approach working on a ratio of two RNs and one AIN or one RN, EN and AIN to care for 10 to 13 patients depending on patients’ acuity and staff level.

**Team nursing RN, licensed practical nurses (LPN) & certified nursing assistant (CNA)**

A team of one RN, two LPN certified to administer both oral and intravenous medications and one CNA were collectively responsible for 12 patients. The RN was responsible for overseeing patient management and delegation of appropriate tasks such as administration of medications and, when working under the RN supervision, complex technical care to the LPNs, and patients' personal needs to the CNA.

**Collaborative “shared care model”**

Teams of staff, led by a team leader, allocated a group of patients with a less skilled staff member supported by a dedicated “care partner” (experienced nurse). The model contained elements of patient allocation and team nursing as staff were allocated responsibility for care delivery within the group of patients but were collectively responsible for overall care for allocated group of patients.

**Shared care model (This study)**

Pairing of an experienced nurse with a less experienced nurse who are then responsible for the care requirements of the group of patients allocated by the shift coordinator (SC). The model used either a team nursing approach or a combination of patient allocation and team nursing. Teams ranged from two nurses to five staff with a mix of registered and unregistered staff.

## **ABSTRACT**

For the last decade there has been a growing body of international evidence demonstrating the adverse effects on patient care caused by the continued international shortage of registered nurses (RN). One solution being explored in hospitals in Australia is to change their staffing mix by recruiting more graduate RNs, enrolled nurses (EN) and introducing unregulated workers (nursing assistants) as a strategy to increase the nursing workforce. To assist with managing the varied skill mix, hospitals have investigated team nursing as an alternative to the established RN dependent patient allocation model of nursing delivery. There is no conclusive evidence that demonstrates the impact of one model of care as compared to another in terms of satisfaction, quality and cost of care.

Major deficits exist in team based nursing research. These are largely due to the small scale of the studies; focus on its use in medical and surgical wards and limited evaluation measures for staff and patients' satisfaction and patient outcomes. Consequently, these studies have not demonstrated team nursing as an effective model in supporting nurses deliver care nor as a model that ensures the provision of quality patient care. This study addresses these deficits and provides a strong evidence base for the use of team based nursing in tertiary hospitals to both support nursing staff and contribute to positive patient outcomes.

The purpose of this study was to develop, implement and evaluate a team based model (subsequently coined Shared Care Model or SCM), that supported the different levels of skill mix in the provision of safe care for patients admitted to 21 nominated wards (571 beds) at the study hospital. The impact the SCM had on nurses' workload, team approach to organisation and provision of nursing care, culture of support, nursing rounds, bedside and board handover were investigated. In addition, the impact the SCM had on patient satisfaction, patient complaints and adverse incidents was investigated.

The philosophical base for this study was critical social theory and the methodology participatory action research (PAR), underpinned by principles and processes of emancipatory practice development (ePD). Data instruments included

validated staff and patient satisfaction questionnaires and the study hospital's clinical incident and complaint management's electronic systems and databases

The major findings of the study were statistically significant increases in learning opportunities and more manageable workloads associated with a less experienced nurse working with a more experienced nurse. However, this did not have an overall statistically significant effect on improving the culture of support nor ensuring manageable workloads. Statistically significant reductions were found in the four major adverse events measured of medications, falls, injuries and behaviour. Patient satisfaction was statistically significantly improved in relation to discharge planning and there were significant reductions in complaints associated with the manner in which patient were treated by nurses. Despite maintaining high levels of patient satisfaction throughout the study period there were statistically significantly more complaints in relation to the quality of clinical care. These findings establish that combinations of RNs of different levels of experience when working together as a team either in pairs or with unregistered staff provides safe patient care for a diverse range of clinical specialities.

## CHAPTER ONE

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### *INTRODUCTION*

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In 2004 the Organisation for Economic Cooperation and Development (OECD) reported widespread nursing shortages in all but a few OECD countries (OECD, 2004). Various predictions of nursing shortfalls were made such as in Canada a shortage of 60,000 Registered Nurses (RN) by 2022, (Canadian Nurses Association, 2009), in America a shortage of 340,000 by 2020 (Auerbach; Buerhaus; & Staiger, 2007) and in Australia a shortfall 61,000 by 2012 (Access Economics, 2004). The main cause of the shortage reported by the OECD (2004) and National Centre for Health Workforce Analysis (2007) is the ageing RN workforce, insufficient enrolments in nursing undergraduate courses, poor recruitment and retention policies, and ineffective use of available nursing resources through inappropriate skill mix and utilisation. These issues affecting the supply of nurses are compounded by those exerting pressures on demand for nursing services such as ageing populations, a growing burden of chronic and non-communicable diseases, and improved life expectancy (OECD, 2004).

The impact of nursing shortages has been shown to have an adverse effect on patient care. Several international studies have demonstrated the negative association of lower registered nurse staffing levels to increased mortality rates; (Aiken, Clarke, Cheung, Sloane, & Silber, 2003; Aiken, Clarke Sloane, Sochalski, & Silber, 2002; Estabrooks, Midodzi, Cummings, Ricker, & Giovannetti, 2005; Rafferty, et al., 2007), adverse events after surgery; (Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002) and increased patient complications (Duffield et al., 2011). Consequently, the risks to patient care with prolonged nursing shortages are high and require a range of urgent and sustainable solutions to ensure safe and effective patient care.

One potential solution to the challenges resulting from a nursing shortage is the identification and implementation of the most efficient staffing mix to deliver quality nursing care. This study provides an insight into the approach taken by a large tertiary hospital to address a growing reliance on an inexperienced workforce to provide nursing care. The study involved developing and implementing a team based

nursing delivery model and evaluating its impact on a range of staff and patient measures.

## 1.1 Background

In Australia although there continues to be a shortage of both RNs and enrolled nurses (EN) there has been an increase of 25% in RNs over the past five years (Department of Education, Employment & Workplace Relations [DEEWR], 2011). This is contributed to two factors influencing the supply of RNs. Firstly the average age of RNs has decreased from 45.1 years in 2005 to 44.3 years in 2009 (Australian Institute of Health & Welfare [AIHW], 2011). Secondly, with the exception of 2008, there has been an upward trend in nursing enrolments since 2004 to 2009 (DEEWR, 2011).

In Western Australia, where this study was undertaken, nurses' demographics from the most recent statistics published by the Department of Health (2008) indicate they are largely comparable with national statistics. The majority of nurses are RNs (87%), with the remaining 13% ENs which is lower than the national figures of 19% (AIHW, 2011). The average age of nurses, unlike the national trend, but still lower than the national average, increased from 41.8 years in 2001/2002 to 43.4 years in 2007/2008 and more than one third are expected to retire in the next decade (Department of Health, 2008). Enrolments in nursing undergraduate courses have followed the same upward national trend. The percentage of registered nurses working full time of 42% is lower than the national average of 49% (Australian Bureau of Statistics [ABS], 2006) and decreased from 44.5% in 2001/2002 (Department of Health, 2008).

However, Australian health services cannot afford to be complacent. Demand for nurses is expected to increase over this decade (DEEWR, 2011) due to population growth and an ageing population combined with enhanced research and technology, leading to more refined diagnoses and complex treatments, and improved access to comprehensive services (AIHW, 2011). In addition, significant challenges remain associated with 37% of RNs aged 50 years and over and nearly 15% of nurses retiring every five years (AIHW, 2011). These are projected to result in a cumulative exodus of 90,000 nurses by 2026 (AIHW, 2011). Finally there are persistent concerns of poor

retention. These concerns are related to excessive workload, burnout, low morale and job dissatisfaction (Department of Education Science & Training, 2001; Duffield et al., 2011) contributing to 19% of nurses (RNs 9.2%, ENs 9.7%) choosing not to remain in the nursing workforce (AIHW, 2011).

Today's nursing environment in Australia is characterised by a reliance on part time ageing workforce, (AIHW, 2011), generational differences as the baby boomers are gradually replaced with generation X and Y (Shacklock & Brunetto, 2011) who have different attitudes to and beliefs about work (McNeese-Smith & Crook, 2003), increasing patient acuity (AIHW, 2011) and high patient turnover causing an increase in nurses' workload (Duffield et al., 2011). Inevitably an increased workload leads to reduced standards of patient care (Duffield et al., 2011), often accompanied with patients and their families abusing nursing staff as they experience delays in their care (Araujo & Sofield, 2011). Sadly, work place aggression is not limited to patients and families as nurses are exposed to aggression from their nursing colleagues and co-workers (Farrell, C. Bobrowski, & Bobrowski, 2006; Duffield et al., 2011). The distress experienced by nurses caused by workplace aggression has resulted in attrition from the profession and has also been associated with contributing to the potential to make errors or to affect productivity (Farrell et al., 2006). These features of today's nursing environment must be considered at the level of patient care delivery where interaction with patients and staff occur while dealing with complexities associated with the demands on nursing services.

Faced with an imbalance between supply and continued rise in demand, a nursing service cannot afford to lose its experienced staff, nor jeopardise the future of its new and inexperienced workforce as a consequence of its poor work environment. Consequently, solutions that focus on supporting nurses in the provision of nursing care and directed at improving their work environment are required.

The most substantial organisational approach, reported in the literature over the last ten years, to address nursing shortages, improve nurse retention and support nurses in the delivery of nursing care has occurred in the United States of America (USA). This approach has been to focus on developing the culture of the organisation so that patients receive excellent nursing care from nurses practicing in a very

supportive environment. Characteristics of this Magnet culture, as it has become known, include shared governance for achieving nursing excellence through innovation engagement with staff, and funded approaches that provide growth and learning opportunities (Steinbinder, 2005).

Hospitals that have pursued Magnet status have experienced positive benefits for nurses such as higher levels of job satisfaction, greater control over their decision making (Brady-Schwartz, 2005; Scott, Sochalski, & Aiken, 1999), a more supportive work environment, lower levels of burn-out and greater intent on the part of staff to stay in their current job (Lacey, et al., 2007; Laschinger, Shamian, & Thomson, 2001). These have resulted in hospitals being able to attract and retain staff (Pieper, 2003). Benefits to patients are less conclusive as historical reports of lower mortality and morbidity rates (Aiken, Slone, Lake, Sochalski, & Weber, 1999; Aiken, Smith, & Lake, 1994) were not found in more recent studies (Goode, Blegen, Park, Vaughn, & Spetz, 2011; Hickey, Gauvreau, Connor, Sporing, & Jenkins, 2010).

In contrast to Magnet hospitals' approach of changing an organisation's culture, as a solution to challenges associated with a shortage of nurses, other hospitals have focused on supporting nurses manage their changing skill mix in the delivery of nursing care at the ward level within hospitals (Brack, & Sandford, 2010; Fairbrother et al., 2010; Fowler, Hardy, & Howarth, 2006; Hayman, Wilkes, & Cioffi, 2008, O'Connell, Duke, Bennett, Crawford, & Korfiatis, 2006; Tran, Johnson, Fernandez, & Jones, 2010; Walker, Donoghue, & Mitten-Lewis, 2007).

## **1.2 Delivery of Nursing Care - Team Nursing**

One approach to the issue of the ongoing increase in demand for nursing services and the changed work environment being explored in Australia has been to investigate team nursing as an alternative method of nursing care delivery. The appeal of team nursing is that patient care is provided by a varied skill mix including registered and enrolled nurses and nursing assistants (Marquis & Huston, 1992) and is therefore less reliant on an RN workforce required for the patient allocation model (Gullick, Shepherd, & Ronald, 2004) commonly used throughout Australian hospitals (Fairbrother, Jones, & Rivas, 2010). The reintroduction of team nursing, which can be categorised as an old solution to a problem experienced in the 1940's (nursing

shortages), needs a 21<sup>st</sup> century approach to manage the unique differences experienced today.

Australian studies have explored a variety of skill mix within the teams including registered and enrolled nurses (Brack, & Sandford, 2010; Fairbrother et al., 2010; Fowler, Hardy, & Howarth, 2006; Hayman, Wilkes, & Cioffi, 2008) and teams of registered and enrolled nurses along with nursing assistants (O'Connell, Duke, Bennett, Crawford, & Korfiatis, 2006; Tran, Johnson, Fernandez, & Jones, 2010; Walker, Donoghue, & Mitten-Lewis, 2007). Staff satisfaction was the main nursing outcome measure employed in these studies with mixed results. For example Fairbrother et al. (2010) reported an increase in job satisfaction while Tran et al. (2010) found a decrease in satisfaction with co-workers. Limited assessments were made regarding the impact on patient care, with Fowler, et al. (2006) reporting an increase in incidents, accidents and infection rates and Walker et al. (2007) reporting more time for direct patient care activities.

Results of these studies have provided limited evidence to influence large scale practice change due to their small size, concentration on medical and surgical wards, variability of staff and limited patient outcome measures. Of particular concern is the lack of evidence to indicate the impact of team nursing on factors related to nurses' work environment and culture, and the delivery of safe care to patients.

### **1.3 Purpose of the Study**

The purpose of the study was to develop a team based model (subsequently coined Shared Care Model or SCM) to replace the established patient allocation nursing delivery model in the majority of wards in a large tertiary hospital and to investigate its effect on staff and patient outcomes. The 21 wards involved covered speciality areas as well as medical and surgical wards. The philosophical base for this study was critical social theory and the methodology participatory action research (PAR), underpinned by principles and processes of emancipatory practice development (ePD).

The aims of the study were fourfold:

To develop and implement a shared care model (SCM) of nursing care that supports the different levels of skill mix in the provision of safe care for patients admitted to 21 nominated wards (511 beds) at the study hospital;

To determine the impact the SCM had on nurses' workload, team approach to organisation and provision of nursing care and the culture of support;

To evaluate the impact of interventions nominated by nurses to be incorporated into the SCM: nursing rounds, bedside and board handover;

To investigate the impact the SCM had on patient satisfaction, patient complaints and adverse incidents.

#### **1.4 Significance of the Study**

Given the international shortage of nurses, this study's findings have local, national and international significance as health sectors adjust to providing nursing services with a greater mix of unregistered staff. Equally important is the need to demonstrate ways of delivering nursing care within a supportive environment that promotes staff retention (Bartram, Joiner, & Stanton, 2004).

A major deficit in the literature is the lack of empirical data which evaluates nursing delivery models of care to assist with conclusively demonstrating the impact of one model of care as compared to another in terms of satisfaction, quality and cost of care (Tiedeman & Lookinland, 2004). Consequently, there is insufficient evidence to guide health services in determining the optimal nursing delivery model suitable for its changing workforce in today's complex work environment. A continued lack of evidence will result in nurses endeavouring to manage, as best they can, the nursing shortages and changing skill mix when delivering care, without the evidence to support their practice. In Australia, in New South Wales (NSW), Duffield, Roche, Diers, Catling-Paull, and Blay (2010) found nurses used different nursing delivery models dependent on patient needs and available staff skills on a shift by shift basis. The impact of this ad hoc approach is unknown in terms of staff and patient outcomes but

may put the profession at further risk of greater attrition rates and lead to poor patient outcomes.

At a local level findings of safe, quality patient care using a team based model, including assistants in nursing (AINs) and patient care attendants (PCA) who hold a Certificate III in Health Service Assistance (Acute Care), has specific implications for the study hospital and Western Australia. From the hospital perspective, since supporting PCAs to undertake a Certificate III in Health Service Assistance (Acute Care) in 2006, application of the skills obtained in this training have been limited as PCAs maintained their main duties of cleaning, patient transport, and ward errands. From a hospital and state perspective, learning how to support nurses of varied levels of experience in the delivery of quality patient care is important due to the growing reliance on inexperienced nurses.

In Australia, the shortage of RN has resulted in a move away from the largely RN dependent patient allocation model towards a more team oriented approach (Duffield et al., 2010) with the introduction of AINs (Deshong & Henderson, 2010). Adopting a varied skill mix as part of a nursing service exposes hospitals in all states and territories to significant challenges associated with the provision of safe and effective patient care. Given the established links between a RN workforce and positive patient outcomes (Aiken et al., 2002; Aiken et al., 2003; Duffield et al., 2011; Estabrooks et al., 2005; Needleman et al., 2002; Rafferty, et al., 2007;) and the limited evidence from team based studies regarding patient outcomes, this study's findings provide reassurance at a national level regarding the delivery of safe quality patient care using team nursing.

Two contributing factors of the nursing shortage are difficulties in recruiting experienced RN to return to the profession and retaining nurses with varied amounts of experience (Shacklock & Brunetto, 2011). Both factors are associated with the demands of patient care influenced by high patient turn over, increased acuity, increased workloads and work place aggression (Duffield et al., 2011). None of the team based studies specifically evaluated this staffing approach's impact on supporting nurses in managing these demands and its influence on their work culture. This study addresses this identified gap in team based nursing research by providing evidence

indicating staff's perception of team based nursing on their workload and culture. In addition, learning can be gained from the qualitative data regarding nurses' values, expectations of each other, their interactions and how these influence the delivery of patient care.

The reality of an international nursing shortage will mean all clinical areas will experience a shortage of RNs, yet the small scale team based studies have been limited to medical and surgical areas. Therefore their limited findings cannot be applied outside of these clinical areas and only partially within these areas, due to the methodological constraints associated with their small sample size and inadequate evaluation measures. The uniqueness of this (the largest team based nursing study to date), is that it has been undertaken across a diverse range of 21 clinical areas in a tertiary hospital. The large scale has enabled significant power to generate statistically significant findings for the quantitative measures and the major qualitative component has provided an understanding of the nurses' experience so that results are applicable across most tertiary hospital wards throughout Australia and other OECD countries.

In summary the significance of this study is fourfold. First, this research makes a valuable contribution to filling gaps in the literature to date relating to the safe use of team based nursing in a diverse range of clinical areas in a tertiary hospital. Secondly, for the first time the impact of team based nursing and pertinent nursing issues of workload and work culture have been evaluated. Thirdly, the study provides evidence that staff with a varied skill mix working in teams can safely provide patient care and adds to the body of knowledge linking patient outcomes and nursing care by demonstrating the association between adverse events and nursing care. Finally, the study provides valuable insights for nurse researchers and health administrators regarding the use of participatory action research (PAR) and emancipatory practice development (ePD) methodology to genuinely engage nurses in participating in research that influences how they practice.

## 1.5 Overview of the Thesis

The thesis is presented in seven chapters:

1. Chapter One provides the background, aims and significance of the study.
2. Chapter Two presents a review of the literature relating to the types of nursing delivery models including specific studies of team nursing and their impact on both staff and patient outcomes. The impact of nurses' environment on staff satisfaction and patient outcomes are also reviewed. Finally, specific components associated with the provision of nursing care of handover and nursing rounds are reviewed.
3. Chapter Three outlines the methodological design of the study including its aims and rationale for the research design and its application in the pilot study. Details of each phase of the research process is described along with recruitment and eligibility criteria, data instruments and data collection tools, statistical methods, qualitative analysis and ethical considerations.
4. Chapter Four focuses on the findings related to the impact of the Shared Care Model on nurses. It details results of both the pilot study and the main study qualitative and quantitative analysis of the data from the staff solution focused sessions and staff surveys pertaining to nurses' workload, team approach to organisation and provision of nursing care and culture of support, along with nursing rounds, and bedside and board handover.
5. Chapter Five then describes the pilot study findings and main study demographic characteristics along with the statistical and content analysis pertaining to the patient outcome measures of satisfaction, complaints and adverse events.
6. Chapter Six presents the discussion pertaining to the findings. The limitations of the study are also discussed.
7. Chapter Seven discusses recommendations in relation to the study findings. In addition, areas for further research are identified and conclusions drawn.

## CHAPTER TWO

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### *LITERATURE REVIEW*

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This chapter provides an overview of the evidence associated with the types of nursing delivery models including specific studies of team nursing and their impact on both staff and patient outcomes. In addition, the impact of elements of the nurses' working environment on staff satisfaction and patient outcomes are reviewed. Finally, research related to two specific methods of communication associated with the delivery of nursing care - nursing rounds and handover is summarised.

#### **2.1 Overview of Search Strategies**

The search strategy sought to find published and unpublished studies and reports written in the English language through the following databases: CINAHL, MEDLINE, ProQuest, Joanna Briggs Institute, Google scholar, and subject relevant web sites. With the exception of sourcing historical information from 1946 to 1990, the majority of the search focused on studies from 1995 to 2011, and the most current national and state reports. Search terms related to the studies patient aims included: patient safety, patient satisfaction, magnet hospitals and patient outcomes, clinical incidents, medication errors, falls, and discharge planning. Search terms in relation to nursing staff and the studies aims included: nursing delivery models, primary nursing, team nursing, patient allocation, participatory action research, action research, practice development, solution-focused approaches, facilitation methods, Magnet hospitals' outcomes, nursing shortage, nursing workload, nursing satisfaction, nursing workforce, nursing staffing, work environment, adult learning, critical reflection, work-based learning, leadership, theory and practice, nursing retention, nursing attrition, workplace aggression, workplace violence, verbal abuse, teambuilding, teamwork, nursing rounds and handover.

#### **2.2 Types of Nursing Models of Care Delivery**

Since the days of Florence Nightingale a number of different nursing models have been used to deliver care to patients, with their development influenced by various driving forces. These models differ in the clinical decision making, process employed, method of work allocation, and the means of communication and

management utilised. They include total patient care, currently known as the patient allocation model, functional patient care, team and primary nursing (Tiedeman & Lookinland, 2004).

The total patient care model is the oldest model (Marquis & Huston, 1992) and is believed to be based on one used by Irish nurses in the Crimean War and adopted by Florence Nightingale (Meehan, 2003). The total patient care delivery model described by Ringl (1994) is characterised by a registered nurse (RN) being responsible for the clinical decision making and provision of all care requirements for an assigned group of patients for the period of each shift. Consequently, it is essential the RN has the necessary skills and expertise to meet the complexity of patient needs. Both staff and patients have reported benefits associated with the model. From a staff perspective it enables a degree of autonomy and control over their work (Gullick et al., 2004; Tiedeman & Lookinland, 2004). For the patient, the quality of care is high, compared to team and functional models (Halloran, 1983; Steckel, Barnfather, & Owners, 1980) due to the consistency of care provided by the RN (Wagner & Bear, 2009). The major disadvantage is the cost of sustaining a RN workforce as this model was found to be more expensive than team nursing (Glandon, Colbert & Tomasma, 1989) which traditionally has a mix of professional and ancillary staff (Rafferty, 1992).

During World War II and in the 1950's and early 1960's when there were increased shortages of RN resulting in the employment of more support staff (Marquis & Houston, 1992), a functional care delivery model and subsequently team nursing were the primary models of nursing care (Rafferty, 1992). Each of these models have similar components as they rely on a RN who undertakes complex care and assigns routine tasks to either nurses or ancillary personnel, depending on their skill level (Coakley & Scoble, 2003; Rafferty, 1992). The main difference is that in the functional model the charge nurse delegates tasks to individual staff for patient care, while in team nursing the team leader guides and supervises a small group of nurses who are collectively responsible for the provision of care requirements either through task allocation or elements of total patient care (Coakley & Scoble, 2003; Rafferty, 1992). Team nursing was introduced to address the problems associated with functional

care such as fragmented care and poor communication between nurses and patients (Rafferty, 1992) resulting in poor patient satisfaction (Ringl, 1994).

However, concerns remained regarding depersonalised and fragmented care (Ringl, 1994; Gardner, 1991) and with the emergence of Orlando's nursing process, which required care to be planned on the basis of professional assessment (Orlando, 1972) along with the increasing scientific approach to nursing (Bowers, 1989; Rafferty, 1992) in the 1970's, primary nursing replaced team nursing. The focus of primary nursing is to provide patient centred care whereby each patient is assigned a primary nurse who has 24 hour responsibility and the authority to assess, plan, organise, implement, coordinate and evaluate care in collaboration with patients and their families (Ciske, 1974; Rafferty, 1992; Tiedeman & Lookinland, 2004). The primary nurse is supported by an associate nurse who follows the care plans prepared by the primary nurse when delivering care (Hegedus, 1980; Rafferty, 1992; Shukla, 1983). Shukla (1983) found primary nursing to be more expensive than team nursing.

There is inconclusive evidence regarding the impact of primary nursing compared with functional, team, or total patient care, on quality of care as some studies found it had increased (Gardner 1991; Halloran, 1983; O'Connor, 2004; Steckel et al., 1980) while others found no difference between primary and team nursing (Chavigny & Lewis 1984; Shulka, 1983; Wilson & Dawson, 1989). However, more recently primary nursing has been widely used in Magnet-designated hospitals and linked to positive patient outcomes (Aiken et al., 1999; Mondino, 2005) and staff satisfaction (Allen & Vitale-Nolen, 2005; Garon, Urden, & Stacy, 2009). When compared with team nursing no difference in patient satisfaction was found (Wu, Courtney, & Berger, 2000).

From the 1980's with the transfer of nursing education to the tertiary education sector, which enhanced the professional standing of nursing, the total patient care model re-emerged as the patient allocation model of care (Walker et al., 2007). This model was advocated as the preferred model for a professional workforce and was adopted throughout public and private hospitals in Australia (Fairbrother et al., 2010). This model relies on an experienced registered nurse workforce whereby nurses have

the appropriate expertise to provide all assigned patient care requirements for a group of patients for the period of each shift (Wu et al., 2000).

The reality of today's nursing workforce characterised by large proportions of graduate nurses, casual, agency and part time staff (Duffield, Gardner, Chang, & Catling-Paull, 2009) has resulted in fewer experienced RN to enable the patient allocation model to consistently be applied. This effect was shown in an Australian study undertaken in 80 randomly selected medical-surgical wards in 19 hospitals in NSW, in 2004/2005. The authors found the variability of staffing levels influenced the nurse in charge of the shift's choice of using either patient allocation or team nursing on a shift by shift basis (Duffield et al., 2010).

Due to both the dearth of empirical data, and lack of agreement on model descriptions and their strengths and weaknesses, there is limited research which evaluates these models of care to assist with conclusively demonstrating the impact of one model of care as compared to another in terms of staff and patient satisfaction, quality and cost of care (Tiedeman & Lookinland, 2004). It is anticipated that the results of this study will provide detailed information on the development of team based models using registered and unregistered staff; its operational application and comprehensive evaluation of staff and patient satisfaction, impact on the working environment and quality of nursing care.

### **2.3 Studies of Trialling Team Nursing**

Faced with the continued shortage of registered nurses and consequent introduction of work force initiatives such as nursing assistants, there has been renewed interest in trialling team nursing with mixed success in hospitals in NSW (Fairbrother et al., 2010; Fowler et al., 2006; Hayman et al., 2008; Tran et al., 2010; Walker et al., 2007), in Victoria (Brack & Sandford, 2010; O'Connell, et al., 2006); and in North America (Dobson, Adamson, & Drexter, 2007) in both the public and private sector.

In 2001, in response to nursing shortages and a desire to explore potential strategies to support safe delivery of patient care, St Vincent's, a public teaching hospital in NSW, trialled a collaborative "shared care model" (p. 42), similar to team

nursing, on two acute medical wards, using a clinical practice improvement method. The aim of the study was to explore strategies to support the safe delivery of patient care and professional development of nurses. The clinical practice improvement method involved four phases of planning, development, implementation and evaluation. During the planning and development phase, the period of which is not stated, a project officer worked with participating staff to identify key elements of the collaborative shared care model. These were teams of staff, led by a team leader, allocated a group of patients with a less skilled staff member supported by a dedicated “care partner” (p. 42). Ward coordination was undertaken by the nursing unit manager and continuity of patient care was maintained by receiving handover of the patient group and allocating responsibility for care delivery within the group. In the implementation phase the project officer facilitated regular debriefing sessions to assist staff address practice issues and through non-participatory observation determined staff progress in implementing their nursing model. The evaluation phase involved comparing staff satisfaction, and indicators of quality care, such as patient, hygiene, patient injury rate, nosocomial infection rates and maintenance of skin integrity, through non-participatory observation, staff satisfaction surveys, staff focus groups, nursing documentation and reported incidents from the same period the previous year (Fowler et al., 2006).

The authors did not report the sample size nor type of data analysis undertaken but suggested the collaborative shared care model had both a positive and negative impact on clinical outcomes. They reported for each ward respectively a 50-70% improvement in nursing documentation, no change in the number of pressure area cases but a 35-71% increase in reported incidents/accidents and 100-400% increase in reported infection rates. They also identified themes of reduced availability of experienced permanent and temporary staff, ineffective communication, and lack of time for experienced staff to educate team members, all of which impacted on staff ability to progress implementation of the collaborative shared care model (Fowler et al., 2006). However, given a number of limitations associated with this study, such as a lack of description of the skill mix, and the failure to report sample size and type of analysis used to assess evaluation measured, it is not possible to draw any conclusions regarding the specific impact of the collaborative model on staff and patient outcomes.

The clinical practice improvement method has some broad areas of similarities to emancipatory practice development (ePD) in that they both are concerned with health service improvement and both may use similar designs such as incorporating plan, do, study, act (PDSA) cycles. However, their approaches to achieve improvements in health care are underpinned by their origins of development and philosophical base which highlights their inherent differences. Clinical practice improvement draws on the managerial principles and methods of quality improvement theory that were originally developed and successfully applied in industrial settings (Shewhart, 1931; Deming, 1982). Integral to this method is assessment of measures of structure, process and outcomes that focuses on the system rather than the individual when considering improvement opportunities through the use of the PDSA cycle (Varkey, Reller & Resar, 2007). In contrast ePD, reflecting its critical social science philosophical base, focuses on the social system as well as on the individual's and/ or groups own practice (Manley & McCormack, 2003). Therefore, both the culture and context of care is important and emphasis is placed on promoting the empowerment of staff to transform the culture to enable improvements in practice (Garbett & McCormack, 2002). Transformational culture is evident when staff demonstrate enlightenment through recognising the need for practice change, are empowered to bring about the practice change to increase the effectiveness of patient centred care and the action taken results in a transformation within the context of practice (Wilson & McCormack, 2006). The benefit of creating a transformational culture, is that quality improvement is not limited to specific activities such as addressing a particular clinical practice, but positive change becomes a way of life, where there is a shared vision and investment in and valuing of staff (Manley, 2000).

Faced with difficulties in filling RN vacancies resulting in increased workloads for nurses and low morale, another study undertaken at a major private hospital in Sydney evaluated the change from a patient allocation model to team nursing using work sampling (Walker et al., 2007). The study consisted of two parts. Firstly in 2000, employing a work sampling study, data were gathered through four nursing work activities - direct patient care, such as hygiene and nursing procedures: indirect care, such as preparation of medications and planning care; unit related activities such as administrative meetings, environmental cleaning and restocking supplies: and nurses personal activities such as meal and toilet breaks, personal phone calls and socialising

with co-workers across the acute care wards of the hospital. Results of the first part of this study reported by Duffield, Forbes, and Franks (2001) showed that much of the RNs' time was spent in activities that did not require RN capability and this served as a rationale for changing to a different model of care.

The second part of the study, undertaken in 2002 in two wards, involved introducing a team oriented "partners-in-care" (p. 99) model to replace an RN patient allocation model. This involved reducing the number of RNs and introducing ENs and assistants in nursing (AIN), working on a ratio of two RNs and one AIN or one RN, EN and AIN to care for 10 to 13 patients depending on patients' acuity and staff level. In addition, two other changes were made during the second part of the study. The level of patient acuity was reduced by changing the case mix as patients requiring complex joint replacements were admitted to a different unit. The number of beds was reduced by six resulting in fewer nurses being required to provide patient care. The authors indicated staff had been "heavily involved in the change process" (p. 98) but did not describe the process used to indicate the extent of staff involvement or their preparation for implementation of the partners-in-care model.

Six months post implementation the authors reported the findings for one of the wards, a medical-surgical ward (Walker et al., 2007). Comparisons were made with the 2000 work sampling results and showed mixed results for the four work categories. Due to the reallocation of environmental cleaning to cleaning staff there was a reduction in unit related activities but an increase in personal activities time, with the largest increase by the AIN group, indicating the need for more direction and supervision by the RNs and ENs. There was a statistically significant increase in direct care activities of hygiene, medication administration and patient mobilising by RNs ( $p < 0.001$ ), but only a small overall increase in direct care. Similarly while there were increases for each staff classification in the provision of indirect care, there was an overall decrease in indirect care activities. The authors concluded the partners-in-care model enabled a better use of skill mix and had the potential to become the preferred model to address the reduction in numbers of experienced RNs and increased demand for high quality acute inpatient care (Walker et al., 2007). These positive findings support the use of team nursing within a medical-surgical ward in terms of staff mix

but have not investigated its impact on the team member perspectives nor patient outcomes.

In response to nursing staff shortage and associated workload stress on existing staff the Director of Nursing (DON) and the Nursing Director of the Surgical Division of a large metropolitan hospital in Sydney, Australia decided to trial team nursing in a 30 bed surgical ward in 2002 and introduce a new clinical activities coordinator (CAC) role (Hayman et al., 2008). A descriptive case study design was used.

The authors reported on the preparation phase, which lasted three months. This phase involved consulting with the ward staff and managers, collecting data to describe the case study and ward environment, and identifying RN and EN duties through observing their activities. The next phase - planning - lasted two months and involved gaining information from staff regarding a new role of CAC, meetings regarding the design of the team model and creating a team model roster which resulted in a reduction of 3.35 full time equivalents (FTE) RNs and an increase of 4.54 FTE in ENs. Hayman et al. (2008) did not indicate the number of participants but reported there were 17.95 FTE RNs and 7.07 FTE ENs working on the ward. The staff were not assisted with any type of preparation for using a team model to deliver care nor discussions held regarding the differences with the existing patient allocation model. The implementation phase lasted six months and involved meetings regarding the team model and the new CAC role.

Evaluations were made from comparisons of eight formal observational visits to document the RN and EN activities and interactions associated with clinical and social communication throughout the study. Comparisons were also made between the RN and EN role descriptions compiled one month prior to implementing the team model and their views on how their role had changed six months post implementation. Hayman et al. (2008) found no changes in the roles of RN and EN, indicating the team model was not being used and staff were dissatisfied with the team model, the CAC role and the reduction in the number of RN FTE.

A major flaw in the study design was insufficient education and staff preparation in adjusting to using a team model. The top down approach by

management in making the assumption the role of the CAC was required and changing the skill mix as part of the study trial prior to establishing benefits associated with the team model, may have influenced staff involvement and support for the new role and team model. These study design factors were acknowledged by the authors as causing staff negativity and resistance to trialling team nursing and the CAC role (Hayman et.al., 2008).

Consistent with similar experiences of other Australian hospitals, the Prince of Wales, a metropolitan teaching hospital in Sydney concerned about nursing shortages and retention issues resulting in a reliance on casual workforce, and an increase in error rates and quality of care deficits, decided to trial a team nursing model during 2002-2004 (Fairbrother et al., 2010). The study used action research principles and involved a total of 12 acute medical and surgical wards. Six wards acted as controls and continued using the patient allocation model and the remaining six, of which three were medical and three surgical wards, trialled team nursing. The comparison measures consisted of nurses' job satisfaction and retention and were undertaken prior to the study commencing and 12 months post implementation of team nursing.

The pilot study, undertaken with the consent of staff in two medical wards, resulted in abandoning the traditional task allocation within teams in favour of sharing responsibility incorporating patient allocation within a team structure. This approach was maintained in the main study. Team formation varied. In the medical wards teams consisted of three team members: an RN, EN and AIN. A shift coordinator responsible for overall supervision and education was added in the morning but not the afternoon shift. In the surgical wards team formation differed yet again to either include a team leader working with an RN and EN or a CNS working with 2RNs or 1 RN and an EN. All teams were created on the basis of experience, permanence of employment and seniority (Fairbrother et al., 2010).

Fairbrother et al. (2010) found a statistically significant increase in work environment related job satisfaction ( $p = 0.005$ ) for the nurses participating in team nursing with new RN graduates reporting the largest improvement in job satisfaction, though not statistically significant. The ENs were reported as being the most satisfied at pre and post follow up (statistical value not provided) though small net negative

changes were found at follow up, compared to positive changes for the RNs, new graduate RNs and CNSs. While not significant, there was an improvement in job vacancy rate (reduced by 19%) among the wards trialling team nursing. These findings led the authors to support a model that focuses on creating teams to work together as suitable for the provision of acute care by nurses of varying levels (Fairbrother et al., 2010).

Fairbrother et al. (2010) study was the first to investigate the impact patient allocation and team nursing on multiple wards had on nurses' job satisfaction. However, limitations include the involvement of only two types of clinical areas and no assessment of the impact on patient outcomes or error rates.

Motivated by a desire to develop a delivery model of nursing care suitable to increased use of ENs and ward assistants, a private hospital in Victoria trialled team nursing on two general medical wards in 2005 (O'Connell et al., 2006). A descriptive evaluative design was used to determine the impact team nursing had on continuity and communication of care, role delineation, and organisational and contextual factors affecting the delivery of care. Across the two wards 38 staff participated, consisting of a mixture of RNs, ENs, ward assistants and unit receptionists. The participants were assisted by a project officer to develop their team nursing model over a non defined period of time. The team consisted of a RN, EN, ward assistant and unit receptionist, but other than indicating the RN was the team leader the operational aspects of the model were not described nor was the period over which the trial was undertaken. O'Connell et al. (2006) reported that due to the lack of structured implementation on one of the wards the team model was used only in the morning shift. Three sources of data were used to evaluate the team nursing model and these were a staff continuity of care questionnaire, focus groups and individual interviews with participants. The authors did not report at what time during the trial these were undertaken.

O'Connell et al. (2006) found that the trial enabled the identification of factors that both assisted and hindered the implementation of team nursing such as the need for all team members' roles to be defined, good communication between the team and the need for the workload to be fairly divided among the team members. Benefits associated with the team model included building good working relationships among

staff and sharing a heavy workload. However, these benefits were influenced by the level, experience and personality type of the nurses working together; their understanding and appreciation of all team members' knowledge and skills; and familiarity with the ward and patient care requirements. Despite the limitations associated with an inconsistent implementation strategy and the inclusion of only medical wards, this study assists in describing factors for others to consider when developing team based models of care.

In 2005 Banner Estrella Medical Centre in Arizona opened a new medical-surgical hospital of 72 private rooms and selected team nursing as the method of delivering care because of the shortage of RNs (Dobson et al., 2007). A team of one RN, two licensed practical nurses (LPN) certified to administer both oral and intravenous medications and one certified nursing assistant (CNA) were collectively responsible for 12 patients. The RN was responsible for overseeing patient management and delegation of appropriate tasks such as administration of medications and, when working under the RN supervision, complex technical care to the LPNs, and patients' personal needs to the CNA. All new staff involved in providing a clinical service are orientated to the team nursing model to assist in the understanding of care provision. For all new staff orientation focused on description of each role's scope of practice, role performance and departments' expectations (Dobson et al., 2007).

A short time after the implementation of the team nursing model the authors reported the RNs were struggling with delegation due to the lack of communication skills. To address this "dream team meetings" (p. 58) were established to enable staff to work together through role playing communication and delegation activities. Evaluation at six months to determine staff satisfaction resulted in reducing the team to one RN, one LPN and one CNA for eight patients in response to the RN concerns of difficulties with managing 12 patients. Within two years of using the team nursing model the authors reported 37% lower rate of medication errors/1000 patient days, compared to other Banner sites, 49% less falls/1000 patient days compared to the national average, 31% less emergency codes and a 100% compliance with daily skin assessments. In addition the patient satisfaction was higher compared to other Banner sites. The cost of the team nursing model was reported as 1.5% greater with the RN

turnover the same but the average caregiver hours were 12.5% higher than comparison Banner sites (Dobson et al., 2007).

The value of this study is threefold. Firstly it provides a hospital level perspective, all be it only 72 beds with a medical and surgical service. Secondly it reports patient outcomes and thirdly financial implications associated with a nursing team model. A shortcoming is the limited staff perspective on using a team approach.

An ambitious pilot of team nursing in an intensive care unit (ICU) in a major referral teaching hospital in Victoria was undertaken in 2006 in response to a high vacancy rate and a desire to address this by changing the skill mix of its workforce and developing an advanced clinical role for the experienced ICU nurse (Brack & Sandford, 2010). In Australia the standard model of nursing delivery in ICUs is one RN to one patient. The pilot model involved recruiting four ENs to work in a partnership with RNs. The model involved one RN and two ENs being responsible for the nursing care of two patients. The role of the RN was to coordinate and plan the care of the two patients and supervise the ENs each assigned to one patient deliver the care. Ten RNs volunteered to participate and rotated into the model every two-four weeks (Brack & Sandford, 2010).

The pilot involved two stages: preparation and implementation. The preparation stage lasted six months and involved employment of a project officer to develop and implement an education framework to pilot the integration of ENs into the ICU. In addition, several key staff groups, including the DON, Nursing Co-Directors, ICU managers and staff, met to explore a new advanced role for the experienced ICU nurse, involving planning the care of patients and supervising the delivery of clinical care, and to determine evaluation measures.

Staff evaluation measures focused on staff perceptions of the pilot and knowledge of EN scope of practice. These were obtained via a staff perception survey, through feedback workshops undertaken by an independent organisation, qualitative data captured from RN's and EN's reflective journals and verbal feedback at unit meetings. Patient evaluations measures were assessment of patient care against nominated standards using an audit tool specifically developed for the study to

evaluate standards of care, and monitoring adverse events using the hospital's quality monitoring tool. Data were collected at three points: the year prior to the pilot as a baseline measure, prior to the pilot commencing and six months after commencement (Brack & Sandford, 2010).

Shortly after implementation of the new model, two of the ENs resigned as they were seeking more autonomy and disliked being confined to a single patient cubicle. Then at three months the remaining ENs continued to have difficulties overcoming the transition into an ICU environment and this increased the workload for the ICU nurses. After nine months as the workload became unsustainable the pilot was suspended and the ENs were re-deployed into hospital wards. Comprehensive analysis of the evaluation measures were not reported but the authors provided information reflecting the highlights and challenges of the pilot. The highlights included maintenance of standards of nursing care, no increase in adverse events and professional development of the participating staff. Challenges included managing the ENs' turnover; rostering difficulties when one of the ENs were absent, which meant the model could not be used; unanticipated extensive support, guidance and close supervision to assist ENs apply their scope of practice and ensure safe practice; good communication as issues arose when information was not conveyed to the RN and increase in cost having three staff care for two patients (Brack & Sandford, 2010).

The most recent published study trialling a version of team nursing called shared care nursing (SCN) model, comprised of team work, leadership and professional development, compared nursing staff satisfaction and stress outcomes between the SCN model and patient allocation (Tran et al., 2010). This quasi-experimental study was undertaken in NSW in Australia, in four medical and four surgical wards in a 400 bed metropolitan teaching hospital. Four wards were assigned to deliver the SCN and the other four wards continued to deliver the patient allocation model. The authors did not differentiate the type of ward using the different models of care nor describe the organisation of the delivery of patient care. In addition, besides reporting the SCN was developed in consultation with clinicians, managers and administrators, no other information was provided regarding the process employed to develop the SCN model (Tran et al., 2010).

The sample consisted of 125 RNs or clinical nurse specialists; 74 worked in the wards using the SCN and 51 in wards using the patient allocation model. Validated questionnaires were sent to all participants to measure job satisfaction, stress at work, job tension, and role conflict and ambiguity prior to implementing the SCN and six months post implementation, with a response rate of 83%. In addition, six months post implementation, a further survey to examine the issues of leadership among RN was sent to 55 RNs working on the SCN wards, with a response rate of 91% (Tran et al., 2010).

Tran et al. (2010) found both groups were satisfied with their job, had role clarity and there was no statistically significant difference between the two models of care for all of the outcome measures. There was however, a trend within the SCN group of a statistically significant decrease ( $p = 0.044$ ) in the satisfaction with co-workers domain. The authors reported a range of satisfaction and dissatisfaction levels from the leadership survey, such as, improvements in communication with nurses and doctors and concerns with an increase in workload and responsibility (Tran et al., 2010).

A major limitation of this study is the exclusion of the AIN and ENs perspectives from the study who were reported as representing approximately 20% of the workforce, though their ward location was not defined by Tran et al. (2010). Other limitations include the small sample size and short follow up period post intervention of six months.

The main reasons for studies investigating team nursing as a suitable model for delivering nursing care were a shortage of nurses resulting in the introduction of AINs and subsequent change in skill mix. The fact that seven of eight published team based nursing studies, were undertaken in two states of Australia, indicate their strategic approach to managing the nursing shortage. Their findings, add relevance to the context of this study which was undertaken in Western Australia within a similar health service framework and with the same strategic intent.

Of the eight studies, two included an assessment of the impact on staff satisfaction and patient outcomes (Dobson et al., 2007; Fowler et al., 2006), one

investigated the impact on the provision of different types of care activities (Walker et al., 2007) and two focused on the impact on staff - job satisfaction and retention (Fairbrother et al., 2010) and job satisfaction and stress (Tran et al., 2010). The remaining three studies involved two introducing new roles for RNs working within a team of a CAC (Hayman et al., 2008) and advanced clinical role for the experienced ICU nurse (Brack & Sandford, 2010) and one on staff continuity and communication of nursing care (O'Connell et al., 2006). Despite the limited and mixed findings, these studies have provided information relating to the impact team nursing has on staff job satisfaction, patient care activities and some patient outcomes. Integral to this study, is an understanding of the influence that all nursing delivery models of care have on both staff providing the care and patients receiving the care. This knowledge enables the inclusion of features demonstrated to be beneficial to nurses and patients in this study's nursing care model.

## **2.4 Comparison of Team Based Studies Methodology**

A variety of methodologies were used to undertake the team based studies. Authors of four of the studies used descriptive designs (Brack, & Sandford, 2010; Dobson, et al., 2007; Hayman et al., 2008; O'Connell et al., 2006), one a before and after design (Tran et al., 2010), another work sampling (Walker et al., 2007), a clinical practice improvement model (Fowler et al., 2006) and one based on action research principles (Fairbrother et al., 2010).

Fowler et al. (2006) and Fairbrother et al. (2010) have similar components to this study's methodology as they both used action cycles. However, Fowler et al. (2006) did not include a reflective component and Fairbrother et al.'s (2010) reflective component was limited to redesigning work practices as part of the planning and development of the team based model prior to implementation. Four studies included components to assist staff address concerns while trialling team based nursing. These included regular debriefing sessions (Fowler et al., 2006), ward based meetings soon after implementation (Dobson et al., 2007) and at three months (Hayman et al., 2008), informal meetings during implementation (Brack & Sandford, 2010) and regular group work (Fairbrother et al., 2010). All of these were undertaken by internal staff fulfilling either a research or project officer role.

It is unclear from the literature if it is better to appoint facilitators from within the organisation (Larsen et al., 2005) or externally, working either independently (Harvey et al., 2002), or supporting internal facilitators (Binnie & Titchen, 1999; McCormack & Wright, 2000). However, there is consensus on the need for skilled facilitation when supporting practice development initiatives (Binnie & Titchen, 1999; McCormack & Wright, 2000). During the study, as nurses developed clinical scenarios involving role play the researcher supported the development of nurses' facilitation skills.

Unlike this SCM study, none of the other team based studies had a sole researcher who actively sought to form a partnership with nursing staff through all phases of the research process using either of the intensity approaches or inclusion of solution focused sessions.

## **2.5 Impact of Nursing Delivery Models on Staff and Patient Outcomes**

Nine studies were found that investigated the impact of nursing delivery models on staff and patient outcomes. Two studies examined the impact primary nursing versus team or modular nursing - a modification of team and primary nursing whereby nurses are permanently assigned and collectively responsible for a group (module) of patients had on work characteristics, job satisfaction, job stress and nurses' performance (Makinen, Kivimaki, Elovainio, Virtanen, & Bond, 2003; Makinen, Kivimaki, Elovainio, & Virtanen, 2003). Another three compared the impact of these models on the quality of patient care (Duxbury 1994; McGillis Hall & Doran, 2004; Shukla, 1981) with McGillis Hall and Doran incorporating total patient care in their evaluation. All five of these studies were undertaken in acute general hospitals. Two further studies were found that investigated the impact of primary nursing with non defined controlled delivery model on nurses' work environment in psychiatric hospitals (Melchoir et al., 1999) and in psycho geriatric nursing homes (Berkhout, Boumans, Van Breukelen, Abu-Saad, & Nijhuis's (2004). The only other comparison study found examined the impact of patient allocation and team nursing model on patient satisfaction in orthopaedic wards (Wu et al., 2000). The final study included

investigated the impact of supportive management practices on nurses' performance when using primary nursing in a general hospital (Drach-Zahavy, 2004).

Studies investigating the impact primary versus team or modular nursing had on nurses' job satisfaction (organisation of care and job satisfaction study) (Makinen, Bond et al., 2003), and stressful work characteristics (organisation of care and stressful work characteristics study) (Makinen, et al., 2003) were undertaken in eight hospitals across 26 and 27 medical and surgical wards respectively in Finland. These studies were carried out by the same authors with the exception of Bond who was only part of the organisation of care and job satisfaction study (Makinen, Bond et al., 2003).

Both studies used the same design whereby questionnaires were sent to ward sisters to determine the type of nursing delivery model used and a job satisfaction or occupational stressor questionnaire to registered nurses. The same number of registered nurses 568 (84%) responded to each survey, while 26 ward sisters provided information on the type of nursing models associated with organisation of care and job satisfaction study (Makinen, Bond et al., 2003) and 27 ward sisters provided the different nursing models used for the occupational stressors study (Makinen et al., 2003). The organisation of care and job satisfaction study involved nurses from 12 wards where primary nursing had been used for two years and 14 wards where team nursing delivery models were in place for the same period (Makinen, Bond et al., 2003). The organisation of care and stressful work characteristics study involved primary, modular, team and functional nursing models (Makinen et al., 2003). The authors did not quantify the model used on each ward to enable an understanding of the number of wards using the different types of nursing models, but indicated they had been in place for three years (Makinen et al., 2003).

In the organisation of care and job satisfaction study, job satisfaction was measured using three scales of supervisory satisfaction, co-worker satisfaction and personal growth satisfaction (Makinen, Bond, et al., 2003). The authors reported the strongest statistically significant associations between supervisory and personal growth satisfaction with the opportunity to write nursing notes ( $p < 0.001$ ). Supervisor satisfaction was also statistically significantly associated with patient focused work allocation ( $p < 0.01$ ), high levels of accountability for patient care ( $p < 0.05$ ) and

organisation of the duty roster ( $p < 0.05$ ). In addition, they reported, in general, job satisfaction was higher when the organisation of nursing care was similar to primary nursing (Makinen, Bond et al., 2003). Consequently, the study demonstrated elements of the organisation of nursing care were associated with nurses' satisfaction but not a particular delivery model.

In the organisation of nursing care and impact on nurses' stress study, a three scale survey was used to measure stress associated with their perceptions of work overload, high level of responsibility and problems in interpersonal relations (Makinen et al., 2003). The authors reported that none of the delivery models were associated with nurses' stress. The only statistically significant finding was the negative correlation between the lack of opportunity to write patients' nursing notes and poor interpersonal relations ( $p = 0.047$ ). While not statistically significant, other findings were that stress from high levels of responsibility was associated with work overload and interpersonal relations. In addition, the surgical wards used a model similar to primary nursing and wards with higher ratios of registered nurses to practical nurses more commonly used primary nursing (Makinen et al., 2003). No comparisons were made between the different models of care and stressful work characteristics.

A study that investigated the impact of established primary nursing compared with team nursing on the quality of patient care was undertaken in a 50 bed medical unit (team nursing) and a 48 bed surgical unit (primary nursing) at Riverside hospital in Newport News, Virginia (Shukla, 1981). Registered nurses on both units underwent six months of education sessions on nursing care process, communication, care planning, and assessment and evaluation of patients' physical, social and psychological needs. They were subsequently assessed to ensure equal competency levels, prior to assessments of the quality of patient care being made. The quality of patient care was assessed by expert observers using the Qualpac scale for 30 randomly selected patients on each ward. Shukla found no significant differences between primary and team nursing for overall quality of care, but reported a significant finding ( $p = 0.06$ ) for the communication subscale in favour of primary nursing.

A small quasi-experimental study, undertaken in three hospitals within the Humberside region of England, investigated the effect primary nursing compared with

team nursing had on nurses' attitude to sleep problems and the administration of prescribed night sedation to patients in elderly medical or medical wards. Ten female qualified nurses aged 20-55 years working on wards that practiced primary nursing and ten female qualified nurses aged 20-59 years working on wards using team nursing participated in the study (Duxbury, 1994).

Nurses were interviewed to determine their philosophy about their ward and the incidence and administration of prn night sedation. Data were verified by checking the patients' medication charts. Nurses also completed a questionnaire to determine their attitudes to night sedation. Duxbury (1994) reported two statistically significant findings. Firstly, that despite the amount of prescribed prn sedation on team nursing wards being approximately half that prescribed on primary nursing wards, nurses on the team nursing wards administered almost three times as much prn sedation as the nurses on primary wards ( $p = 0.0005$ ). Secondly, nurses using team nursing placed a greater emphasis on the usefulness of sedation than primary nurses ( $p = 0.001$ ). Duxbury concluded that these findings reflected the medical approach undertaken by nurses using team nursing compared with a more patient centred and less disease orientated approach by nurses using primary nursing.

Another study investigated the relationship between nurse staffing and care delivery models and the quality of patient care in 77 acute medical, surgical, and obstetrical units in 19 teaching hospitals involving 1,116 RN in Ontario, Canada (McGillis Hall & Doran, 2004). The hospitals used total patient care, primary and team nursing delivery models. Questionnaires completed by unit managers were used to describe nurse staffing and care delivery models, and perceptions of quality of care were derived from RN surveys. Based on the results of this study the authors (McGillis-Hall & Doran, 2004) concluded that the type of delivery model was perceived by the study participants to contribute to the quality of patient care. Total patient care, used in the majority of units, did not contribute to individualised approaches or well coordinated patient care, whereas primary and team nursing did. Units that had employed only RNs had a statistically significant positive relationship on their perception of the quality of care provided ( $p < .05$ ) (McGillis-Hall & Doran, 2004).

Melchoir et al.'s (1999) quasi experimental study involved introducing primary nursing in 11 wards across five psychiatric hospitals in Holland and comparing the results of the nurses' work environment questionnaires with those from 21 control wards. The type of nursing delivery model used in the control wards was not defined. Nurse managers or quality care coordinators responsible for providing the primary nursing undertook a training programme that emphasised communication skills and were provided with a book that fully explained the model. During the implementation these managers were supported by a group that met monthly.

Questionnaires related to nurses' tasks, job characteristics, managers' leadership style, nursing model and the nursing process were administered prior to the introduction of primary nursing and one year later. One hundred and seventy six nurses completed the questionnaires; 64 used primary nursing and the remainder worked in the control wards. Melchior et al. (1999) found statistically significant improvements in autonomy ( $p = 0.01$ ). However, despite increased autonomy, the work was less complex and less time was spent providing personal care. Melchior et al. also reported several sources of bias occurred. Contamination of the control wards occurred as student nurses moved between wards using primary nursing and the control wards resulting in some parts of primary nursing being introduced in the control wards. Also outcome data were incomplete due to a high turnover rate among both control and intervention wards. Consequently, the reported effects were not necessarily due to primary nursing.

Berkhout, Boumans, Van Breukelen, Abu-Saad, and Nijhuis's (2004) quasi experimental study investigated the impact of primary nursing used in three somatic and three psycho geriatric wards, on nurses' work characteristics, psychological and behavioural outcomes compared with the same number and type of control wards that did not use primary nursing. The delivery model used in the control wards was not defined. Each nursing home had two control and two primary nursing wards. Questionnaires concerning resident assignment, use of the nursing process, redesign of tasks and communication among nurses were administered prior to the study, then six and 16 months after the study commenced. Staff interviews and qualitative observations were also made during the study. A total of 210 nurses participated with 101 using primary nursing.

Berkhout et al. (2004) found, for the nurses working in the primary nursing wards, statistically significant improvements in contextual autonomy such as determining the amount and type of work to be done and leave times ( $p \leq 0.05$ ), social support ( $p \leq 0.05$ ) and job demands ( $p \leq 0.05$ ), but a statistically significant negative effect ( $p \leq 0.05$ ) in communication among nurses. Other findings were statistically significant increases in resident assignment ( $p \leq 0.01$ ) and use of the nursing process ( $p \leq 0.01$ ). However, the authors reported they found evidence of nurses delegated to undertake a partly task orientated approach to patient care (Berkhout et al., 2004) which implies primary nursing was not consistently used. Consequently, this bias limits drawing conclusions that the effects on the nurses' working environment were directly related to using primary nursing.

A study undertaken in Brisbane, Australia in two orthopaedic wards, one using patient allocation the other team nursing, compared the effect of the different models of care on patient satisfaction (Wu et al., 2000). A self-reported questionnaire was posted to 137 randomly selected patients who had been discharged in the last four weeks during July to August 1998, resulting in 38 patients from the patient allocation ward and 36 from the team nursing ward participating. Wu et al. (2000) found no statistically significant difference between patient allocation and team nursing and patient satisfaction.

A study investigating the impact the role of supportive management practices and perceived costs of seeking support as part of the primary nursing model had on the primary nurses' performance was undertaken in 2001, in six hospitals in Israel. Ten units in each hospital were randomly selected resulting in a mixture of 56 medical, surgical, internal (not defined), and critical care nursing units participating (Drach-Zahavy, 2004). The cross-sectional survey design involved posting a survey to staff nurses to determine the degree of primary nursing on their unit, the support practices of their direct supervisor and their perceptions of the cost of seeking support from their supervisor and a different survey posted to the supervisors to assess nurses' performance. The questionnaire was returned from 368 registered nurses with a response rate of 71%. The authors did not indicate the supervisors' sample size.

Drach-Zahavy (2004) found that primary nursing alone was not associated with nurses' performance, but when combined with a high degree of use and high level of supervisor support nurses' performance level was significantly higher statistically ( $p < 0.01$ ). However, nurses' performance was significantly lower ( $p < 0.01$ ) when nurses' perceived a high cost of indebtedness, loss of freedom inherent in accepting aid, and threat to self-esteem and embarrassment associated with seeking supervisors' support. A limitation, acknowledged by Drach-Zahavy, was the use of a cross sectional study design which prevented direct causal findings between primary nursing and the level of nurses' performance and processes associated with provision of supervisors' support, costs of seeking support and nurses' performance.

## **2.6 Impact of Nurses' Work Environment on Staff Satisfaction and Patient Outcomes**

Having reviewed the literature associated with staff and patient outcomes and the different nursing delivery models, an important feature of this study was understanding the work environment in which nurses' use the model of nursing care and its influence on patient care. The bulk of the literature relating to nurses work environment and its impact on both nurses' satisfaction and patient outcomes are from studies comparing Magnet with non-Magnet hospitals, and a range of studies investigating relationships between various combinations of nurse staffing and workload.

Following the inaugural research that identified 41 hospitals that had supportive environments and acted as *magnets* to attract and retain nurses (McClure, Poulin, Sovie, & Wandelt, 1983) and subsequent confirmation that these hospitals were associated with higher staff satisfaction and retention (Kramer & Hafner, 1989) and lower mortality rates (Aiken et al., 1994), the American Nurse Credentialing Centre's Magnet Recognition Program was established by the American Nurses Association. Over the years the magnet culture, with its focus on improving nurses' work environment to enhance quality patient care, has been adopted in 400 (7%) hospitals in USA and five international hospitals in England, Australia, New Zealand, Singapore and Lebanon (American Nurse Credentialing Centre, 2011). Primary nursing is the model of nursing delivery most commonly reported as being used in

Magnet hospitals and has been linked to patient outcomes in patients who have AIDS (Aiken et al., 1999) and in those cared for in the intensive care unit (Mondino, 2005).

Kramer, Schmalenberg, and Maguire (2010) have recently identified nine structures and leadership practices essential for a magnetic quality and healthy work environment, based on a meta analyses of relevant publications. These are (1) quality leadership at all levels in the organisation; (2) availability of and support for education; (3) career, performance and competence development; (4) administrative sanction for autonomous and collaborative practice, (5) evidence based practice education and operational supports; (6) culture, practice and opportunity to learn interdisciplinary collaboration; (7) empowered decision making structures for control of the context of nursing practice; (8) generation and nurturance of a patient-centered culture; and (9) staffing structures that take into account RN competence, patient acuity and teamwork, including development and support of interdisciplinary teamwork.

The systematic review met all of the quality appraisal criteria developed by the Critical Appraisal Skills Programme (CASP) (Evidence Based Health Care, 2005). The strength of these structures and leadership practices lies in the rich source of relevant data selected for the meta analysis. The authors reviewed publications from organisations advocating standards for a healthy work environment and compared these studies findings with those aggregated from interviews with nurses, managers, and physician who worked in organisations confirmed as having health work environments from Essentials of Magnetism structure–identification studies. This approach meant the nine structures and leadership practices represented a synthesis of organisational and staff perspectives. Consequently these can be seen as providing a framework upon which organisations can use to ensure appropriate structures and processes are in place that support nurses in the delivery of quality care. The link between a healthy work environment and patient and nurse outcomes has been established in a number of studies that include these features.

A number of studies have reported benefits associated with these features, with the majority focussing on the work environment and the structural elements present to support nursing practice. Magnet attributes identified from studies that attract and retain nurses include high autonomy, decentralised organisational structure, supportive

management and self governance (Pieper, 2003; Upenieks, 2003). Studies comparing Magnet and non-Magnet hospitals found higher levels of job satisfaction, greater control over their decision making (Brady-Schwartz, 2005; Scott et al., 1999), a more supportive work environment, lower levels of burn out and greater intent to stay in their current job (Lacey et al., 2007; Laschinger et al., 2001).

Recently a study by Trinkoff et al. (2010) challenged the body of evidence associating Magnet hospitals with superior work environments. The study involved undertaking a secondary data analysis of the 2004 Nurses Worklife and Health Study and involved 837 nurses working in 14 Magnet and 157 non-Magnet acute care hospitals. Trinkoff et al. found no significant difference in the working environments between nurses working in Magnet and non-Magnet hospitals. Trinkoff et al. also found that nurses in Magnet hospitals were statistically significantly less likely to report jobs that required overtime ( $p = 0.04$ ) or on call ( $p = 0.01$ ), but worked the same number of hours as non-Magnet nurses. However, the physical demands were statistically significantly lower ( $p = 0.03$ ) in the Magnet Hospitals.

In response to Trinkoff et al. (2010) findings, Kelly, McHugh, and Aiken (2011) undertook secondary analysis of data derived from a RN population based survey across four states (California, Florida, Pennsylvania, and New Jersey) in 2006-2007, involving 26,276 nurses and 567 acute care hospitals, of which 45 were Magnet hospitals. The purpose of the survey was to determine whether organisational nursing characteristics and nurse job-related outcomes differ in Magnet compared with non-Magnet hospitals. The authors did not include a reference for the 2006-2007 RN-population based survey. Kelly et al. (2011) found nurses working in the Magnet hospitals had statistically significantly better work environments ( $p < .001$ ), were 18% less likely to be dissatisfied with their job ( $p = .01$ ) and 13% less likely to report high burnout ( $p = .03$ ). Although the authors listed a number of methodological reasons for null findings of studies, they did not specifically associate these with Trinkoff et al. (2010) methodology. However, based on their findings they concluded that Magnet hospitals provide superior nurse work environments compared with non-Magnet hospitals.

Research studies undertaken in Australian hospitals that do not have Magnet status have supported findings of Magnet hospitals that nurse autonomy is positively associated with job satisfaction, (Bartram et al., 2004; Cowin, 2002; Day, Minichiello & Madison, 2007; Duffield et al., 2009). The largest of these by Duffield et al. (2009) collected staffing and patient data on 80 randomly selected medical and surgical units in 19 hospitals during 2004-2005 in New South Wales to investigate factors impacting on nurses' job satisfaction, satisfaction with nursing and their intention to leave the hospitals. This study provided information, for the first time on a large scale, on the working environment at the ward level in public hospitals in NSW.

Duffield et al. (2009) investigated nurses' perceptions of their working environment and found nurses' autonomy 95% CI [0.042, 0.115], control over their practice 95% CI [0.048, 0.103] and good nursing leadership on their ward 95% CI [0.013, 0.054] were statistically significant predictors of job satisfaction. These factors, along with the presence of a nurse educator and adequate resources were also found to be perceived as important for providing safe patient care (Duffield et al., 2009). These findings support Bartram et al. (2004) and Pearson, Porritt, et al.'s (2006) finding that social support from supervisors or peers in nursing teams increased job satisfaction. Duffield et al. also found full time staff were more satisfied than part time and casual and those nurses intending to stay in their job had more job satisfaction, were older, had dependents, had allied health support and were experiencing good leadership on the ward. Most nurses reported excellent or good levels of quality patient care had been provided during the past 12 months. Other studies have argued that nurses strongly value the ability to provide good patient care (Day et al., 2007; Jones, 1998; Nolan M, Nolan, & Grant, 1995) but their inability to do this is linked to lower job satisfaction and staff retention (Aiken et al., 2001; Reeves, West, & Barron, 2005).

High workloads associated with staff shortages and patient turnovers resulting in incomplete care have been reported as the main reason nurses are unable to provide quality care (Aiken et al., 2001; Duffield et al., 2011; Habberfelde, Bedecarre, & Buffum, 2005;). Aiken et al. (2002) found increased workload was a statistically significant predictor of job dissatisfaction ( $p < 0.001$ ) and staff burnout ( $p < 0.001$ ). Other factors identified as positively impacting on job satisfaction include nurses

having time to write patients' notes and work within a patient focused nursing delivery model (Makinen et al., 2003), good communication between nurses and medical staff (Chang, Ma, Chiu, Lin, & Lee, 2009; Dougherty & Larson, 2005; McCaffrey et al., 2010) and good morale (Day et al., 2007; DiMeglio et al., 2005).

Research associated with Magnet hospitals and patient outcomes is less conclusive than nurses' working environment as limited research has been undertaken with mixed results reported. Studies undertaken in the 1990's comparing patient mortality rates in Magnet and non-Magnet hospitals found they were lower in the Magnet hospitals (Aiken et al., 1994; Aiken et al., 1999), but no effect on mortality was found in studies undertaken more recently (Goode et al., 2011; Hickey et al., 2010).

The most recent study that compared patient outcomes and staffing in 19 Magnet and 35 non-Magnet hospitals using data from the 2005 University Health Systems Consortium database and a subset of data collected in Hickey et al.'s (2010) nurse staffing and patient outcomes study, reported poorer patient outcomes in Magnet Hospitals (Goode et al., 2011). Goode et al. (2011) found, with the exception of slightly lower pressure ulcer rates, that Magnet hospitals had statistically significant higher rates of intravenous lines and catheter infections ( $p < .05$ ), postoperative sepsis ( $p < .05$ ) and postoperative complications following elective surgery ( $p < .05$ ) compared to non-Magnet hospitals. Goode et al. related the poor outcomes to having fewer total staff and a lower RN skill mix.

Several seminal studies have established that higher RN levels are associated with improved patient outcomes. Three of these studies undertaken in the USA found that lower RN staffing levels adversely affected patient outcomes (Aiken, Clarke Sloane, Sochalski, & Silber, 2002; Aiken et al., 2003; Needleman et al., 2002). Aiken et al. (2002) and Aiken et al. (2003), while reported as two separate studies, in fact used the same data sources but each paper represents a different study focus. Both studies used the same administrative data describing 168 adult general hospital characteristics from the 1999 American Hospital Association survey and 1999 Pennsylvania annual department of health survey; discharge data describing over 200,000 orthopaedic, general and vascular surgery patient outcomes from

Pennsylvania Health Care Cost Containment Council and 10,184 nursing staffing and outcomes from a 50% random sample of RNs on the Pennsylvania Board of Nursing rolls. Similarly Needleman et al. (2002) used large publicly available administrative databases from the 1997 American Hospital Association of discharge data of 5,075,969 medical and 1,104,659 surgical patients from 799 hospitals in 11 states in USA along with data for nursing staffing and linked these with the International classification of diseases coding to define clinical outcomes, potentially sensitive to nursing practice.

Aiken et al. (2002) reported the adverse impact associated with adding another patient to nurses' workload resulting in a 7% increase in the likelihood of dying within 30 days of admission (OR = 1.07, 95% CI [1.03, 1.12]) and a 7% increase in the likelihood of failure to rescue (OR = 1.07, 95% CI [1.02, 1.11]). Needleman et al. (2002) found statistically significantly fewer adverse events in medical patients of UTI ( $p < 0.001$ ), upper gastrointestinal bleeding ( $p = 0.03$ ), pneumonia ( $p = 0.001$ ), and in surgical patients of UTI ( $p = 0.04$ ), and failure to rescue ( $p=0.008$ ). were associated with increased nursing RN hours per day. Aiken et al. (2003) found that in hospitals with 10% increase in the proportions of nurses with baccalaureate level or higher was associated with a 5% decrease in mortality within 30 days of admission and failure to rescue rates (OR = 0.95, 95% CI [0.91, 0.99]). Each of these studies used a correlation design and therefore their findings are limited to reporting associations from the hypotheses tested rather than establishing the existence of a relationship between two or more variables by testing for cause and effect relationships.

These findings were subsequently supported in two systematic reviews that included these studies (Pearson, O'Brian-Pallas et al., 2006; Kane, Shamliyan, Mueller, Duval, & Wilt, 2007). Both of these systematic reviews review met all of the quality appraisal criteria developed by CASP (Evidence Based Health Care, 2005). Pearson, O'Brian-Pallas et al. (2006) systematic review was undertaken as part of a Canadian and Australian partnership involving the Registered Nurse association of Ontario (RNAO), Health Canada, Office of Nursing policy (HCONP) and the South Australian Department of Human Services. The partnership was formed to undertake a suite of systematic reviews aimed at providing evidence to support best practice guidelines for healthy work environments. The purpose of this particular systematic

review, that examined international literature published in English language from 1966 to 2003, was to examine the impact of nursing workload and staffing on creating and maintaining healthy work environments. A total of 40 publications were included in the review, with the majority of these being correlation descriptive studies, one systematic review and the other a cohort study.

Of these, five papers were included that reported on the relationship between nursing workload and patient outcomes and 13 that reported on the impact of the proportion of RN and patient outcomes. A narrative summary was provided as a meta-analysis could not be undertaken due to differences in the studies' heterogeneity arising from the various methods to calculate workload in the included studies.

Pearson, O'Brien-Pallas, et al. (2006) found higher nursing workloads were statistically significantly associated with failure to rescue ( $p < 0.01$ ), respiratory tract infections ( $p < 0.05$ ), increased mortality rates ( $p < 0.01$ ), and patient safety ( $p < 0.01$ ). They also found there was evidence to suggest that an increase in the proportion of RN in medical wards was associated with decreases in rates of UTIs, pneumonia, and upper gastrointestinal bleeding. In surgical patients they found improved patient outcomes in mortality, deep vein thrombosis, pneumonia, falls, pressure ulcers, injury and failure to rescue.

Despite the limitation of not being able to undertake a meta - analysis, the review contributed to this thesis as it demonstrated relationships between high workloads, and RN staffing and patient outcomes across studies indicating a level of consensus between findings.

Stronger supporting evidence of the association between RN staffing and patient outcomes was provided by Kane et al's. (2007) systematic review. The authors reviewed all the English speaking literature that examined the association between RN staffing and patient outcomes from 1990 -2006. Twenty eight studies were included as these reported adjusted odds ratios that enabled data to be pooled from individual studies and a meta analysis to be undertaken to assess the consistency of the association between RN staffing and patient outcomes across the different study designs. The designs of the included studies were 17 cohort, 7 cross-sectional and 4 case control.

Statistically significant associations were found between increased RN staffing and lower hospital related mortality in intensive care units (OR= 0.91, 95% CI [0.86, 0.96]; in surgical (OR= 0.84, 95% CI [0.80, 0.89], and in medical patients (OR= 0.94, 95% CI [0.94, 0.95], per additional full time equivalent per patient day. An increase by 1 RN per patient day was associated with a decreased odds ratio of hospital acquired pneumonia (OR= 0.70, 95% CI [0.56, 0.88], unplanned extubation (OR= 0.49, 95% CI [0.36, 0.67], respiratory failure (OR= 0.40, 95% CI [0.27, 0.59], and cardiac arrest (OR= 0.72, 95% CI [0.62, 0.84] in ICUs, with a lower risk of failure to rescue (OR= 0.84, 95% CI [0.79, 0.90] in surgical patients. Length of stay was shorter by 24% in ICUs (OR= 0.76, 95% CI [0.62, 0.94] and by 31% in surgical patients (OR= 0.69, 95% CI [0.55, 0.86] (Kane et al., 2007).

The significance of this review is that it combined pooled data from individual studies and applied statistical tests to manage, as much as possible, causality not inherent in the studies' designs. This provided evidence to support the findings of individual studies and demonstrating a consistent effect in ICU, medical and surgical patients of improved patient outcomes associated with increased RN staffing.

A Canadian study involving 18,142 patients in 49 acute care hospitals in Alberta found that hospitals with a higher proportion of degree prepared nurses, greater skill mix of RN and collaborative nurse physician relationships had lower 30 day mortality rates (Estabrooks et al., 2005). Conversely hospitals with higher proportions of casual and temporary nurses had higher 30 day mortality rates (Estabrooks et al., 2005). Lower rates of surgical mortality and failure to rescue associated with hospitals that had higher RN to patient ratios were also reported in a United Kingdom study that involved 30 acute care trusts (Rafferty et al., 2007). In their systematic review Pearson, O'Brien-Pallas, et al. (2006) found that increased total hours of nursing time were associated with lower mortality rates, fewer medication errors occurred and that length of stay, injuries and falls decreased.

Similar findings from these studies and systematic reviews were also reported in an Australian study that investigated nursing staffing, workload, the work environment and patient outcomes (Duffield et al., 2011). The study used cross sectional data from 80 randomly selected wards in 19 hospitals in 2004-2005 and

longitudinal data from 26 hospitals and 286 wards from 2001-2006 in NSW. Duffield et al. (2011) found a skill mix with a higher proportion of RNs were associated with statistically significant ( $p \leq .01$ ) decreased rates of decubitus ulcers, gastrointestinal bleeding, sepsis, shock, physiologic/ metabolic derangement and pulmonary failure.

Duffield et al. (2011) also reported patient adverse events, with medication errors being the most common at 15.8% of patients and overall 18.4% of patients experienced either a fall or medication error. Although no statistical significant values were provided, the authors reported statistical associations between delays in responding to patient call bells, recording vital signs, administering medications, undertaking dressings, mobilisation/turning and administering pain medications with increased unanticipated changes in patient acuity, decreased resource adequacy and decreased specialist nursing support. In addition, a number of patient direct and indirect activities were reported as not being undertaken - comforting and talking to patients, back rubs and skin care, oral hygiene, teaching patients and families and documentation.

A strength of Duffield et al. (2011) study is that unlike the large scale American studies that investigated the relationship between nursing staffing, workload and patient outcomes it combined unit-level primary data with large administrative data sets. This approach provided a better understanding of the working environment as it captured the impact of the variation among wards. The usefulness of this information is that strategies to address nursing workload and staffing can be learned from this study at a unit, hospital and state level.

In this thesis, the shared care model study, in addition to the influence of the work environment, consideration was given to methods ensuring patients' routine care requirements were met using a systematic approach. This was achieved by each of the studies 21 wards incorporating nursing rounds into their SCM.

## **2.7 Nursing Rounds and Improved Patient Care**

The limited research investigating the impact of nursing rounds has mainly focused on its use as an intervention to reduce call bell light use and consequently enhance patient safety and satisfaction. The largest study was undertaken in 27 nursing

units in 14 hospitals using a quasi-experimental design over six weeks (Meade, Bursell, & Ketelsen, 2006). Meade et al. (2006) examined the impact of conducting nursing rounds either hourly between 0600 and 2200 and two hourly between 2200 and 0600 or two hourly throughout the 24 hour period based on the frequency of the patient call light use, patient satisfaction and patient falls. Nursing rounds involved assessing patients' pain levels, administering prescribed medication; assisting with toileting and comfort needs, such as repositioning and placing items within the patient's reach; and informing the patients when they will next be attended to. Un-regulated staff undertook the rounding on the odd hours and RNs on the even hours.

Meade et al. (2006) categorised 26 reasons for call light use with the most common reported for bedpan or bathroom assistance, followed by intravenous line problems or pump alarm and found all had been statistically significantly reduced after implementing hourly ( $p = 0.007$ ) or two hourly rounds ( $p = 0.06$ ). Statistically significant increases were also reported for patient satisfaction following hourly rounding ( $p = 0.001$ ) and two hourly rounding ( $p = 0.001$ ) and patient safety with a reduction in falls ( $p = 0.01$ ) in the units that undertook hourly rounding (Meade et al., 2006).

A smaller study undertaken in three units - a step-down, surgical and medical unit - in one hospital introduced nursing rounds hourly between 0600 and 2200 and two hourly between 2200 and 0600 to assist staff by reducing 'busy work' (p. 50) and to increase patient satisfaction (Culley, 2008). Cully (2008) found, over the eight week study period, all units had reductions in the use of call light; 77% reduction on the step-down unit, 31% on the surgical unit and 56% on the medical unit. In addition, significant increased levels of patient satisfaction were also found (statistical value not stated). Cully did not describe the nursing round components or the level of nurse providing them.

The only Australian study that investigated the impact of comfort rounds examined its impact on patient satisfaction and nurses' perceptions of the practice environment (Gardner, Woollett, Daly, & Richardson, 2009). The study was a pilot study and used a quasi experimental pre test post test design in two matched surgical wards, one of which acted as a control ward, in two hospitals in Brisbane. The comfort

rounds were undertaken by nurses and two AINs and included the same components as Meade et al.'s (2006) study, along with providing mouth care and oral fluids. Gardner et al. (2009) found no difference in patient satisfaction between the two wards, but overall nurses who participated in the comfort rounds reported improvements in their perception of quality care, resource adequacy and professional relations.

Unlike these studies which involved teams of nurses and AINs, one study introduced nurses rounds undertaken by a charge nurse in a 27 bed surgical unit in an American hospital over a 10 month period (Woodard, 2009). The focus of the rounds and frequency was similar to previous studies, occurring two hourly and addressing concerns associated with pain, toileting and assisting with positioning and management of pressure points. Woodard (2009) also reported similar findings with an increase in patient satisfaction and a decrease in call light frequency and falls. No qualitative data were collected from the twelve charge nurses who undertook the nursing rounds to determine their perspective.

The limited evidence has provided supporting information for the use of nursing rounds as a method to improve the quality of patient care to be incorporated into this thesis. Another routine feature of patient care is the communication of patients' progress and subsequent treatment plan between nursing staff during handover. In this SCM study, in response to concerns regarding the effectiveness of the existing group handover, nurses from eight wards decided to incorporate bedside handover into their version of the SCM. Nursing staff were interested in developing a standard approach that involved nurses caring for patients in a shift handing over to nurses responsible for patients' care in the subsequent shift and incorporating relevant patient charts.

## **2.8 Nursing Handover and Improved Communication of Patient Care**

Communication of information between nurses during the shift or formally at the change of each shift is an essential component of patient care. The aim of handover is to communicate accurate, up to date information about the patient's care, treatment, use of services, current condition and any anticipated changes to that condition (Joint

Commission on Accreditation of Healthcare Organisations, 2008) to enable decisions in the planning and prioritisation of patient care (Poletick & Holly, 2010).

Frequency and duration of handover is dependent on the number of patients in the ward, their level of acuity, the clinical speciality, turnover rate and the familiarity of the oncoming nurses with the current patient load (Forrester, Duffield, Roche, & Merrick, 2005). Duffield et al. (2006), in a work sampling study in six wards of a large Australian private hospital, found nurses spent 10-15% of their day involved in verbal reports and handover activities. Street et al. (2011), in a cross sectional study involving 259 nurses in 18 wards of a large Australian public hospital, found variation in frequency, duration and location of handover. The majority of nurses received one handover, usually given by the nurse caring for the patients to the oncoming team, at the nurses' station, handover room or patient's bedside, lasting an average of 21 minutes. A third received two handovers, one from the shift coordinator in the handover room and the other from the nurse caring for the patient, either at the patient's bedside or nurses' station, lasting an average of 33 minutes. With the exception of the second handover, when only verbal information was used, all other handovers involved both verbal and written information, though the specific detail was not described.

Traditional methods of taped and verbal handover have been found to be associated with omissions and inconsistencies with patient treatment (Richard, 1988); loss of data (Pothier et al., 2005); variability in style, duration and content (Sexton et al., 2004); and irrelevant, repetitive and speculative information (Benson, Rippin-Sisler, Jabusch, & Keast, 2007). The consequences associated with these factors include lack of treatment planning (Dowding, 2001; Fenton, 2006), a high risk for near misses and adverse events (Ebright, Urden, Patterson, & Chalko, 2004), inappropriate decision making and a mismatch between patient care demands, resource capacity and service efficiencies (Anderson & Mangino, 2006; Benson et al., 2006).

From a nurse's perspective, studies have reported mixed benefits associated with verbal face to face handover. These include positive effects of a stress reducer and promotion of critical thinking in critical care (Faller-Scalamogna, as cited in Poletick & Holly, 2010) and unburdening of negative emotions when caring for dying

patients (Hopkinson, 2002). Negative effects were a poor learning environment caused by unsupportive behaviour by nurse leaders (Hays, 2002) and junior nurses feeling they were being tested rather than treated as collaborative team members (Manias & Street, 2000). Poletick and Holly's (2010) systematic review of qualitative studies of inter-shift handoffs, confirmed the association between handover and the ward culture as they found the existing hierarchy influenced the conduct of handovers and was used to assimilate nurses into the ward's culture.

This confirmation is important as it represents the meta synthesis of 21 qualitative studies, published in English during 1988-2008, that drew on the experience of nurses in acute care settings with inter-shift handoff. The authors used the Qualitative Assessment and Review Instruments (QARI) software developed by leading Australian qualitative researchers specifically for undertaking qualitative systematic reviews (Pearson, 2004) which includes critical appraisal, data extraction, levels of evidence and meta synthesis. A good standard of rigor in the included studies was demonstrated in the assessment of methodological quality of the included studies through the use of the relevant QARI instruments.

To address these failings research has focused on alternate methods of handover such as bedside handover and application of standardised handover protocols such as the SBAR format where clinical information is reported in terms of Situation, Background, Assessment, and Recommendation (SBAR) (Haig, Sutton, & Whittington 2006). Studies involving examining the patient's perspective of bedside handover found the use of clinical jargon may be disturbing or dehumanising to patients (Cahill, 1988). Confidentiality, contrary to Greaves' (1999) finding of nurses' perception, was not a concern (Cahill, 1998; Kassean & Jagoo, 2005; Kelly, 2005). Patients viewed bedside handover as a way of amending any inaccuracies in the information being communicated and appreciated the inclusive approach from the nurse-patient interaction (McMurray, Chaboyer, Wallis, Johnson, & Gehrke, 2011).

A study that incorporated bedside handover and standardised operating protocols of SBAR as part of a larger quality improvement initiative known as Transforming Care at the Bedside (TCAB), reported the collective initiatives resulted in statistically significant reductions in falls ( $p < 0.05$ ) and readmissions ( $p < 0.001$ )

and enhanced patient-centered care in 10 American hospitals (Needleman et al., 2009). On a smaller scale but specifically examining established handover practices and the introduction of bedside handover and use of SBAR in 18 wards in a large Australian public hospital, Street et al (2011) suggested both SBAR and bedside handover improved continuity of patient care.

Another Australian study used the SBAR format when observing nursing bedside handover as part of a study to identify factors influencing change in three wards in two hospitals, after moving from taped and verbal handover in Queensland or beginning the process of changing to bedside handover in the Western Australian hospital (McMurray, Chaboyer, Wallis, & Fetherston, 2010). McMurray et al. (2010) undertook 532 semi-structured observations during nursing bedside handover and 34 in depth interviews. Thematic findings were used to form the basis of a standard operating protocol for bedside handover and identifying change management considerations when introducing bedside handover. The standard operating protocol involved describing components required for the five stages of preparation, introduction of staff and patient, information exchange, patient involvement and safety scan. Identified change management considerations were embedding the change as part of the big picture, the need to link the project to standardisation initiatives, provision of reassurance on safety and quality, smoothing out logistic difficulties and learning to listen to participating staff.

A systematic review of the literature to determine the barriers to and strategies for effective handover confirmed earlier studies' findings linking communication to omissions; inaccurate, lengthy or irrelevant content; and the use of standardising process to improve handover (Riesenberg, Leitzsch, & Cunningham, 2010). However, both Riesenberg et al. (2010) and Poletick and Holly (2010) concluded there is limited evidence to causally link standardisation of handover protocol or bedside handover with enhanced communication and improved patient outcomes.

## **2.9 Chapter Summary**

Historically systems of nursing care delivery have been influenced by political issues, social values and economic considerations with these factors reflected in the type of delivery models used over the last 100 years. The main types of nursing models

used have been variations of team nursing and primary or patient allocation. However, there is limited research which evaluates the types of delivery models of nursing care to assist with conclusively demonstrating the impact of one model of care as compared to another in terms of staff and patient satisfaction, quality and cost of care.

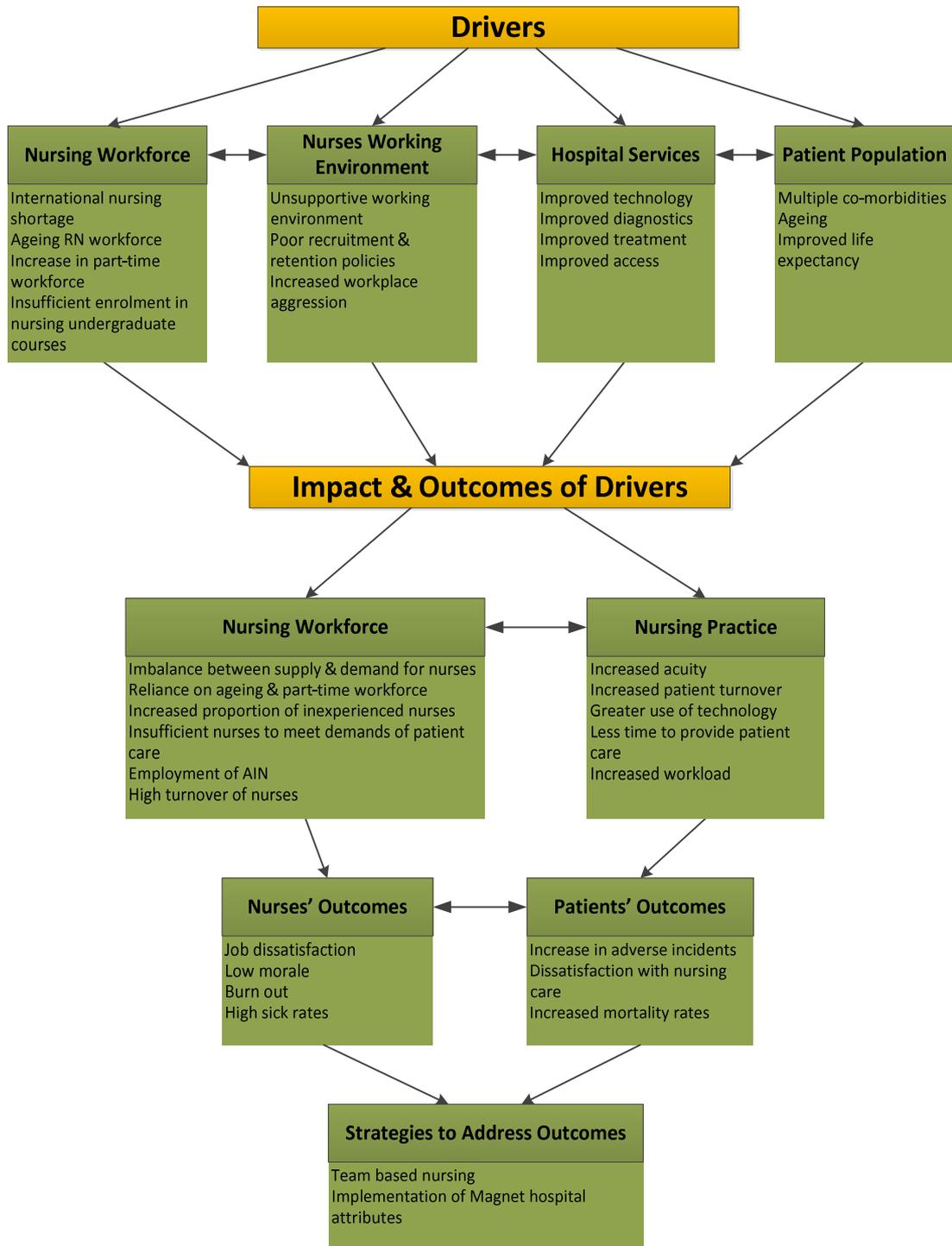
In today's complex and demanding hospital environment a number of interrelated drivers and their impact on nurses and patient care, as shown in Figure 2.1, have led to hospitals' management investigating the use of team nursing and strategies to improve the working environment. Their reported expectation has been that team nursing will assist in managing the change in workforce with a greater reliance on a varied skill mix of registered and enrolled nurses and nursing assistants in the provision of patient care. Working within a team is expected to support the team members in making patient care decisions that promote quality patient care, and foster a supportive working environment. However, to date, team based nursing studies have largely been small, mainly involved medical and surgical wards, and reported varied results for staff and patient satisfaction and clinical outcomes.

The majority of evidence associated with good staff and patient outcomes has been reported in literature examining the attributes of Magnet hospitals. Among these attributes are RNs practicing with autonomy, decentralised organisational structure, supportive management and self governance.

Similar to the rationale for other team based studies, the drivers and their impact shown in Figure 2.1 led to this shared care model study being undertaken. In contrast to previous team based studies, this study, the largest team nursing based study, to date, included a diverse range of clinical areas. In addition, it included patient safety measures of nursing rounds and bedside handover reported in the literature to improve the quality of patient care. The hospital, the study was undertaken, was not a Magnet Hospital. However, the study incorporated evaluation measures that examined the impact of the shared care nursing model on components of nurses working environment that were reported in the literature to affect nurses and patient outcomes.

Having described and critiqued the literature relevant to the various components of the study, the next chapter details the study methodology.

Figure 2.1  
*Drivers and their Impact Leading to Team Based Research*



## CHAPTER THREE

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### ***METHODOLOGY***

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This chapter outlines the study aims and rationale for the research design and its application in the pilot study. Details of each phase of the research process is described along with the role of the researcher, recruitment and eligibility criteria, data instruments and data collection tools, statistical methods, qualitative analysis and ethical considerations.

The aims of the study were fourfold:

1. To develop and implement a SCM of nursing care that supports the different levels of skill mix in the provision of safe care for patients admitted to 21 nominated wards at the study hospital;
2. To determine the impact the SCM had on staff workload, team approach to organisation and provision of nursing care, and the culture of support;
3. To evaluate the impact of interventions nominated by staff to be incorporated into the SCM: nursing rounds, bedside and board handover;
4. To investigate the impact the SCM had on patient satisfaction, patient complaints and adverse incidents.

### **3.1 Methodology**

The philosophical base for this study is critical social theory and the methodology is participatory action research (PAR), underpinned by principles and processes of emancipatory practice development (ePD).

The origins of action research is grounded in a social science methodology. It evolved after World War II from two sources. One was the work of Kurt Lewin, aimed at helping social workers with their problems in practice using a social, psychological and experimental theoretical framework. The other was the Tavistock Institute for

Human Relations, in England, which used a social and management systems theoretical base (Holter & Schwartz-Barcott, 1993). Since this time action research has been used across a diverse range of disciplines such as education, sociology, psychology and organisational management. Using this approach, health researchers have continued to draw on different philosophical orientations, such as natural sciences, phenomenology and critical sciences (Reason & Bradbury, 2001). These different philosophical stances are underpinned by diverse methodologies (Grundy, 1982).

Influenced by Habermas's (1972) critical theory of three interests that constitutes knowledge: technical, obtained through gaining technical knowledge; practical interests; obtained by understanding and clarifying how others see their world; and emancipatory interest, concerned with how self reflection and self understanding is influenced by social conditions. Grundy (1982) and Kemmis (2001) developed three modes of action research. Technical action research uses an empirical-analytic approach to achieve predetermined outcomes by improving the practical skills of the participants. Practical action research uses an interpretive approach, facilitated by a researcher using self reflective processes, to improve outcomes and to inform the practical decision making of practitioners. Emancipatory action research uses a critical approach to improve outcomes, improve participants' self-understanding and also to promote a critical understanding of their personal, political and cultural work environment. The purpose of this critical intent is to emancipate participants to take action to overcome dissatisfaction, alienation or dominance. The role of the researcher is to help participants be aware of and free from traditions, habits and precedents that constrain their practice (Grundy, 1982; Kemmis, 2001).

Central to all forms of action research, regardless of its differing philosophical stances and methodologies, are four characteristics: a focus on pursuing a worthwhile practical purpose to address issues of concern to individuals or communities; to build democratic, participative and pluralist communities of inquiry for political, moral and epistemological reasons; the integration of theory and practice; and emergent process whereby the inquiry continues long after the research is completed (Reason, 2006).

These four dimensions are reflected in a recent definition of action research by Reason and Bradbury (2001):

A participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes....It seeks to bring together action and reflection, theory and practice, in participating with others , in the pursuit of practical solutions to issues of pressing concerns to people, and more generally the flourishing of individual persons and their communities. (p.1)

Participatory action research is described by Kemmis (2001) as an example of critical research guided by Habermas's emancipatory interest. As the name suggests PAR involves participation and action whereby research is conducted "with" people as opposed to "on" people (Heron & Reason, 2001, p.127). A fundamental premise of PAR is that it embraces the concerns experienced by a group, community or organisation (McTaggart, 1997; Park, 2001). This is achieved by a democratic and participative process that is grounded in the belief that people have a right and ability to contribute to decisions that affect them and to knowledge that is about them (Greenwood & Levin, 1998; Kemmis, 2001). Authentic participation in research requires sharing the way in which research is conceptualised, practised and brought to bear in light of the person's situation (McTaggart, 1997). Participatory action research requires primary researchers and participants to come together in a more "communitarian way breaking down the old borders of knowledge - producing and knowledge-consuming elites" (Lincoln, 2001, p. 127). It involves focusing on the production and generation of knowledge as a shared task between the researcher and participants.

Action is achieved through a series of reflective cycles, which include planning and implementing a change, reflecting on these processes and consequences, and then further cycles of planning, acting and reflecting (Heron & Reason, 2001; Kemmis & McTaggart, 2005). The aim of the reflection and action cycles is to provide a space within which critical dialectic discourse can be developed and meaningful change considered (Friere, 1970). Parallels can be drawn with Habermas's (1981) theory of communicative action in which people find a communicative space where they may find solidarity as understandings of their situation are jointly considered. It is through

the process of generating self and group reflective knowledge, derived from critical social theory philosophy, which enables a collective understanding of the problematic situation that empowers participants to take action and responsibility for improving their situation (Park, 2001).

Critical social science was identified by Manley and McCormack (2003) as being the philosophical base for practice development and ePD as being synonymous with emancipatory action research. This premise was built on Habermas's theory of knowledge-constitutive interests, Grundy and Kemmis's three modes of action research, and the alignment of both these to technical and emancipatory practice development (Manley & McCormack, 2003).

Since practice development was introduced in the 1980's, researchers used action research designs to frame practice development activities (Binnie & Titchen, 1999; Pearson, 1983). A recent systematic review of practice development activities by McCormack, Wright, Dewar, Harvey, and Ballantine (2007) found the reported methodological approaches used were participatory models, action-research orientated and pedagogical models.

According to Manley and McCormack (2003), consistent with Habermas's technical knowledge, changing practice, using technical practice development techniques, is considered a technical process that may use a technical action research approach, with no deliberate intent to develop staff. Conversely, changing practice, by using ePD techniques, consistent with Habermas's (1972) emancipatory interest, "is deliberate and inter-related with creating a specific type of culture, termed transformational culture (Manley, 2001) where quality becomes everyone's business; positive change becomes a way of life" (Manley & McCormack, 2003 p.24). This process, like emancipatory action research, relies on skilled facilitation to assist staff to increase their awareness through reflective discussion of aspects of practices that are constraining them (Manley & McCormack, 2003). The main difference between technical and ePD development lies in the different intent, either focusing on achieving a specific outcome or placing equal emphasis on both learning by practitioners and outcomes of the practice development activities, respectively. Consequently, each requires different methodology and processes. Action research, with its distinguishing

features of participation and collaboration between researcher and practitioner to ensure an agreed understanding of the social context and the simultaneous development of theory, serves as a congruent methodology to undertake different types of practice development. The participative nature of action research has been developed by a range of action researchers and promoted as a “participatory world view” by Reason and Bradbury (2001, p. 6).

Garbett and McCormack (2002) refined McCormack, Manley, Titchen, and Harvey’s (1999) definition of practice development to emphasise the importance of practitioners involved in the process and the end user of the service:

Practice development is a continuous process of improvement towards increased effectiveness in patient-centred care. This is brought about by helping health care teams to develop their knowledge and skills and to transform the culture and context of care. It is enabled and supported by facilitators committed to systematic, rigorous continuous process of emancipatory change that reflects the perspectives of service users. (p. 88)

Common to both PAR and ePD is the philosophical base of critical social science; skilled facilitated systematic process, resulting in generating knowledge from the data that emerge from the area of investigation and deployment of flexible methods to investigate and evaluate the phenomenon (Fitzgerald & Armitage, 2005). Skilled facilitation is favoured in PD activities whether appointed as a formal position, as recommended by Harvey et al. (2002), or undertaken by a staff member from within the organisation as recommended by Larsen, Maundrill, Morgan, and Mouland (2005), although their role is poorly articulated and evaluated (McCormack et al., 2007). Similarly PAR advocates the importance of the researcher role in creating opportunities between participants to stimulate dialogue to enable democratic agreement (Kidd & Kral, 2005) and to manage the impact change may have so that participants feel supported and respected (Guba & Lincoln, 1989). Emphasis is placed on the researcher being aware of their own voice and actions and the effects on the research process, expressed as “inner and outer arcs of attention” by Marshall (2001, p. 433) to undertake critical subjectivity (Reason, 1994). This involves the researcher having a capacity for being self-reflective, in order to level issues of power among

participants, acknowledge people think differently from one another, and importantly to question their response towards situations and understand that they themselves do not always know what is best (Wadsworth, 2001; Marshall, 2001).

Differences between PAR and ePD include PAR's focus on research to enable action with an explicit intent of developing transferable knowledge (Manley, 2004) through the use of action research cycles and evaluation of results to determine if desired effects are produced (Park, 2001). In addition, in PAR, the researcher has a responsibility to work with the participants in ways that effect meaningful change for the participants, in this particular case the nursing staff.

Fals-Borda and Rahman (1991), Reason (1994) and Kidd and Kral (2005) all suggest that PAR is usually adopted because the participants request to engage in a PAR project in the first instance. In reality, it is more common for a problem area to be identified and participants advised of the methodology to be used. In the case of this research, the problem, that is an imbalance of skill mix with a reliance on junior staff, was identified by the nursing executive who is responsible and accountable for ensuring nursing staff are supported in providing nursing care. However, the choice of methodology and philosophical intent was left to the researcher.

The Nursing Executive had determined that the existing patient allocation model of care was not sustainable given the reliance on junior nursing staff and indicated their preference for a team based model that incorporated the different levels of skill mix. This decision directly influenced the aims of the study which focused on the development of a new model that supported the skill mix and had a positive impact on nurses' working environment as well as patient care.

The aims of the study were all inter-related with the development, implementation and evaluation of a new model to organise and deliver nursing care. A number of factors were considered in determining the methodology and the philosophical intent. The most important of these were the impact a change in the model of care would have on nurses providing the patient care and its effect on patient outcomes. Links between the quality of nursing care and good patient outcomes have been well established (Estabrooks et al., 2005; Kane et al., 2007). Central to the

provision of quality nursing care is a high level of job satisfaction and involvement with decision making that affects their practice (Bartram et al., 2004; Cowin, 2002; Day, Minichiello & Madison, 2007; Duffield et al., 2009). Therefore, it was critical that nurse were heavily involved in determining the components of the model of care, how it was implemented, modified and evaluated in terms of its impact on their daily working practices and on patient outcomes.

Given that the nursing staff did not initiate the need to change, the methodology selected had to provide staff with an opportunity to explore the need for change and to engage them in playing an active part in developing and trialling their new model of nursing care. Participatory action research underpinned by ePD processes was selected as it ensured a high level of participation by nursing staff. This level of participation is achieved by the researcher using the social values, implicit in PAR, of democratic, equitable and liberating participation (Heron & Reason, 1997) and ePD principles of collaboration, inclusion and participation (Manley & McCormack, 2003). (These are reflected in the researcher's values and beliefs shown in Appendix A). PAR and ePD offers practical problem posing and problem solving approaches at grassroots level, the intention being that such action can lead to meaningful social change for those involved, to the system of which they are a part and to wider cultural practices. Drawing on critical social theory and using a PAR framework and ePD processes enabled the researcher to facilitate a level of engagement and investment by the participating nursing staff.

Either fourth generation evaluation or realistic evaluation methodologies could have been used to undertake components, but not the entire research study. However, neither would have enabled the overall aim to be met whereby a transformational change was required by nursing staff to develop a new model of organising and delivering patient care.

Fourth generation evaluation has emerged from adding a fourth evaluation element to three previous generations of evaluations of measurement, description and judgement (Guba & Lincoln, 1989). The primary intention of this methodology is evaluation in order to improve or judge, with education and empowerment of stakeholders seen as a consequence and not an intent, as in action research

(McCormack & Manley, 2004). Stakeholders are defined as agents - users of what is being evaluated, beneficiaries - those who will profit and victims - those who are negatively affected (Guba & Lincoln, 1989). A facilitated hermeneutic approach is used. Through prolonged periods of observation and questioning the researcher captures different stakeholders' unresolved items in the form of claims, concerns and issues. Using a process of democratic decision making, these are subsequently introduced to other stakeholder groups for comment, refutation or agreement in order to resolve items and establish a shared reality (Koch,1994).

This methodology would not be appropriate for this study as it fails to include the interaction of the social context and the agreed common view, and would be limited to components of phase III involving evaluating the developed new model of nursing care, all be it with much weaker staff engagement and participation than occurs with PAR. The limitations of using this methodology with nurses to identify the need for change and in developing the new model of care is that, unlike PAR, there is no certainty that action will be taken to develop the model as emphasis is placed on enhancing the understanding of a situation rather than taking action to improve it (Guba & Lincoln, 1989).

Realistic evaluation developed by Pawson and Tilley (1997) takes into account the social system and evaluation is undertaken within a realist evaluation cycle. The cycle involves an interplay of theory generation, hypothesis testing, observation and programme specification. Theory generation occurs by explaining the relationships between the mechanisms for change, the key elements of the context and their impact on the goal of a social programme. This enables hypotheses to be identified by predicting what might work for whom and in what circumstances. Multiple methods of data collection and analysis is used to determine what works for whom and in what circumstances. This enables a detailed description and analysis of the programme that details the relationships between mechanisms, context and outcomes and is described by Pawson and Tilley as programme specification. The difficulty in using realistic evaluation in this study is that, unlike PAR, it isn't suitable for Phases I and II of the study which required engagement and participation by nursing staff to develop the new model of care. The methodology could have been used for Phase III. However, given the complex interactions between mechanisms, contexts and outcomes associated with

this major practice change, the use of this methodology, would require an experienced researcher in this methodology to explain why events occurred in certain circumstances and in what ways these events are experienced by nursing staff.

The researcher was experienced in using action research and practice development techniques. In order to meet the study aims the intent was to empower staff through their participation and decision making in all aspects of the development and evaluation of the model of nursing care they will be using each shift they work. This approach is consistent with a critical social science perspective using a PAR methodology underpinned by ePD processes.

## **3.2 Study Design**

### **3.2.1 Pilot Study**

A pilot study was conducted on two 21 bed medical and aged care wards over a six month period to assess the methodology and determine the key principles for a new model of nursing care. A PAR methodology, underpinned by ePD processes, was used. This consisted of five phases incorporating the following: determining a rationale for change and orientating staff to the methodology, planning the change with staff, implementing the new model of nursing care, reviewing the change and evaluating the model by comparing the measures at different time points in the study.

The first three months were spent working with nursing staff to develop the model of care and the next three months the implementation and evaluation of the new model of care. During the development phase, through a series of 14 one hour sessions, all day and night staff were informed about the model of care study, and participated in reflective practice exercises to determine their values, needs and wishes about their work. A project group was formed consisting of the clinical nurse specialist (CNS), two staff development nurses (SDN), two clinical nurses, two registered nurses, two enrolled nurses, two graduate nurses. Patient care attendants and ward clerks were invited as necessary. With the exception of the CNS and SDN, the staff nominated through an expression of interest. Over a period of two months via 17 one hour facilitated meetings the group developed a new model of care they called the SCM.

Key principles of the SCM consisted of the following:

- Enables a learning culture;
- Supports staff;
- Provision of patient centred care;
- Pairing of an experienced nurse with a less experienced nurse who are then responsible for the care requirements of the group of patients allocated by the shift coordinator (SC);
- No allocation of patients to the SC for morning and afternoon shifts;
- Undertaking regular nursing rounds;
- Routine checking of all charts

In the situation when inexperienced staff were paired the SC or SDN were responsible for assisting them prioritise care requirements. Nursing rounds included assessment of the patient's pain level and administration of prescribed analgesic, attending to pressure area care as required, offering toileting, assessment of the patient's comfort, ensuring patient's call bell is within reach and informing them when the nurse will be returning. Details of guidelines for application of the SCM for both morning and afternoon shift were compiled and circulated among all staff (Appendix B).

Prior to implementation of the SCM, the project group were assisted with developing an implementation plan, which included a power point presentation detailing the operational aspects of the SCM, cards for lanyards describing the SCM, and staff education sessions to inform and discuss any queries related to the implementation plan. Over a period of three weeks of implementation the researcher worked clinically with staff to facilitate the change and held five one hour meetings with staff to enable them to raise issues and find solutions.

A further nine further facilitated solution focused sessions were held over the next nine weeks. The purpose of the solution focused sessions were to identify concerns associated with the SCM and engender self and group understandings through reflection. From this process, they were able to consensually determine the

solutions to address their concerns and subsequently judge if they worked. Walsh, Moss, and FitzGerald (2006) demonstrated solution-focused approaches as a PD method for improving practice.

Evaluation measures of staff satisfaction were obtained by trialling a questionnaire, intended for use in the main study, one month following the reflective practice exercises and three months post implementation.

Patients were interviewed to determine what their expectations of nursing care were and if they were met (Appendix C). A purposeful sample of 16 patients and one family member were interviewed over a four week period on the day of discharge. Information from the interviews was used to develop a survey to measure patients' satisfaction with nursing care. This survey was subsequently trialled, during the pilot study, three months post implementation of the SCM. In addition to patient satisfaction, the most common patient incident type was also assessed as an evaluation measure as part of the pilot study.

### **3.2.2 Summary of Pilot Study**

The pilot study was undertaken in two 21 bed medical and aged care wards over a six month period. Key principles of the SCM were determined while testing the methodology intended for the main study. Evaluation measures of staff and patient satisfaction were developed and trialled.

### **3.2.3 Main Study**

The aim of the main study was to implement the principles of the SCM throughout the 21 nominated wards and assess its impact on staff and patient satisfaction and patient safety.

### **3.2.4 Wards**

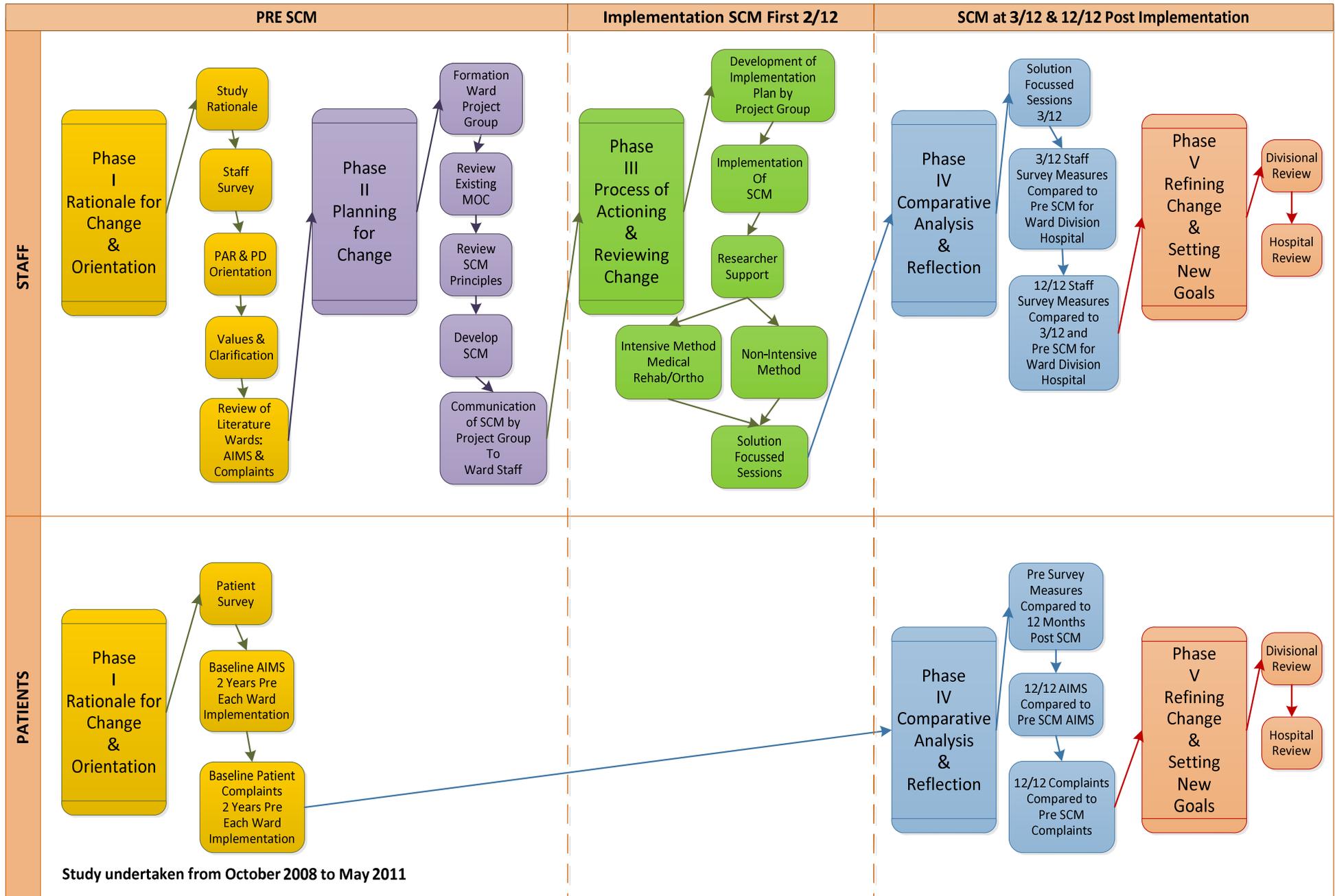
The NEC determined the 23 participating wards across five clinical divisions. These consisted of 10 medical wards, two of which participated in the pilot study, and were subsequently excluded from the main study, five surgical, six

rehabilitation/orthopaedic, one critical care and one cancer/neurosciences ward, resulting in 21 participating wards in the main study (Appendix D).

### **3.2.5 Five Phase PAR and PD Plan**

A PAR underpinned by ePD processes multiphase approach was undertaken in collaboration with staff and health consumers. Staff participated in redesigning, improving and evaluating practice through the following five phases, adapted from Walsh, McAllister, and Morgan (2002, p. 232). The five phases are demonstrated in Figure 3.1.

Figure 3.1  
Study Stages and Phases



### 3.2.6 Phase I: Rationale for Change and Orientation

This phase occurred over two weeks and involved: discussion with staff of each participating ward regarding the rationale for trialling the SCM, providing an overview of the pilot study findings, reason for using PAR and ePD emphasising the participatory nature and roles of researcher and staff, and orientating staff to this methodology and associated processes. The researcher also facilitated reflective practice exercises with groups of nurses (N = 423) to determine an agreed set of values that underpin their practice and their desired working environment through discussion generated from the following questions:

- What is at the heart of your practice?
- If I was a new nurse starting on your ward what would I want to be assured of?
- If I were a patient on your ward what would I want to be assured of?

Reflective practice processes have been established as a key component of practice development in a number of different settings such as assisting clinicians to identify areas for practice change in aged care (Walsh, McAllister, & Morgan, 2002), to assist mental health nurses understand their work with patients (Graham, 2000), and through a generic approach with registered nurses to generate change in themselves and their practice (Williams & Walker, 2003).

Concurrently, in preparation for the planning component of the action cycle, the researcher undertook a literature review of models of nursing care, and collected relevant baseline data on current practice such as workforce indicators, patient incidents, patient complaints, case mix data, staff and patient satisfaction data, and relevant audit results. In addition the researcher distributed a staff satisfaction survey during week one.

Information discussed and learned in Phase I enabled a general understanding of the research purpose, methodology and awareness of staffs existing values. It also

enabled a critical component of collaboration between the researcher and staff in understanding the issues under investigation (Heron & Reason, 1997) to commence.

### **3.2.7 Phase II: Planning for Change**

Building on the preliminary work undertaken in Phase I, Phase II focused on further preparing those involved and developing the SCM to suit each ward's clinical context over a period of five weeks. A project group was established in each ward. This group was responsible for devising the SCM, its implementation and its ongoing evaluation in their ward. All project groups included the researcher, CNS/clinical nurse manager (CNM) and SDN for each ward. The remaining nursing and multidisciplinary staff mix for each project group and the method of recruiting same was determined by the ward staff during the first week of Phase I. Typically, staff who were working on the day the planning meetings were held participated, which resulted in the majority of each ward's day staff being involved.

The group reviewed the literature and baseline data gathered in Phase I and used the information to justify trialling the SCM, to inform the model of nursing care and to identify improvement measures that could be incorporated into the evaluation component. The next component involved defining the existing model of care. Moss and Walsh's (2006) model of care tool kit was used as a framework to facilitate discussion as it guides users to focus on the context of the service and the features of the care delivered.

The group then developed their version of the SCM using the key principles of the SCM and determining additional practice components they wanted to incorporate. Different combinations of experienced and inexperienced teams were formed from teams of two to teams of five staff with different levels of experience. All of the Medical, Rehabilitation and Orthopaedic, Cancer and Neuroscience Divisions' wards allocated the teams to be collectively responsible for patients, while the Surgical and Critical Care Divisions' wards allocated primary responsibility for a number of patients to one nurse within the team but determined practice requirements that were undertaken collectively. Eight wards decided to integrate bedside handover whereby teams handover to the next team responsible for the same patients at the patient's bedside. This involved staff using the care plan headings e.g. medication, fluid

balance, and any other patient charts such as wound management to report patients' care and treatment plan along with inviting patients' participation where appropriate. Two wards included board handover which involved all staff meeting, at defined times, at the board which had an overview of patients, to be advised by the SC of changes to patients' management during the shift. Examples of guidelines for the Medical Rehabilitation and Orthopaedic and Surgical Divisions that describes these differences are included in Appendices E, F and G.

As it was not practical for every staff member to be involved in the ward project group, it was crucial members of the project groups understood that they were working on behalf of the staff and patients. As such they had a responsibility to communicate, gather feedback and refine the SCM in keeping with the expressed views and values of the staff. Typically, staff who were working on the day the planning meetings were held participated, which resulted in the majority of each ward's staff being involved. Each ward established a model of care communication file for use by all staff to ensure information was being made available by the project group and to enable staff to provide feedback to the project group. In addition, wards included model of care as a standard agenda item for their general meetings.

This approach and the information learned is fundamental to action research and ePD as it enables staff to examine the current culture and knowledge that impact on clinical practice (FitzGerald & Armitage, 2005) and participate in decision making to improve practice (Kemmis & McTaggart, 2005; Manley & McCormack, 2003).

The study was designed so that all wards within one division at the same time completed phases I-II. In addition each division commenced during or at the start of a graduate clinical rotation. Cross fertilisation did occur in small numbers of staff (n= 15) but this was managed statistically by using robust estimation of standard error so the results are valid.

### **3.2.8 Phase III: Process of Actioning and Reviewing Change**

This phase consisted of implementing and evaluating the effects of changes associated with the SCM as devised in Phase II and supporting staff undertaking the change. Members of the ward project group worked with the researcher to develop a

guideline that operationalised the SCM key principles for the morning and afternoon shifts (Appendices H, I and J). During the study period the practices outlined in the guideline were reviewed and consensus sought prior to making improvements using an action research cycle process of planning, acting, observing, reflecting and revising.

The researcher worked clinically alongside the nursing staff for the first week of implementation of the new model in 13 wards and this method is referred to as intensive implementation. However, due to the increasing number of participating wards at different stages of development, implementation and evaluation it was not practical to work clinically in all 21 wards. For the remaining eight wards the researcher was available to assist staff with organising the delivery of care using the SCM for up to four hours each day of the first week.

During the first week of implementation three facilitated solution focused sessions were held to enable issues to be raised and addressed within a short time frame. A minimum of six solution focused sessions during the first two months of implementation for each ward were held with 968 nurses participating. Subsequent facilitated solution focused sessions were held following presentation of the three and 12 month staff survey analysis and 12 months patient survey analysis with 317 and 177 nurses participating respectively, to assist with addressing issues from the staff and patient surveys. Staff choose to attend and typically checked with each other to determine who had attended previously to ensure those who hadn't attended had the option of attending.

Solution focussed sessions were held during an overlap of changeover of staff. The wards with 10-22 beds had an average of six staff, while those with 30 beds had an average of nine staff attending. The 10 bed unit had four staff attend. There was a good level of commitment to attend the sessions as demonstrated by staff attendance, those not at work leaving a lists of comments and questions to be raised and by the observed participation at the meetings.

From the period of three to 12 months each ward's CNS/CNM was responsible for the ongoing support associated with the implementation of the model of care. They were prepared for this role by attending, along with the researcher, two day workshops

by two Australian practice development professors. The researcher was available as a resource for the CNS/CNM and SDN and assisted with facilitating solution focused sessions as requested.

The researcher drew on the work of Walsh et al. (2006) to frame the solution focused questions to enable staff to identify issues associated with the SCM and determine solutions to address these. The solution focused sessions commenced with asking generic questions related to the SCM such as: What were the good things you found with the SCM? The researcher listed the statements and asked: What did you do to achieve each of the good things you found? These were followed by: What are the factors that impeded the SCM? After listing the statements the researcher asked staff to rephrase a response into a question so that it could be resolved by the group such as: How can we avoid repeating or going to do the same job as our partner? The group would then determine the solutions to address the factors listed that impeded the SCM. In situations where staff were having difficulty determining solutions, the researcher asked: If there was anything listed that they did to make the SCM work that they could use as a solution? In addition staff would describe scenarios that had occurred during the shift or create examples of possible scenarios to assist each other understand and maximise the perceived benefits associated with the SCM

The purpose of the solution focused sessions was to engender self and group understandings, through reflection, of their role in the production and reproduction of practices; to consensually determine the solutions; take responsibility for their implementation; then subsequently judge if they have worked or not during the study period. Hence incorporating a self and group reflective action cycle, using democratic participation to increase awareness of their practices and nurturing a culture which enabled staff to take ownership of the solutions they determined, were required for their version of the SCM. The implementation phase occurred over three months while the ongoing review occurred for the remainder of the 12 months.

### **3.2.9 Phase IV: Comparative Analysis and Reflection**

This phase involved the measurement and assessment at an individual ward, divisional and hospital level of the impact of changes made to care delivery. Comparative analysis was undertaken for data collected at three time periods: pre-

implementation, and three and 12 months post implementation of the SCM for nursing staff and pre implementation and 12 months post implementation for patients. Baseline data collected two years prior to the study for reported patient incidents and patient complaints were compared with those reported in the twelve months following implementation.

The purpose of the three month analysis was to enable nursing staff to formally evaluate the SCM so that changes could be made for the remainder of the trial. The purpose of the 12 month comparative analysis was to formally evaluate the impact of changing the model of nursing care at a ward, divisional and hospital level.

Following each nursing survey period the researcher analysed the results, compiled reports and presented these to ward staff and assisted them to determine the need for further changes to the SCM using solution focused sessions. Each ward's results were combined into the five divisions for analysis at both a divisional and hospital level.

Each ward's staff and patient survey evaluation was completed within defined study periods and findings presented to ward staff within one month for pre and three month surveys and within 2 months for 12 month surveys. Analysis of all data has occurred over a 12 month period since completion of implementation of the SCM.

### **3.2.10 Phase V: Refining Change and Setting New Goals**

This builds upon the data gathered in Phase IV. This phase assisted the project groups to determine if further refinement to the SCM was required, and the divisional Nursing Directors (ND) and the Nursing Executive to assess the impact the SCM had had on staff and patient satisfaction, and patient safety. Following completion of each ward's staff and patient analysis for the three and 12 month period, the researcher presented the results to ward staff and worked with the project groups to further refine the shared care model. Following completion of each division's and hospital analysis the researcher presented findings to the divisional ND and the Nursing Executive Council (NEC) to enable strategic goals regarding the model of care to be determined.

### **3.2.11 Application of Action Reflection Cycles**

Operationalising the action reflection cycles was not found to be linear but several cycles occurred either partially or fully in each of the five study phases shown in Figure 3.1. The first cycle commenced in the Rationale for Change and Orientation phase, in identifying values and associated behaviours. This was continued into the Planning for Change phase where, after reflective discussion, agreement was sought on how to incorporate these into the SCM. The actioning component of the cycle occurred in the implementation of the SCM during the process of Actioning and Reviewing Change phase through the facilitated solution focused sessions.

The understanding gained from the meetings held with each division's CNS/CNM and Nursing Directors enabled further action cycles in phase IV of Comparative Analysis and Reflection as the results of the surveys were presented at a ward, divisional and hospital level. At each meeting staff determined the need to make further changes and in consultation with other staff members they agreed to be responsible for making these changes. At Phase V Refining Change and Setting New Goals, the Nursing Executive, consisting of all the Nursing Directors who had participated in action cycles in Phase IV reviewed the divisional and hospital findings and agreed to support the continuance of the SCM.

### **3.3 Support Group**

To ensure the changes in the delivery of care associated with the SCM were supported, a Support Group consisting of the Director of Nursing, a representative of a ward project group, Divisional Nursing Director, medical consultant, allied health and consumer representatives and other relevant stakeholders was established. The purpose of this group was to support the ward project groups with the development, implementation and evaluation of the SCM, to advise on methods to integrate positive changes within the organisation and to communicate progress to the hospital executive. The emphasis was on smoothing the way for the project groups rather than steering them. Whilst all wards' project groups were advised of the Support Group's terms of reference, staff indicated there was no issue they considered needed to be referred to the group and, as such, no group choose to use it during the study.

### **3.4 Recruitment/Eligibility**

#### **3.4.1 Sample Size**

Using the data from the pilot wards multiple regression power analysis was undertaken using PASS version 08.0.5 statistical package. Analysis showed that a sample size of 15 staff members per ward and 21 staff members per division was required to detect a regression coefficient of 0.3 as statistically significant with  $\alpha = 0.05$  and power = 0.85 (Cohen, 1988).

#### **3.4.2 Staff**

All permanent staff working on each ward at the time of the study were considered eligible. Staff rostered on duty participated in the reflective practice exercises and solution focused sessions. For the purpose of the staff survey, names were obtained through the hospital's roster system and checked with each participating ward's CNS/CNM. Staff were invited to voluntarily and anonymously complete the questionnaires and place these in a sealed box on the ward over a 14 day period. Due to staff turnover and graduates rotating every six months each ward cohort was different at each study point. Staff who were employed casually or via a nursing agency were excluded.

#### **3.4.3 Patients**

Patients were eligible if they were in their place of residence, English speaking, and able to complete the questionnaire. Patients who were readmitted to hospital, in prison, current address not available, or who indicated they were not feeling well when contacted were not eligible.

Like the staff survey, the patient cohort was different at the two study points. While the most recent patient evaluation of hospital services undertaken by the Department of Health in Western Australia reported 97.5% eligible response rate through telephone interviews (Department of Health, 2007), this study used a combined administration mode of telephone interview or postal questionnaire.

The combined approach enabled the practicalities of limited time being available to telephone patients and provided an opportunity for patients who may not be contactable during work hours to participate in the study. This approach was used successfully for a survey of hospital in-patient experiences where patients were randomised to receive a postal questionnaire with telephone interview follow up of non respondents or a telephone interview with postal follow up of non respondents (Harris, Weinberger, & Tierney, 1997). In this study three attempts were made to contact patients for a telephone interview after which time they were sent the same questionnaire in the mail with a stamped addressed envelope inviting them to participate in the survey. Patients' names, age, gender, and residential addresses were obtained from the hospital's TOPAS system.

### **3.5 Data Instruments and Data Collection**

#### **3.5.1 Questionnaires**

Measures of staff and patient satisfaction were determined through three staff and two patient questionnaires. A specific objective of the model of care study was to improve the level of staff and patient satisfaction. Consequently, the questionnaires needed to reflect components that staff and patients consider to be relevant satisfaction measures and enable the organisation to draw comparisons with previous satisfaction survey results.

The questionnaires used for the staff surveys was adapted from the Employee Perspective Survey Tool produced by Parkside Associates (Australasia) which had been tested for reliability and validity in the Australian health care setting. Reliability coefficients in the 0.80-0.90 range and significant criterion-related validity ( $p = <0.05$ ) between 10 of the 14 individual scales and employee satisfaction were reported (Grundy, Davis-Lenane, & Sibert, 2001). The significant reliability and validity results demonstrated the tool as an effective measurement of employee perceptions, job satisfaction, organisation, support and work environment (Grundy et al., 2001). Nursing Services had used components of the tool to measure staff satisfaction in 2004 and 2006.

The tool used for patients' satisfaction was adapted from a tool developed specifically for Western Australian public hospitals by the Department of Health which has been validated by 30 focus groups across the state and reliability tested (Department of Health, 2007). No psychometric data are available.

### **3.5.2 Staff Satisfaction Questionnaire: Pre SCM**

The staff questionnaire (Appendix K) was developed during the pilot study based on responses by 43 staff in facilitated reflective practice sessions. Four themes emerged from these sessions: nursing care, patient, environment and staff. Information from each of these themes was then used to select existing questions from the hospital's Nursing Satisfaction Survey which in turn consists of questions from the Employee Perspective Survey Tool. Information from the reflective practice exercises during the pilot study to inform the selection of questions are detailed in Appendix L. In addition, specific questions relating to the model of care was added in order to evaluate changes associated with the SCM.

Staff names were obtained through the hospital's roster system and checked with each participating ward's CNS/CNM. Staff were invited to voluntarily and anonymously complete the questionnaires and place them in a sealed box on the ward over a 14 day period.

The staff questionnaire was distributed to staff during week one of the Orientation Phase.

### **3.5.3 Staff Satisfaction Questionnaire: 3 Months Post SCM**

A second staff questionnaire was administered three months after implementation of the SCM (Appendix M). This questionnaire consisted of the same questions listed in the model of care section of the pre model of care implementation questionnaire and unique questions relating to specific components of each ward's model of care. In addition, questions to assess staff views of the practice development approach were included.

### **3.5.4 Staff Satisfaction Questionnaire: 12 Months Post SCM**

A third staff questionnaire was administered 12 months post implementation of the SCM. This consisted of a combination of all questions asked in the previous two staff questionnaires.

### **3.5.5 Patient Satisfaction Questionnaire**

A patient survey to measure patient satisfaction with nursing care was developed by using information gathered from the patient interviews collected during the pilot study to select relevant questions from the Western Australia Department of Health 2006-07 Patient Evaluation of Health Service Questionnaire. Information from the patient interviews during the pilot study to inform the selection of questions are detailed in Appendix N.

Patient names were obtained through the hospital's electronic tracking of patient names and unit number system. The patient satisfaction survey was administered up to three months prior to implementing the new model of care and 12 months post implementation (Appendix O). One month prior to commencing Phase I of the study all patients who were discharged two weeks previously, or in the case of rehabilitation patients who were discharged three months previously, were contacted by telephone and invited to participate in a telephone interview. The reason for the difference in time frame for rehabilitation patients is that there are fewer patients discharged from the rehabilitation wards thus the need to increase the number of patients responding.

### **3.5.6 Patient Incidents**

The hospital maintains a clinical incident management process governed by the Western Australian Health Clinical Incident Management Policy using the advanced incident management system (AIMS) and sentinel event policy (Department of Health, 2011). The Advanced Incident Management system is used to record reported incidents. A clinical incident is defined by the Australian Council for Safety and Quality in Health Care as “an event or circumstance resulting from health care which could have, or did lead to unintended harm to a person, loss or damage, and or a

complaint” (Department of Health, 2006, p. 4). The information is coded and entered by staff in the Clinical Safety and Quality Unit.

Clinical incidents include “near misses - incidents that may have, but did not cause harm: and adverse events - an incident in which harm resulted to a person. Harm includes death, disease, injury, suffering and/or disability” (Department of Health, 2006, p. 4). Examples of clinical incidents reportable to AIMS include: medication errors, patient falls, intended self harm or suicidal behaviour, surgical operational complications, environmental hazards, problems with blood products, hospital acquired infection, incidents when a patient expresses concern with their treatment and inappropriate treatment (Department of Health, 2006).

The reporting of AIMS is voluntary and therefore does not reflect non reported incidents. Consequently there is a potential for under reporting of incidents. However, it is the only system used in all Western Australian government area health services that covers the reporting, investigation, analysis and monitoring of clinical incidents that occur as a result of provision of care. In addition, since the introduction of AIMS in the study hospital there has been an increased awareness of the need to report incidents in an effort to minimise risk by putting in place preventive measures. Patient incident data aggregated by month and by event type were extracted from AIMS for each ward for the two years prior to and 12 months post implementation of the shared care model.

### **3.5.7 Patient Complaints**

Patient complaints were used as another measure to assist with assessing the impact of the SCM on patient care. The hospital maintains a complaints management process governed by the Western Australian Health Complaint Management Policy (Department of Health, 2009). One of the components of this process is the maintenance of a database to record reported patient complaints. Complaints are recorded into the following nine categories:

Access: refers to availability of services in terms of location, waiting times and other constraints that limit the service.

Communication: refers to the quality and quantity of information provided about treatment, risks and outcomes.

Decision making: refers to the consultation with the consumer in the decision making process.

Quality of clinical care: refers to the assessment, planning, implementation and evaluation of clinical care by any health care professional.

Costs: refers to issues about costs and fee structures.

Rights, respect and dignity: refers to the consumers' mandated or legislated human and health care rights.

Grievance: refers to the individual's rights to have a timely and fair management of the complaint.

Corporate services: refers to corporate issues resulting in complaint.

Professional conduct: refer to alleged unethical and alleged illegal practices.

Complaints are entered on to the system by members of the Customer Services Department. Data on the number and type of patient complaints related to the provision of nursing care in each participating ward, aggregated in three months periods, were obtained from the database for the 12 month period prior to and post implementation of the new model of care.

### **3.5.8 Workforce Data**

Data on each ward's workforce including number, skill mix, percentage of part and full time staff were extracted from the hospital's workforce data system.

## **3.6 Statistical Methods**

### **3.6.1 Staff and Patient Demographic Data**

Demographics of staff and patients were summarised using medians and their respective interquartile range (IQR). Differences in samples at each time point were assessed using likelihood ratio chi-square for categorical data. Continuous demographic measures were tested for normality using the Shapiro Wilk test. Kruskal-Wallis was used to test for differences between samples over time.

### 3.6.2 Staff and Patient Questionnaires

Scores assessing patient and staff satisfaction as well as staff attitudes to the SCM were generated by summing the responses to a set of similarly themed questions. The mean of non missing responses within a set was substituted if one question was not answered. If more than one question in a set was unanswered the score was set to missing. “No opinion” was re-coded to zero prior to the summation so these responses made no contribution to the score. A higher score indicated a favourable response to the set of questions or theme.

Linear regressions were performed on the calculated scores to test the association with time. The interaction between time and intensity was investigated to determine if the change over time differed between the two intensities of intervention. Normality of residuals and constant variance assumptions were investigated. Chi-square or logistic regression was used when an individual item within the set was of interest, after grouping the responses into a dichotomous agree versus disagree arrangement for the latter. “No opinion” was grouped with the undesirable response option. A robust variance option, Stata’s vce cluster option, was used to adjust for the potential clustering effect of wards on staff and patients. Factor analysis was used to combine multiple responses to a series of questions into two independent factors and the Wilcoxon rank sum was used to test for differences.

### 3.6.3 Patient Incidents and Complaints

Counts of adverse incidents and patient complaints for the two year period pre SCM and 12 months post SCM, for each division, were analysed using random effects Poisson regression for each division and the hospital overall. The natural log of ward size was used as an offset to adjust for variation in bed capacity. A seasonality adjustment was made by including year as well as a month variable (coded one to six for the first six months of the year and then six to one for the second half of the year) in the incidents model. Complaints data was provided in an aggregated format (quarterly) that did not support the seasonal adjustment.

Due to variations in the implementation of the intervention, an adjustment was made for the intensity of intervention. Interactions between time and intervention were investigated. Effects were investigated at the divisional and hospital level.

The severity of incidents at each time point was calculated by generating an average severity score per incident and analysed using linear regression. An interaction term between time and division was investigated to assess the significance of differences in the change over time between divisions.

Analyses were performed using Stata 10 (StataCorp. 2007. *Stata Statistical Software: Release 10*. College Station, TX: StataCorp LP.) and the critical value of alpha set to 0.05.

### **3.7 Qualitative Analysis**

Qualitative methods consisted of including comment sections on both staff and patient questionnaires and facilitated staff reflective practice exercises during phase I and solution focused sessions during phases III, IV and V. Content analysis was undertaken for all qualitative data whereby data were coded, and themes and categories identified using NVivo 8 software.

Morse, Barrett, Mayan, Olson and Spiers (2002) equate validity and reliability with the researcher rigorously following verification strategies to produce scientific evidence. Koch and Harrington (1998) argue the rationale for unique terminology for qualitative research is to address the different concepts associated with qualitative research.

These are related to the trustworthiness of the study and involve concepts of credibility, which is similar to internal validity, dependability which corresponds with reliability and transferability which is a form of external validity (Rolfe, 2006).

In qualitative studies credibility is achieved through ensuring the context is congruent with the research focus through appropriate selection of participants, data collection, meaningful units for analysis, categories and themes (Graneheim & Lundman, 2004). Guba and Lincoln (1989) promote member checks (returning to the

participants or expert panel following data analysis) to confirm categories and themes represent the data, as the single most credible technique for establishing credibility. In contrast Sandelowski (1993) argues against forcing an artificial consensus as it undermines the meaningfulness of the findings. Sandelowski promotes issues of validity being linked to the trustworthiness of the evidence provided by the researcher with emphases placed on the credibility of the findings.

Dependability is demonstrated by the researcher being consistent in data collection and assessment of content and can account for factors that influence the research as it evolves (Graneheim & Lundman, 2004). Transferability, the third aspect of trustworthiness, is achieved when the findings can be transferred to other settings or groups (Polit & Hungler, 1999). According to Graneheim and Lundman, this is facilitated by the provision of a thorough description of the context and culture, data collection, analysis process and rich presentation of the findings.

The continued lack of consensus on a universal criteria for judging quality has led to authors advocating a shift from a single set of criteria, to the appraisal of the research report by the reader (Sandelowski & Barroso, 2002). Rolf (2006) supports this position arguing the reason no universal criteria has been reached is "symptomatic of an inability to identify a coherent qualitative research paradigm and that, in effect, such a unified paradigm does not exist outside of research textbooks" (p. 308). Rolf concluded that as each study is unique the quality of the research resides in the report and should be subject to the judgement of the reader.

A mixture of approaches were used in undertaking the content analysis of this study. Primary data were recorded onto butchers paper by the researcher then typed in full into a word document prior to being entered into NVivo 8. Categories and themes were derived using an inductive approach whereby specific data are combined into general data (Chinn & Kramer, 1999) using the following process. Firstly the unit of analysis was selected. These were the nursing staff responses to reflective practice exercises, staff survey comments and solution focussed exercises, and patient comments from satisfaction surveys. This approach is congruent with the literature where every word or phrase is transcribed (Feeley & Gottlieb, 1998). The second aspect involved shortening the text so that the meaning was preserved and is referred

in the literature as concepts of distillation (Cavanagh, 1997) and condensation (Graneheim & Lundman, 2004). During this process, the condensed text was coded into content areas that described the topic. Categories were then created by grouping data that belonged together, determined as having a similar meaning and labelled with content-characteristic words.

Using the abstraction method of generating categories (Graneheim & Lundman, 2004; Polit & Beck, 2004) as a means to formulate a generic description enables a better understanding of the phenomenon and the generation of knowledge (Cavanagh, 1997). The final stage of the content analysis was the creation of themes which according to Elo & Kyngas (2007) links the underlying meaning of the categories together. Table 3.1 illustrates the approach used to develop categories and themes for one of the reflective practice exercises (unit of analysis) for response to question: what is at the heart of your practice.

Table 3.1  
*Content analysis: What is at the heart of your practice?*

<b>Transcribe every word</b>	<b>Shorten text but preserve meaning</b>	<b>Code into text that described topic</b>	<b>Create categories</b>	<b>Create theme</b>
Best patient care Holistic care Complete work, nothing left undone	Good patient care	Patient care	Quality nursing care	Provision of good patient care
Improved patient health status & quality of life Best possible outcomes for patients Caring for patients to help them get better to go home and function so they don't return	Helping patients get better	Patient outcomes	Good patient outcomes	Provision of good patient care

### **3.8 Role of the Researcher**

The application of PAR methodology is complex and therefore requires detailing methods used by the researcher to demonstrate an understanding in its practical use and the role of the researcher.

#### **3.8.1 Ensuring Authentic Participation**

Fundamental to PAR is undertaking research with people (Heron & Reason, 2001) to address their concerns (Park, 2001) using democratic and participative processes (Kemmis, 2001). In this study a dissonance with the PAR approach existed by the fact it was not the nurses who raised concerns regarding the patient allocation model but the Nursing Executive. Therefore, it was imperative that nurses' authentic participation was achieved and this, along with responsibility for the research process, was the researcher's role. As the researcher held a position of influence within the hospital as a Nursing Director and member of the Nursing Executive, the issue of levelling power which influences participation (Park, 2001) was managed through self-reflexive processes of thoughts and actions (Wadsworth, 2001; Marshall, 2001) underpinned by genuine, respectful, inclusive engagement and being transparent in all related matters.

The opportunity to participate in all five phases of the research was afforded to all staff so that they shared responsibility for the development, implementation and evaluation of the SCM. The first phase of Rationale for Change and Orientation involved establishing a rationale for trialling the SCM as the nurses had not sought to change their method of delivering care and moving to the SCM would influence their everyday working practices. This was achieved through discussions associated with the pilot study process and findings, reviewing relevant literature, and undertaking values clarification to determine an agreed understanding of nurses' expectation of their workplace culture. This enabled discussions as to whether the actual culture in practice reflected the espoused values and thus reflected a strong culture (Denison, 1990).

Throughout the remaining phases authentic participation occurred through staff participating in solution focussed sessions, reviewing and interpreting draft versions of analysed staff and patient survey findings and discussing the impact the SCM had on patient adverse events and complaints. Following all of these activities consensus was gained and refinements made to the SCM. Staff were not involved in the analysis of the data due to practical reasons of workload, time and skill constraints.

### **3.8.2 Understanding Values Associated with the Workplace Culture**

Having determined values associated with how they wanted to practice and be supported in their learning to enable the provision of quality patient focused care, they identified behaviours associated with achieving these values. The benefit of identifying associated behaviours was that it enabled those not congruent with values to be more easily identified and subsequently easier to change (Kotter & Heskett, 1992). None of the other team based studies identified included an assessment of work culture for comparisons to be made. However, the values in this study were similar to the values clarification undertaken in an intensive care unit and nursing development unit by Manley (2004) and those nominated by Rycroft-Malone (2004) as required in a culture that promotes evidence based practice.

Changing from an established patient allocation model where staff largely worked independently to one based on supporting one another from both a workload and learning perspective was expected to require a cultural change. Manley (2004) argued that culture is created at the level of the individual, team and organisation and creates the context for practice. It therefore follows that in order to change how nurses deliver nursing care a shared understanding of the desired workplace culture using the SCM was essential.

### **3.8.3 Relationship with CNS/CNM and SDN**

The agreed values informed the second phase of Planning for Change as staff discussed how they would be incorporated into the teams' relationships. Each ward formed a project group, with all including the CNS/CNM and SDN. These roles were essential to both the ward staff and the researcher as they were responsible for supporting staff with the application of the SCM throughout the study period. Inherent in the CNS/CNM role is clinical leadership and therefore their genuine support for the SCM was essential for ward staff engagement. In addition, within each division the CNS/CNM met as a group with their respective ND and shared their experience of implementing the SCM. These meetings enabled the divisions' leadership groups to have a shared understanding of the SCM effect at both a ward and divisional level.

To overcome concerns and to manage any power issues, the researcher met regularly with each ward's CNS/CNM and SDN and over time developed close working relationships based on mutual respect and trust. The researcher acted as a resource for the CNS/CNM and SDN throughout the study assisting them in a range of activities. These involved providing educational support including power point presentations of wards' SCM and strategies to address issues associated with the SCM's application such as allocating staff and providing advice on dealing with staff resistance. On many occasions, at the request of the CNS/CNM and or the SDN, the researcher met with individuals and groups of nurses struggling with using the SCM to assist with addressing their concerns. Congruent with both PAR and ePD, power issues within the groups were managed by the researcher through inclusive engagement of all members and respecting each other's right to contribute in decision making (Kemmis, 2001; Manley & McCormack, 2003).

### **3.8.4 Solution Focused Session Technique**

The solution focused sessions enabled nurses to identify both benefits and common problems and collectively determine which of the latter they wished at each session to problem solve. Asking nurses to list the benefits they experienced using the SCM and the things they did to achieve these, a technique successfully used by Walsh et al. (2006), enabled a balanced perspective and a reminder of the intent of the SCM. Nurses commonly listed the desired benefits of sharing workload and increased learning opportunities and expressed their pleasure in assisting these to be achieved. The factors identified as contributing to achieving the benefits were subsequently incorporated into addressing identified problems.

Congruent with Walsh et al.'s (2006) approach, nurses were asked to rephrase their problem into a question enabling the focus to be on problem solving rather than apportioning blame. Problem solving included nominating a number of strategies, discussion regarding practicalities associated with these, then determining the agreed solutions and methods of communicating changes to staff not at the session. The consequences of their agreed solutions were subsequently reviewed at the next solution focused session when this particular action cycle would continue. Multiple action cycles were created and advanced at the solution focused sessions.

### **3.8.5 Creating an Environment for Rational Discourse**

The facilitator role undertaken by the researcher in the solution focused sessions was to create a social environment orientated towards nurses gaining an understanding of the impact of the SCM on their practice through critical reflection and collective agreement on a course of action to improve the SCM. Reflective discussion and knowledge is an important feature of ePD (Manley & McCormack, 2003) and PAR (Park, 2001) respectively. Elements of Heron's (1989) counselling model of facilitation that includes components of addressing feelings within the group and providing structure and planning, and Titchen's (2004) model of critical companionship of empowering nurses to draw on their experience with the SCM to improve it were incorporated. The Heron's counselling model was the main model used as these elements were incorporated with all participating staff. The critical companionship model was the basis of the relationship with the CNS and CNM. The

researcher had a good working knowledge of both the CNS and CNM roles having recently worked with them to assist them to redefine their role as part of a service redesign initiative and previously having initiated and led the research that resulted in the CNM role being introduced. The researcher worked with each CNS/CNM to help them, and they in turn supported their staff, in identifying and addressing issues to optimise benefits associated with the SCM.

During these sessions, in particular following the first week of implementing the SCM, a range of negative views and feelings were expressed, often associated with distress resulting in outbursts of tears or angry comments. Given the disruption to their daily working practices caused by the SCM, this response was expected and aligned with the first stage of Bridges' (2003) transition management theory of *Endings*. These emotions were associated with the ending of what they knew (patient allocation model) as they came to terms with their loss. This situation also reflected Fay's (1987) critical social science theory of crisis. The crisis was caused by the changing skill mix of the workforce necessitating the existing patient allocation model of care to be changed. Fay argued that it was through becoming aware and understanding one's response to a crisis enabled individuals to be motivated to act and empowered to make positive changes. In this circumstance, nurses challenged their thinking and assumptions about developing and using the SCM to deliver patient care.

The complexity of the group dynamics were challenging and it was the researcher's role to manage these so that participants felt supported and respected (Guba & Lincoln, 1989; Harvey et al., 2002). Bridges (2003) recommended tolerating these reactions which is consistent with the PAR and ePD approach of being empathetic and patient (McCormack & Garbett, 2003), but ensuring action taken is not distorted by the emotion (Heron & Reason, 2001). According to Harvey et al. (2002), in addition to having good interpersonal, communication and group management skills, the facilitator needs expertise to recognise and respond to requirements of different situations. This aspect was important as the group dynamics changed as staff adjusted to using the SCM and the emotions expressed were associated with their passion for making practice improvements linked to the SCM.

Having created a space for critical dialectic discourse through the solution focused sessions, such spaces could only be used when the nurses wanted and felt able to share their views. Consequently, the researcher needed to foster an environment conducive to this function. The capacity to do this was enabled through the shared repertoire developed between the researcher and nurses while developing the SCM, by the researcher working clinically as a member of the nursing team on 13 wards (intensive implementation), as a resource for the application of the SCM on eight wards and through numerous informal discussions.

The researcher chose to work clinically as part of the team the first week of the SCM implementation, to demonstrate a preparedness to experience firsthand the impact of the SCM and to be available throughout the shift to support nurses as required. However, this approach was not sustainable due to competing demands associated with the research process. The adoption of the less intensive approach - no longer working clinically as a member of the team but being available as a resource for the application of the SCM - meant less time was spent on the wards. However, time was spent with each team at the start of each shift and during the shift to respond and assist with any queries associated with the SCM. Interestingly, no statistically significant association was found with working clinically as a member of the team, compared to being available at regular intervals as a resource for the application of the SCM. The lack of a statistical significant difference between these two methods of intensity indicates that either approach was appropriate. It could be that the relationship between the researcher and nurses on all 21 wards was developed to the same level so that staff could comfortably seek and receive support.

### **3.9 Ethical Considerations**

Ethical approval was obtained from the study hospital's Nursing Research Committee which is a subcommittee of the hospital's ethics committee and from Curtin University's Human Research Ethics Committee (Appendix P).

#### **3.9.1 Staff**

The philosophy of collaboration associated with PAR and ePD which reflects Heron and Reason's (2001, p.127) view of undertaking research "with" people as

opposed to "on" people influences how traditional ethical issues of informed consent, right to withdrawal, confidentiality and anonymity and protecting people from harm (Coghlan & Brannick, 2001) are managed. Intertwined with these issues are the ethical aspects that are unique to action research, concerning the relationship of power between the researcher, participants and other stakeholders, along with the cultural and political influences and the impact caused through changing practice (Lathlean, 1996). It is the researcher's responsibility to ensure a democratic approach whereby decisions and actions taken in response to these ethical issues are embodied within the collaborative process (Brydon-Miller, 2007). In this study the framework for ensuring genuine collaborative process has been described in sections 3.9.1 for ensuring authentic participation; 3.9.2 understanding the workplace culture; 3.9.3 the relationship with the CNS/CNM/and SDN; 3.9.4 solution focused session technique and 3.9.5 creating an environment for rational discourse.

During these processes, collaboration was gained through full disclosure of all study information, transparent application of methods and processes, and nurses' involvement in decision-making process in all five phases. Using these methods ensured staff were fully informed and they had power to control and influence all study phases demonstrated by their collective agreement to make numerous changes to the SCM. This assured nurses ethical rights of being informed and issues of power were protected. Their active participation at these sessions and their choosing to undertake the surveys indicated their tacit consent to participate. However, while their response to participate in surveys can be regarded as their own choosing, their participation in using the SCM and in attending the meetings and solution focused sessions to develop and modify the SCM was directly influenced by the expectation and requirement from the Nursing Executive that they would participate. This impinged on their ethical right to formally consent to participate and right to withdraw. However, nurses choose whether or not to attend the meetings and solution focussed sessions and there were no consequences for those who did not attend.

Participation in organisational change because of a directive from senior management has been reported as a reality in other nursing action research studies (Lofman, Pelkonen & Pietila, 2004; Williamson & Prosser, 2002) but described by others as forced cooperation (Myers, 1993) or a form of subtle exploitation (Hart &

Bond, 1995). From an ethical perspective this raises the dilemma of whether the rights and responsibilities of a Nursing Executive to ensure the most appropriate nursing delivery model that meets its nursing levels of experience and skill set overrides the rights of nurses to choose whether or not to develop and trial the new model of care. Or another ethical dilemma whereby nurses wanting to use the SCM to assist with improving their work practices rights are being disregarded by those choosing not to use the SCM when the model requires both participants to experience the benefits. Both of these ethical dilemmas were anticipated by the researcher and was precisely the reason PAR and ePD was selected as they are recognised as methods to ensure democratic, authentic and collaborative participation (Heron & Reason, 1997; Manley & McCormack, 2003) and can redress the balance of power by participants contributing to decisions that affect them (Reason, 2006). Lofman, Pelkonen and Pietila argue once the process of organisational change begins the right to withdraw may be impossible to exercise.

Despite the Nursing Executive directive, nurses did exercise their right not to participate by choosing not to, or stopping attending any meetings related to the study or by not fully adhering to the SCM model. Their lack of participation at meetings was respected and in fact represented very few staff. However, their withdrawal from fully using the SCM was more problematic, because of the negative impact on their colleagues. Nurses raised this issue at the solution focussed sessions and ward meetings as they wanted to find ways to engage with these staff so that they would work with them using the SCM. The impact of this engagement combined with regular modifications to the SCM to meet each wards requirements contributed to less resistance to using the SCM overtime. In achieving this outcome, staff demonstrated their empowerment to voluntarily engage with staff to obtain their support to use the SCM through democratic agreement for their mutual benefit.

The researcher's role in this process was to ensure all staff were supported and respected and thereby dealt with ethical issues of protecting participants from harm and maintaining their confidentiality. It is also the researcher's role to maintain anonymity where possible. The nature of this study, and is common in action research (Brydon-Miller, 2007) is that it was obvious who was and wasn't participating and with the exception of their survey responses information was openly disclosed at ward

meetings. Therefore, it was not possible to guarantee confidentiality and anonymity in this context. The impact of this reality on participants in action research such as perceived political consequences (Williamson & Prosser, 2002), emotional and social affects (Lofman, Pelkonen & Pietila, 2004) were managed in this study through the creation of an environment conducive for rational discourse where nurses respectfully discussed their views and collectively agreed on a course of action.

Integral to reconciling the ethical considerations posed by undertaking PAR and ePD in this study was in the strength of the collaboration between the researcher and the participants underpinned by their mutual ethical values of transparency, openness, caring, empathy, negotiation and responsibility.

### **3.9.2 Discharged Patients**

Prior to the telephone interviews taking place, which were all undertaken from the hospital, informed consent was sought from each participant. This was achieved by explaining the purpose of the study, informing participants that they could stop the questionnaire and withdraw from the study at any time. Participants were also advised all personal identifiers would be removed from their response at the end of the interview. In addition, they were informed of the contact details for the hospital's Nursing Research Committee Chairman should they wish to raise any concerns regarding how the research was being conducted. Participants were then asked if they would like to participate in answering the telephone questionnaire. If the participants chose to proceed the researcher or assistant administered the telephone questionnaire.

Those who received the questionnaire by post also received a cover letter (Appendix Q) explaining the same ethical details associated with gaining consent and participating. Those who chose to participate completed and returned the questionnaire using the stamped addressed envelope provided while those who chose not to participate did not complete and return the questionnaire.

While the questionnaire was not expected to cause any harm by participation, if the patient reported, or the researcher or assistant considered a participant was becoming anxious as a result of the questionnaire then the interview was ceased immediately. The researcher or assistant administering the questionnaire asked the

participant if she could assist them to alleviate their anxiety. In addition, if they indicated they wanted information to be reported to the hospital then the researcher informed the customer services department of the details of the participant's concern.

### **3.9.3 Data Storage**

Throughout the period of the research all paper and electronic copies of staff and patient questionnaires, notes from staff reflective practice and solution focussed sessions were securely stored in a locked filing cabinet, and in a password protected computer, respectively, in the researcher's office at the study hospital. The returned staff and patient questionnaires did not have any names on them and completed surveys from patients' telephone interviews were de-identified at the end of the interview.

These security measures have been maintained since completion of the research and will continue for a period of five years. After which time, if the data is no longer required, will be destroyed. Any publication of results from this study will occur in a manner where no staff member or patient can be identified.

## **3.10 Chapter Summary**

The aim of the study was to implement a SCM in 21 wards in a tertiary hospital to determine the impact on staff workload, team approach to organisation and provision of nursing care, culture of support, nursing rounds, bedside and board handover, and patient satisfaction, patient complaints and adverse incidents. The philosophical base for the study was critical social theory and the methodology was PAR, underpinned by principles and processes of ePD.

The research process was undertaken over three stages consisting of five phases. The pre SCM stage incorporated Phase I of rationale for change and orientation, and Phase II - planning for change. During these phases baseline information was gathered to justify trialling the SCM and to inform the SCM. The existing model of care was reviewed and each ward's version of the SCM was developed and communicated to staff. The implementation stage consisted of Phase III - process of actioning and reviewing change in the first two months when the SCM

was implemented. Staff were supported in these phases by the researcher either working clinically as one of the team members responsible for patient care or being available as a resource for staff, but not a member of the team providing patient care. Staff participated in reflective action cycles through solution focused sessions to consensually determine practice changes for the SCM. The third stage - post implementation involved Phase IV - comparative analysis and reflection and Phase V - refining change and setting new goals. These phases occurred three and 12 months post implementation of the SCM and involved participating in solution focused sessions, administration and analysis of questionnaires, and analysis of patient incidents and complaints. Twelve month analysis was compared to baseline and three monthly measures at ward, divisional and hospital level.

Validated staff and patient questionnaires used in the Western Australian public health care system were used along with the hospital's AIMS and patient complaints reporting system. A range of statistical methods were used for quantitative analysis and content analysis for qualitative data. Ethical considerations included informed consent, confidentiality and anonymity, and collaborative ownership by the researcher and participating staff.

Chapter Four describes the impact of the SCM on staff workload, team approach to organisation and provision of nursing care, culture of support, nursing rounds, bedside and board handover using quantitative and qualitative analysis.

## CHAPTER FOUR

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### ***IMPACT OF SHARED CARE MODEL ON NURSING STAFF***

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This chapter begins by presenting the findings of the pilot study then outlines the results of the qualitative and quantitative analysis from the staff solution focused sessions and staff surveys for the main study. The analysis enabled demographic characteristics to be determined, established staff values and investigated the impact the SCM had on staff workload, team approach to provision of nursing care, culture of support and specific interventions of nursing rounds, bedside and board handover. Each area that investigated the impact of the SCM is reported in the sequence the study was undertaken, commencing with the qualitative analysis of the solution focused sessions followed by qualitative and quantitative analysis of the staff surveys. Each of the variables investigated concludes with a summary of findings.

#### **4.1 Pilot Study**

The comparative measure of staff satisfaction was obtained through analysis of the staff surveys administered in the first month following the reflective practice exercises and three months post implementation of the SCM. The response rate for the first survey was 30% (n=55) compared with 28% (n=42) for the second. Despite the low response rate there was no value in repeating the survey, in an effort to increase the response rate, as the survey had been extensively promoted. Two statistically significant associations were found. Firstly for participation which favoured the patient allocation model ( $p = 0.033$ ). The participation scale consisted of two questions relating to staff involvement in influencing policies and involvement in decision making. Secondly for the question related to team approach, within the model of care scale, there was a statistical significant difference of ( $p = 0.032$ ) favouring the SCM. Given that the response rate was low no conclusions were drawn from these findings. However, as the results were similar to the baseline survey this indicated little value in repeating the whole survey at three months.

The comments from 40 staff who attended the various solution focused meetings were most useful. Staff reported at three months that the SCM had led to

increased support among staff by assisting with prioritising care, creating educational opportunities, and reducing manual handling. They also reported improvements in communication regarding patient management among staff, patients and health care team, nursing care was continued during breaks, fewer call bells being rung and the shift coordinator was interrupted less. These findings were consistent with the general principles used to guide the development of the model of care. However, staff also reported concerns regarding difficulties working with specific partners, difficulties in remembering patient details, and increased accountability and responsibility for patient care.

In the three month survey a practice development scale was included to determine the level of staff satisfaction with the approach used which scored a satisfaction level of 78%. Using the two pilot wards' data, sample size calculations estimated that 25 responses for each ward for baseline and 3-month follow-up will have more than 80% power to detect a 10% change in satisfaction with the implementation of the new model of care.

The findings were reported to the wards and the NEC. Support was obtained from NEC to proceed with the main study and the pilot wards continued to use the SCM. The NEC agreed that each ward would develop their own model of care based on the SCM principles. However, as they believed it was important from an organisational perspective to have one name that represented its model of care, the term SCM was accepted as the generic term for the development of the model of care

### **4.1.1 Summary of Pilot Study**

The response rate was insufficient to draw conclusions from the quantitative analysis. However, findings indicated a high level of satisfaction with the approach used. Qualitative findings from the pilot study indicated the SCM supported staff in the delivery of nursing care and highlighted specific concerns associated with the SCM. The term SCM was adopted by the NEC and approval obtained to proceed with the main study.

## 4.2 Main Study

### 4.2.1 Demographics

Over the period of the main study 2231 surveys were distributed over the three study time points to nursing staff and 1006 were returned with a response rate of 45%. Of the 2231 surveys, 738 were sent pre SCM and 366 returned (49%); 743 were sent three months following implementation of the SCM and 313 returned (42%), and 750 were sent 12 months post implementation of the SCM and 327 returned (44%). Table 4.1 shows the hospital and divisions' categorical demographics of the nursing staff for each of the three survey periods. Not all respondents completed all the demographic questions resulting in up to 14% missing demographic data. Of the 1006 respondents who chose to complete the demographic questions, there were 637 (63%) registered nurses, 109 (11%) first or second year graduates and 125 (12%) enrolled nurses with a median age of 34 years (IQR= 18). At each time point the structure of the sample was similar. No statistically significant difference was found for the hospital and divisions' categorical demographics. Due to maintaining anonymity of respondents, the survey did not record the nurse's level when distributed; therefore, it was not possible to determine if there was a response bias. However, the hospital's workforce statistics show that for the study period there was a similar proportion of registered nurse first and second year graduates of 11%-12% and enrolled nurses 13% decreasing to 11%, and the remaining were registered nurses of 76%-77% (Nursing Workforce, 2008-2010). The majority of respondents were female  $n = 806$  (80%), (males  $n = 71$ , 7%) and the majority reported they worked full time  $n = 623$  (62%) (part time  $n = 310$ , 31%). These results are similar to the hospital workforce statistics for the study period as 88% of nurses were female and 58% worked full time (Nursing Workforce, 2008-2010).

The median length of time working on the ward when surveyed was 2 years (IQR= 4.6), median length of time employed at the hospital was 3.5 years (IQR=7), and median length of time nursing was 8 years (IQR= 16). Of the 965 respondents who answered the question relating to leaving the ward, 282 reported they were planning to leave. Of the 282, 18 (6%) reported they were retiring, 100 (35%) were resigning, 55 (19%) were rotating to another ward and 120 (42%) did not indicate their reason for leaving the ward.

Table 4.1  
*Hospital and Divisions' Demographic Categorical Characteristics at each Study Point*

Variables	Hospital							Medical Specialties						
	Pre MOC (N=366)		3/12 post MOC (N=313)		12 month post MOC (N=327)		P value	Pre MOC (N=100)		3/12 post MOC (N=84)		12 month post MOC (N=99)		P value
	N	(%)	N	(%)	N	(%)		N	(%)	N	(%)	N	(%)	
First & Second Year Graduate Registered Nurse	37	(10.0)	38	(12.0)	34	(10.4)	<b>*0.412</b>	15	(15.0)	8	(9.5)	7	(7.0)	0.327
Enrolled Nurse	39	(10.6)	42	(13.4)	44	(13.4)		11	(11.0)	16	(19.4)	14	(14.1)	
Full Time	207	(56.5)	170	(54.3)	188	(57.5)	<b>0.663</b>	68	(68.0)	45	(53.6)	61	(61.6)	0.165
Female	294	(80.3)	253	(80.8)	259	(79.2)	<b>0.620</b>	82	(82.0)	68	(81.0)	78	(78.7)	0.975
Employed at Hospital Previously	74	(20.2)	59	(18.8)	49	(14.9)	<b>0.366</b>	16	(16.0)	24	(28.6)	15	(15.1)	0.076
Intend to Leave Ward Next 12 Months	109	(29.8)	83	(26.5)	90	(27.5)	<b>0.877</b>	35	(35.0)	25	(29.7)	28	(28.2)	0.693
	Rehabilitation and Orthopaedic							Surgical						
	Pre MOC (N=104)		3/12 post MOC (N=74)		12 month post MOC (N=113)		P value	Pre MOC (N=112)		3/12 post MOC (N=110)		12 month post MOC (N=80)		P value
	N	(%)	N	(%)	N	(%)		N	(%)	N	(%)	N	(%)	
First & Second Year Graduate Registered Nurse	7	(6.7)	11	(14.80)	14	(12.3)	0.177	12	(10.7)	18	(16.3)	11	(13.7)	0.460
Enrolled Nurse	19	(18.2)	11	(14.8)	18	(15.9)		9	(8.0)	10	(9.0)	11	(13.7)	
Full Time	48	(46.1)	34	(45.9)	62	(54.8)	0.144	65	(58.0)	65	(59.0)	46	(57.5)	1.000
Female	82	(78.8)	52	(70.2)	86	(76.1)	0.361	94	(83.9)	98	(89.0)	69	(86.2)	0.583
Employed at Hospital Previously	29	(27.8)	12	(16.2)	23	(20.3)	0.409	21	(18.7)	18	(16.3)	7	(8.7)	0.286
Intend to Leave Ward Next 12 Months	19	(18.2)	19	(25.6)	26	(23.0)	0.109	41	(36.6)	30	(27.2)	29	(36.2)	0.405
	Cancer and Neurosciences							Critical Care						
	Pre MOC (N=22)		3/12 post MOC (N=20)		12 month post MOC (N=14)		P value	Pre MOC (N=28)		3/12 post MOC (N=25)		12 month post MOC (N=21)		P value
	N	(%)	N	(%)	N	(%)		N	(%)	N	(%)	N	(%)	
First & Second Year Graduate Registered Nurse	3	(13.6)	1	(5.0)	1	(7.1)	0.595	0	(0.0)	0	(0.0)	1	(4.7)	0.051
Enrolled Nurse	0	(0.00)	1	(5.0)	0	(0.0)		0	(0.0)	4	(16.0)	1	(4.7)	
Full Time	11	(50.0)	12	(60.0)	8	(57.1)	0.575	15	(53.5)	14	(56.0)	11	(52.3)	0.958
Female	19	(86.3)	17	(85.0)	12	(85.7)	0.992	18	(64.2)	18	(72.0)	14	(66.6)	0.950
Employed at Hospital Previously	4	(18.1)	5	(25.0)	2	(14.2)	0.870	4	(14.2)	0	(0.0)	2	(9.5)	0.061
Intend to Leave Ward Next 12 Months	9	(40.9)	6	(30.)	4	(28.5)	0.417	5	(17.8)	3	(12.0)	3	(14.2)	0.881

Note. \*p value for three categories of nurses level.

Table 4.2 shows the hospital and divisions' continuous demographics of the nursing staff for each of the three survey periods. Not all respondents completed all the demographic questions. No statistical significant difference was found between the time periods for the demographic continuous variables for the hospital and three of the five divisions. A statistically significant effect was found for the reduction in all length of time variables in the Rehabilitation/Orthopaedic Division: length of time on ward ( $p = 0.015$ ); length of time at hospital ( $p = 0.011$ ) and length of time nursing ( $p = 0.019$ ). While in the Surgical Division a significant effect was found for the increased length of time on ward ( $p = 0.034$ ).

Due to the large amount of missing data for length of time employed at the hospital ( $n=296$ ), time employed on ward ( $n=277$ ), and the level of the nurse ( $n= 456$ ), in order to avoid introducing a sample size bias these variables were not used in the analytic models to investigate their influence on the model of care managing workloads.

Table 4.2

*Hospital and Divisions' Demographic Continuous Characteristics at each Study Point*

<b>Hospital</b>										
Years	Pre MOC			3/12 post MOC			12 month post MOC			P
	N	Median	IQR	N	Median	IQR	N	Median	IQR	
Age	243	34	18	193	33	17.0	196	34	16.5	0.199
Time on ward	210	2.0	4.6	217	1.5	3.5	184	1.5	4.0	0.888
Time at hospital	275	3.5	7.0	210	3.0	4.5	219	3.0	5.5	0.642
Time nursing	273	8.0	16	229	7.0	12.0	219	8.0	16	0.197
<b>Medical Specialties</b>										
Years	Pre MOC			3/12 post MOC			12 month post MOC			P
	N	Median	IQR	N	Median	IQR	N	Median	IQR	
Age	70	38	17	54	38	18.0	56	36	14	0.462
Time on ward	67	1.0	3.7	60	1.0	3.5	59	1.5	3.5	0.749
Time at hospital	76	3.0	4.0	62	4.0	5.0	67	3.0	4.5	0.836
Time nursing	77	6.0	12	65	8.0	10.0	66	8.2	12	0.575
<b>Rehabilitation and Orthopaedic</b>										
Years	Pre MOC			3/12 post MOC			12 month post MOC			P
	N	Median	IQR	N	Median	IQR	N	Median	IQR	
Age	69	46	16	39	45	20.0	65	40	19	0.173
Time on ward	60	4.0	8.2	42	2.7	5.5	57	2.0	4.5	0.015
Time at hospital	80	8.5	14.7	40	4.0	8.6	70	4.0	9.0	0.011
Time nursing	73	20	19.5	46	15	22.0	74	15.6	20	0.019
<b>Surgical</b>										
Years	Pre MOC			3/12 post MOC			12 month post MOC			P
	N	Median	IQR	N	Median	IQR	N	Median	IQR	
Age	80	29	9.0	72	29	8.0	55	26	11	0.446
Time on ward	65	0.05	1.7	82	1.0	3.0	51	1.5	2.5	0.034
Time at hospital	90	2.0	5.0	77	2.0	4.0	61	2.5	4.5	0.725
Time nursing	90	5.0	8.0	86	4.7	7.0	58	4.5	9.0	0.976
<b>Cancer and Neuroscience</b>										
Years	Pre MOC			3/12 post MOC			12 month post MOC			P
	N	Median	IQR	N	Median	IQR	N	Median	IQR	
Age	9	32	16	11	40	17.0	8	27	18.5	0.679
Time on ward	6	3.2	5.2	14	3.2	4.2	6	1.0	0.25	0.566
Time at hospital	11	3.0	2.75	12	4.0	3.0	5	1.0	2.0	0.286
Time nursing	12	4.2	6.2	16	8.0	11.0	8	4.5	5.0	0.491
<b>Critical Care</b>										
Years	Pre MOC			3/12 post MOC			12 month post MOC			P
	N	Median	IQR	N	Median	IQR	N	Median	IQR	
Age	15	33	9.0	17	32	10.0	12	38	16.5	0.363
Time on ward	12	4.5	5.7	19	3.0	4.0	11	6.0	8.0	0.317
Time at hospital	18	5.0	7.5	19	5.0	4.0	16	5.0	6.5	0.551
Time nursing	21	10	10	16	8.0	10.7	13	11.5	11	0.521

### 4.3 Reflective Practice

During phase I of the study staff participated in reflective practice exercises. These involved asking the staff three questions. These were: What is at the heart of your practice?; If I was a new nurse starting on ward X what would I want to be assured off?; and If I were a patient in ward X what would I want to be assured off. Results from the content analysis of their responses are presented in Tables 4.3, 4.4, and 4.5.

#### 4.3.1 Heart of Practice

Two themes emerged from the content analysis of all staff responses to each ward's reflective practice exercise to answer the question: *What is at the heart of your practice?* These were provision of good care, and culture of learning and development as shown in Table 4.3.

Table 4.3  
*Themes and Categories for Heart of Practice*

<b>Theme</b>	<b>Number</b>
Provision of good patient care	
<b>Categories</b>	
Quality nursing care	103
Good patient outcomes	22
Family involvement and support	11
Provision of patient education	5
Discharge planning	5
<b>Theme</b>	
Culture of Learning and Development	
<b>Categories</b>	
Support for development of self and colleagues	53
Teamwork	35
Education and training	32

Note. Number refers to each time item was raised by each group of nurses.

#### **4.3.1.1 Provision of Good Patient Care**

The emphasis throughout each of the five categories were the provision of quality patient care to ensure safe and effective nursing care. Nurses recognised and valued their role in contributing towards good patient outcomes and identified the importance of family involvement. Terms most frequently used to identify this theme were: *“deliver the best possible care: safe care,” “improve patients’ health status and quality of life,” “educate patients: responsibility for care,”* and *“provide family support.”* One nurse captured the intent of the theme by stating *“to make a difference to patients and families and educate both staff and patients in order to provide good care.”*

#### **4.3.1.2 Culture of Learning and Development**

The key components of this theme were the recognition of education being integral to the provision of quality patient care, their responsibility to assist staff with their professional development and the benefit of team work. Common terms used to capture this theme were:

*“education to provide good care,” “education for colleagues,”* and *“team work and the provision of a high standard of care.”* One nurse elaborated on how nurses’ learning and development could be supported by each other: *“teach others, provide direction, act as a resource and answer questions, thus helping fellow nurses.”*

#### **4.3.2 New Nurse Wants to be Assured**

The theme of culture of Learning and Development identified for the heart of practice question also emerged from the content analysis of responses to the third question asked in the reflective practice exercise: *If I was a new nurse starting on Ward X what would I want to be assured of?* Another theme of healthy environment that supports practice was also identified as shown in Table 4.4.

Table 4.4  
*Themes and Categories: Assurance for New Nurse*

<b>Theme</b>	<b>Number</b>
Culture of learning and development	
<b>Categories</b>	
Support from colleagues and senior staff	70
Learning opportunities	39
Formal education and resources	16
It's okay to ask questions	16
Ward orientation	13
<b>Theme</b>	
Healthy environment that supports practice	
<b>Categories</b>	
Friendly & welcoming staff	23
Good communication among staff	15
Manageable workloads	12
Good rostering	8
Available and working equipment	3

Note. Number refers to each time item was raised by each group of nurses.

#### **4.3.2.1 Culture of Learning and Development**

The majority of comments were categorised into support from colleagues and senior staff, and learning opportunities. The essence of all of these comments reflected the necessity to ensure the ability to provide safe quality patient care through the provision of learning opportunities by colleagues. Common terms used to indicate these categories were:

*“to know what to do, to feel safe,” “support and someone to ask,” and “learning opportunities and time to learn.”*

#### **4.3.2.2 Healthy Environment that Supports Practice**

Comments from the healthy environment theme highlighted the importance of friendly and welcoming staff with groups stating they wanted: *“approachable people*

to work with,” nurses to have “good communication skills,” and manageable workloads by the shift coordinator ensuring “allocation to match skill mix.”

### 4.3.3 Patient Assured

The content analysis of all staff responses to each ward’s reflective practice exercise to answer the question: *If I were a patient in Ward X what would I want to be assured of?* revealed the same theme, but from a patient’s perspective, of provision of good nursing care as identified in the heart of practice exercise, of provision of good patient care. Effective management of care theme also emerged as shown in Table 4.5.

Table 4.5  
*Themes and Categories for Patient Assured*

<b>Theme</b>	<b>Number</b>
Provision of good nursing care	
<b>Categories</b>	
Good and safe care	30
Competent nurses	28
Treated with respect and dignity	22
Respond to call bells	7
Pain management	5
<b>Theme</b>	
Effective management of care	
<b>Categories</b>	
Kept informed of care	28
Good communication among health care team	13
Efficient service	6
Patient advocate	4

Note. Number refers to each time item was raised by each group of nurses.

#### 4.3.3.1 Provision of Good Nursing Care

This theme reflected the inherent relationship between the provision of quality care and competent nursing staff as nurses commonly reported: “for patients to get

*good care, nurses have to be skilled and competent.*” In addition, groups emphasised the need to ensure patients were treated with respect, as individuals and be involved with their management by making time to “*sit down and listen to what [patients] have to say and answer questions.*”

#### **4.3.3.2 Effective Management of Care Theme**

Integral to effective patient management was good “*communication between doctors and nurses about patient’s progress,*” and a responsibility to “*inform patients about their care,*” including “*treatment options and test results*”.

### **4.4 Summary of Reflective Practice**

Content analysis of reflective practice exercises for groups of staff on all wards demonstrated nursing staff valued their role in contributing towards good patient outcomes, through the provision of competent and respectful patient care, enabled through a supportive learning environment.

### **4.5 Survey Scales**

Table 4.6 shows the linear regression results of the survey scales for the pre and 12 months post implementation of the SCM and the different methods of implementation for six of the nine scales surveyed. The participation scale was the only scale where a statistically significant association was found over time. The scores for the group receiving the intensive intervention dropped by a larger amount than the non intensive group ( $\beta = -0.87$ ,  $p = 0.01$ ), over time, and they also had significantly higher scores at baseline ( $\beta = 0.76$ ,  $p = 0.009$ ).

The remaining three survey scales of model of nursing care, staff support and team work/co-workers are the subject of subsequent qualitative and quantitative analysis to investigate the SCM impact.

Table 4.6

*Linear Regression of survey scales: Pre and post SCM, Implementation Type and their Interaction*

Survey scales	Coef	95 % CI	P
<b>Recognition</b>			
12 months	0.87	[-1.8, 0.1]	0.085
Intensive implementation	0.64	[-0.8, 2.1]	0.38
Intensive implementation <u>X</u> 12 months	0.6	[-0.8, 2.2]	0.37
Constant	19.04	[17.8, 20.2]	<0.001
<b>Training/Education</b>			
12 months	-0.75	[-1.9, 0.4]	0.21
Intensive implementation	-0.13	[-1.9, 1.65]	0.88
Intensive implementation <u>X</u> 12 months	0.42	[-1.3, 2.17]	0.62
Constant	25.3	[23.8, 26.7]	<0.001
<b>Work Environment</b>			
12 months	-0.67	[-1.6, 0.3]	0.175
Intensive implementation	-1.52	[-3.1, 0.07]	0.06
Intensive implementation <u>X</u> 12 months	1.17	[-0.1, 2.4]	0.075
Constant	15.58	[14.6, 16.6]	<0.001
<b>Image</b>			
12 months	0.550	[-0.7, 0.8]	0.89
Intensive implementation	0.09	[-0.9, 1.1]	0.85
Intensive implementation <u>X</u> 12 months	-0.77	[-2.0, 0.4]	0.21
Constant	12.62	[12.04, 13.2]	<0.001
<b>Staffing</b>			
12 month	-0.36	[-1.6, 0.8]	0.54
Intensive implementation	-1.71	[-3.9, 0.5]	0.13
Intensive implementation <u>X</u> 12 months	1.21	[-0.9, 3.3]	0.25
Constant	16.48	[14.6, 18.3]	<0.001
<b>Participation</b>			
12 month	-0.06	[-0.5, 0.4]	0.78
Intensive implementation	0.76	[0.2, 1.3]	0.009
Intensive implementation <u>X</u> 12 months	-0.87	[-1.5, -0.2]	0.01
Constant	5.35	[4.9, 5.7]	<0.001

Note. X indicates interaction of time and intensity at 12 months.

## 4.6 Impact of Shared Care Model on Staff Workloads

To determine the impact of the shared care model on staff workloads, content analysis of the qualitative data from the solution focused sessions and staff survey was undertaken. In addition, quantitative analysis of two individual staff survey questions, one from the model of care scale and the other from the staff support scale, related to manageable workloads were investigated using logistic regression models.

### 4.6.1 Staff Workload: Pre SCM

Table 4.7 shows the themes and categories resulting from the staff survey comments relating to manageable workloads prior to the SCM being implemented, when all wards were using the patient allocation model.

Table 4.7  
*Theme and Categories for Manageable Workloads Pre SCM*

<b>Theme</b>	<b>Number</b>
Heavy workloads	
<b>Categories</b>	
Staff shortages	23
Imbalance between patient allocation and acuity	15
Inexperienced staff	9
Staff not available to help	3

Note. Number refers to the number of times these were reported by individual nurses.

The theme of heavy workloads was determined through staff articulation of unrealistic workload demands in each of the four categories. For example in the staff shortage and imbalance between patient allocation and acuity categories respectively comments of:

*“Severely understaffed, heavy workloads. Increased stress especially in graduate nurses.”*

*Current model leads to excessive peak workload demand on staff e.g.0800 hrs: 4 pts may need toilet assistance simultaneously! Skill mix with nursing assistants would, I believe reduce the workload peak demand on*

*individual staff i.e. by focusing on set of tasks/skills and medications rather than attempting to multi-skill. The temptation to interrupt medication rounds to attend to dignity needs e.g., toileting, has risk potential (medication errors/omissions and excessive stress risk to staff-which can impact negatively on care standards/direct pt care). Safer to do 8 pt medications uninterrupted than 4 pt medications with multiple pt demands.*

Staff comments also illustrated some of the problems associated with using the patient allocation model with an inexperienced workforce whereby staff may not have the expertise to manage the allocated patient care requirements and insufficient support is available. This is captured in the following comments for the categories of imbalance between patient allocation and acuity, inexperienced staff and staff not available to help:

*“At times some coordinators do not appear to assess workloads carefully and allocation can be uneven, poorly matched with staff abilities and compromising care. Sometimes I feel they just don't get it!”*

*“Staffing mix is terrible. Need more experienced staff to back up shift coordinator. “Often shift coordinator is the only experienced nurse, out of hours in particular. I think everyone is exhausted.”*

*“Patient allocation creates unequal workloads-often hard to find someone to help as they are concerned mainly with their patient load and unable to assist.”*

#### **4.6.2 Staff Workload: First Two and Three Months Post SCM**

Content analysis of both the solution focused sessions and staff surveys conducted in the first two and three months respectively post SCM showed the complexities of the change management process as staff adjusted to using the SCM. Two distinctive themes of increase and decrease or sharing of workload emerged.

Table 4.8 show the themes and categories resulting from the solution focused sessions relating to manageable workloads when working in pairs or teams for the two study points following implementation of the shared care model.

Table 4.8  
*Themes and Categories for Managing workloads Working in Pairs or Teams*

<b>Theme and Categories</b>	<b>First 2/12 post SCM</b>	<b>First 2/12 solutions</b>	<b>3/12 post SCM</b>	<b>3/12 post solutions</b>
<b>Theme</b>				
Increased workload				
<b>Categories</b>				
Increased responsibility and workload for senior nurses	19	15	2	
Staff dependent	18	8		
Unbalanced skill mix to enable pairing	14	6		
More patients to look after	7	43		1
Geographical set up	7			
Not sharing workload	6	7		
Staff shortages	6	6		
<b>Theme</b>				
Sharing workload				
<b>Categories</b>				
Improved distribution of workload	29		9	
Less demands on shift coordinator	8			
Help with manual handling	6		1	
Assistance with checking charts and medications	6			

#### **4.6.2.1 Increased Workload**

Staff identified the main cause of an increased workload was related to requirements for paired or team nurses to be responsible for combined patient care requirements. This was compounded by the lack of experienced staff to enable appropriate skill mix and added responsibilities of the experienced nurses.

#### **4.6.2.2 Solution Focused Sessions**

In the facilitated solution focused sessions concerns were raised regarding the increased workload caused by increased responsibility placed on the senior nurses.

This was directly related to the requirement to support junior staff whether working in pairs or teams. In each case the experienced nurse or the team leader assumed responsibility for ensuring all patient care requirements were met. For the wards that worked in pairs this resulted in the workload being *“more stressful for senior staff as they have to guide the junior partner”* and in wards that worked in teams of three to five led by a team leader in *“the team leaders feeling they have an increased responsibility to ensure all care is provided and this is causing them to feel under pressure.”*

Issues affecting whether the workload would be shared or increased was reported as being dependent on the staff they were paired or worked in a team with as *“hard workers do more”* and *“had difficulties working with a partner who can’t break out of the old routines and won’t work with the new model.”*

Allocation of staff was also reported as being difficult because of *“too many inexperienced staff”* resulting in *“problems with skill mix for 10 patients [for example] when paired with an EN who is not medication competent and there are a lot of IV medications and chemotherapy.”*

### **4.6.2.3 Solution Focused Sessions to Manage Increased Workload**

Following identification of concerns, staff were assisted with determining solutions to manage the perceived increase in workload associated with the SCM. The process involved staff identifying their concerns, then rephrasing their concerns into a question and proceeding to determine specific strategies to address the question. Collectively these formed the solutions to address the concerns. A synthesis of strategies from nurses reflection to address problems and theory generation that emerged from this process are shown in Appendix R. The following represents examples from different wards’ approaches to managing the perception of increased workloads.

*Increased responsibility and workload for senior nurses*

The first example addresses a concern of increased responsibility and workload for senior nurses raised by nurses working in a 35 bed spinal unit. In this ward, teams of five worked in a combination of one to two senior nurses; two or three less experienced nurses depending on staff availability, skill mix and patient care requirements; and one patient care assistant.

*How can we support/manage the team leader feeling increased responsibility?*

Four key areas were identified as required to support the team leader. These were reinforcing the need for all nursing staff to continue to be accountable for their practice, supporting the team leader by using the shift coordinator (SC) as a resource, developing a team colour coded weekly roster, and the use of a time management plan and good communication among the team to assist with organising patient care requirements.

To reinforce nursing staff were accountable for their practice they identified that among the team they each had a responsibility to demonstrate accountability for their practice and to trust each nurse will meet this professional requirement. This was demonstrated by ensuring all care was completed, documented appropriately and the team leader was informed of any patient care requirements that staff needed assistance with undertaking. The patient care attendants worked under the direct supervision of a registered nurse.

Methods identified by staff whereby the SC could support the team leader consisted of communication strategies and coordination of patient care. Communication strategies included ensuring team leaders were aware of patient care attendant's job description to enable appropriate delegation of duties and regularly communicating with the team leaders throughout the shift to enable prompt assessment and intervention as required. Coordination of patient care involved allocation of the team to ensure appropriate distribution of the available skill mix to meet patient care requirements and support staff. This was assisted by staff determining to group staff into colour coded teams on a weekly basis and allocating the same patients to each team throughout the week. Thus promoting continuity of patient care between shifts for the same staff and enabling staff to be exposed to working within a stable team.

To assist with organising patient care requirements staff agreed to develop a time management plan specifically designed to meet their patient care requirements. The time management plan was placed in the central office and staff were responsible for updating it within an agreed time period. Staff identified they needed to develop good communication and leadership skills to enable them to make the adjustment from working independently and being responsible for four allocated patients, to working within a team collectively responsible for 20 patients. This was achieved by agreeing on the following two strategies. Firstly the facilitator worked with the SDN to identify how to assist the team leaders undertake their role and subsequently the SDN worked with each team leader over a four week period. Secondly scenario based learning was used to enable staff to work through issues that occurred associated with the SCM.

### **4.6.2.3.1 More Patients to Look After**

The requirement for two nurses to work together to support each other in the provision of care for the combined allocation of patients required strategies to assist them adjust to this method of delivering patient care. The following is an example from a 30 bed surgical ward where nurses were particularly concerned with managing patients in single rooms. On this ward, while an experienced nurse was paired with a less experienced nurse, each nurse maintained primary responsibility for four allocated patients but was required to work together to assist with learning opportunities and share the workload.

*How do we work together with eight patients between two nurses?*

Two key components were identified, consisting of how they could support each other and the role of the SC in supporting them. Staff recognised the need to meet to coordinate how they could support one another by using the guideline of the shift SCM structure developed by ward staff during Phase II. This involved getting together after handover to identify patient care requirements that needed the expertise of one of the pair and would serve as a learning opportunity, or to assist with managing the workload. During the meeting staff scheduled their workload so that both were available to assist with identified care requirements. In addition, staff determined their breaks so that one nurse was available to manage unplanned patient care requirements.

Often patients nursed in single rooms tend to be complex requiring more demanding nursing care and staff agreed to split the allocation so that the four rooms were shared among the paired nurses and no one nurse was primarily responsible for patients in all four of the single rooms.

The role of the SC in supporting staff was agreed to include assessing the workload during the shift, reallocating if required and providing a clinical resource to ensure the workload is fairly and appropriately distributed among staff.

### **4.6.2.3.2 Unbalanced Skill Mix to Enable Pairing**

Given the unbalanced skill mix, the SC often had difficulties allocating staff to ensure junior staff were supported and staff had the required skill set to meet patient care requirements. The following illustrates a facilitated solution focus session to address this concern raised by staff from a 20 bed cardiology ward.

*When skill mix has more inexperienced staff how can you ensure enough support for junior staff? and how do we ensure the teams are allocated to match patient care requirements?*

Staff described a situation they encountered the morning the solution focused session was held. This involved four first year graduates and one experienced registered nurse being responsible for 20 cardiology patients. Two key components were identified to form the solution. These consisted of the role of the SC in determining the allocation and accessing available resources to support the staff.

Staff agreed the SC had to ensure two factors when determining the allocation. The first factor consisted of having a good understanding of staff skill mix and patient care requirements. This required the SC checking the current graduate rotation and experience gained from previous rotations. The second factor was considering cultural and sensitive issues when allocating staff to care for patients. In this situation the SC determined allocating two graduates with one experienced registered nurse and two graduates with the SDN or SC as being appropriate. This allocation ensured the graduates were supported by working with experienced staff.

Staff agreed a number of resources were available such as the SC, SDN and CNS and in their absence the afterhours CNS. Situations were identified where staff should contact these resources for support such as when unplanned events occurred causing an increase in workload and covering patient care to enable less experienced staff escort patients where clinically appropriate.

In addition to the solution focused sessions the facilitator often met with the SCs to review rostered staff and patient case mix to assist with optimising the allocation of paired or teamed staff to patient care requirements.

### **4.6.2.3.3 Managing Changes in Workload**

At the facilitated solution focused sessions staff expressed concerns regarding managing changes in patient acuity and wanted to work through practical examples of how to manage these. The following is an example from a 30 bed cardiothoracic ward.

*How do we work with the SCM when patient acuity changes?*

Staff determined this scenario to assist with demonstrating how the SCM should work. The scenario consisted of a graduate nurse \*Martha being paired with an experienced RN \*Betty (\*names changed). Martha was primarily responsible for two post operative patients, one patient with an intercostal catheter (ICC) and one stable patient. Betty was primarily responsible for two patients with an ICC, one of which was to be removed, one post operative patient and one patient requiring a venous access catheter dressing (VAC). Betty and Martha were asked to talk through the actions they would take to ensure optimal use of the SCM.

Betty and Martha reported they met after handover to work out how they would manage their workload. Betty checked if Martha had experience looking after post operative patients and ICC and Martha indicated she would need help with removing the ICC. Betty checked to see if Martha would like to see a VAC dressing which Martha indicated she would. Betty and Martha worked out a time when Martha could observe Betty remove an ICC and then Betty would supervise

Martha. Betty also advised Martha when she planned to do the VAC dressing. Betty and Martha then proceeded to attend to patients' needs.

During the morning one of the post operative patients Martha was primarily responsible for, deteriorated and she asked Betty for help. Betty responded and provided assistance by assisting Martha prioritise patient care requirements. Both nurses assisted each other to meet all prioritised patient care requirements. Betty also demonstrated how an ICC is removed and supervised Martha removing the ICC.

Throughout the scenario Betty and Martha demonstrated good respectful communication skills, how they could help each other and a willingness both to learn and to teach and supervise.

The researcher along with the staff listened and observed their role play. Immediately afterwards the researcher captured their approach to this issue by asking the staff to describe what they observed and recorded this on to Butchers paper. Discussion then occurred as to the appropriateness of the identified actions and how these aligned with the SCM. Consensus was reached by the group to replicate this approach in the clinical setting.

#### **4.6.2.4 Staff Workload Survey Results**

Table 4.9 shows the themes and categories resulting from the content analysis of all staff survey comments relating to manageable workloads when working in pairs or teams for the two study points following implementation of the shared care model. For this period a total of 640 (43%) of surveys were returned.

Table 4.9  
*Themes and Categories for Manageable Workloads Post SCM*

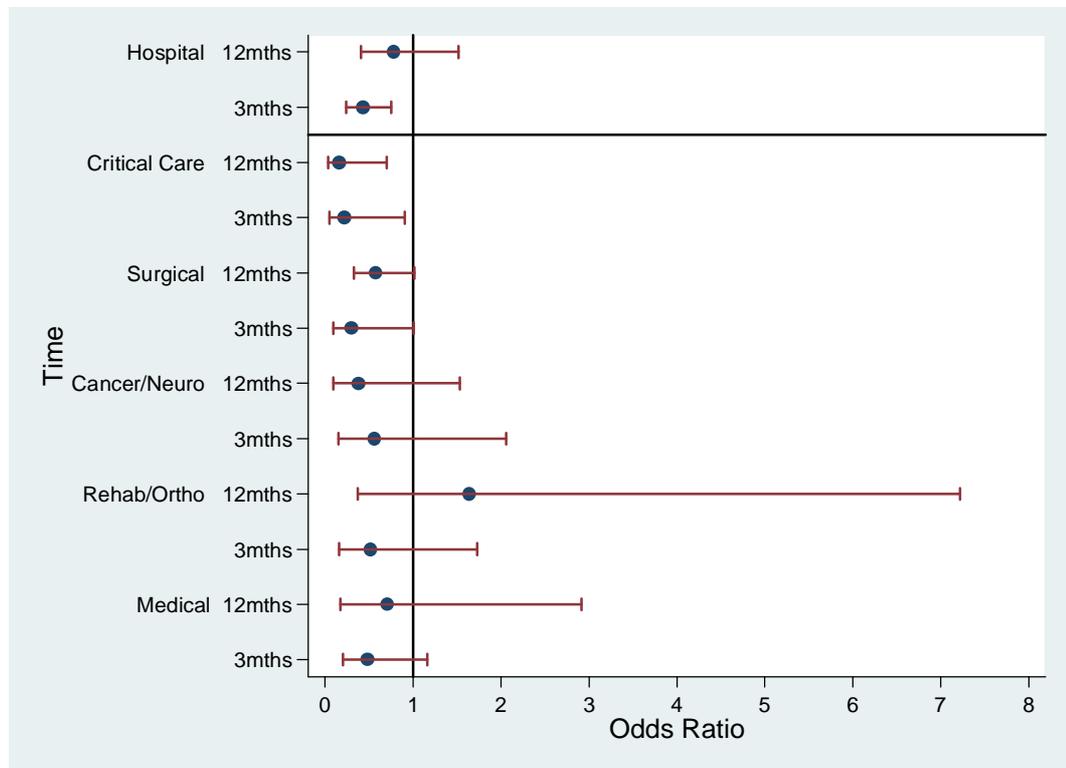
<b>Theme/Categories</b>	<b>3 /12 post SCM</b>	<b>12/12 post SCM</b>
<b>Theme</b>		
Increase in workload		
<b>Categories</b>		
Inexperienced staff to enable appropriate pairing	53	15
More patients to look after	25	1
Increased responsibility and workload for senior staff	17	6
Staff not sharing the workload	13	3
Short staffed	8	12
<b>Theme</b>		
Decrease in workload		
<b>Categories</b>		
Pairing experienced nurse with inexperienced nurse	11	2
Good allocation of staff to patient ratio	8	4
Good staff levels	3	5
Support from PCA & AIN	2	1
Staff dependent	0	7

The same sentiments expressed in the solution focused sessions were reported in the three month staff survey. The main concerns were related to insufficient experienced staff resulting in *“less pairing of experienced with inexperienced for pm shift; staffing issues remain a problem so that junior staff and agency relievers are sometimes paired together i.e. not enough leaders!”* and difficulties with managing the combined patient care requirements as *“having 12 pts between 2 nurses is unmanageable. It is hard to know what is happening with 12 individuals. I was told we were to have 9 pts between 2 staff but this has only happened rarely.”* Staff also commented on *“work load for more experienced staff is twice as much as we are teaching the less experienced staff plus trying to complete our own work, very difficult”*. Workload was also affected by staff not using the SCM because *“some*

*nurses don't like to team nurse, so sometimes one nurse is running around helping and the others are sitting on their bums. One nurse feels angry and upset and not valued.”*

These qualitative findings were supported with quantitative analysis from the staff surveys. Figure 4.1 shows the odds ratio, demonstrated in a forest plot, for the question: *Does the MONC ensure manageable workloads?* The hospital effect shows there is a statistically significant difference between three months and pre SCM, (OR= 0.42, 95% CI [0.24, 0.75], p = 0.003) and the odds ratio of less than 1, indicates a drop in agreement at three months compared to pre SCM. Therefore, when compared to baseline measures at three months the SCM does not ensure manageable workloads. The division effect shows that Critical Care was the only division that had a statistically significant difference between three months and pre SCM (OR= 0.21, CI [0.05, 0.90], p = 0.037). In addition, the odds of agreeing are lower at three months than at pre SCM for Critical Care. Overlapping CIs between divisions indicate that there are no significant differences between divisions in these relationships.

Figure 4.1  
*Effect of MONC on Manageable Workloads*



#### **4.6.2.5 Decrease in Workload**

However, some staff (n=43) compared with 153 who reported increase in workloads, perceived the new SCM had benefits in terms of workload. Staff reported a decrease or sharing of workload was related to appropriate skill mix of paired or staff teams enabling an improved distribution of workload and good allocation of staff to patient ratio.

#### **4.6.2.6 Solution Focused Sessions**

During the facilitated solution focused sessions with groups of nurses, staff emphasised the benefits of sharing the workload by working within pairs or teams. They reported they felt

*“less overwhelmed with excessive workload as it can be delegated,”* and *“worked more efficiently as there are two people to share manual handling, check antibiotics and double check things.”* In addition there were *“less demands on SC and SDN as junior staff asked their more experienced partner questions.”* Given the comments were positive no specific solutions were required.

#### **4.6.2.7 Staff Survey: Decrease in Workload**

The same sentiments expressed in the solution focused sessions in relation to decreasing workload were reported in the three month staff survey. The *“MONC works well when we are fully staffed”*. Another nurse reported the importance of being allocated a particular number of patients *“at times when short staffed, when allocated 10 patients or more, the workload can be a bit much but with 8 patients between two the model works well”*.

### **4.6.3 Staff Workload 12 Months Post Implementation of SCM**

#### **4.6.3.1 Increase in Workload**

Both the qualitative and quantitative analysis demonstrated an initial increase with concerns relating to increased workload in the first three months followed by a

decrease of reported concerns at the 12 month study point. This effect is demonstrated in Table 4.10, Table 4.11 and Figure 4.1.

Of the increased workload categories compiled from the staff surveys all have been reduced with the exception of reporting an increase in being short staffed. Like the first three month data, at 12 months staff reported similar causes of increased workload associated with inappropriate skill mix: *“MONC fails when there is an imbalance of experienced and inexperienced nurses, therefore there is a significant increase in workload for experienced nurses”* and staff shortages: *“with staff shortages and the utilisation of agency staff it is difficult when your buddy is finishing 2 hours before you or not starting until 2 hours after you! If agency staff are available then extra patient load has usuals running”*. Staff acknowledged that *“working with an experienced nurse is very valuable, however, sometimes experienced nurses are not available and 2 less experienced nurses may not be able to manage as well”* thus further highlighting the impact of insufficient experienced staff.

#### **4.6.3.2 Decrease in Workload**

Consistent with the increase in workload theme, at twelve months post implementation the decrease in workload theme had fewer reported staff comments. This finding was also found in the quantitative analysis as shown in Figure 4.1 with a return to baseline measures that were not statistically significant. Like the three months analysis, Figure 4.1 shows Critical Care was the only division that had a statistically significant difference between 12 months and pre SCM (OR = 0.16, 95% CI [0.03, 0.70],  $p = 0.015$ ) and the odds of agreeing were lower at 12 months than at pre SCM. The large CI for Rehabilitation/Orthopaedic division at 12 months, shown in Figure 4.1, appears to be due to a clustering effect, whereby wards within the division give similar responses, which effectively reduces the sample size and hence increases the CI width.

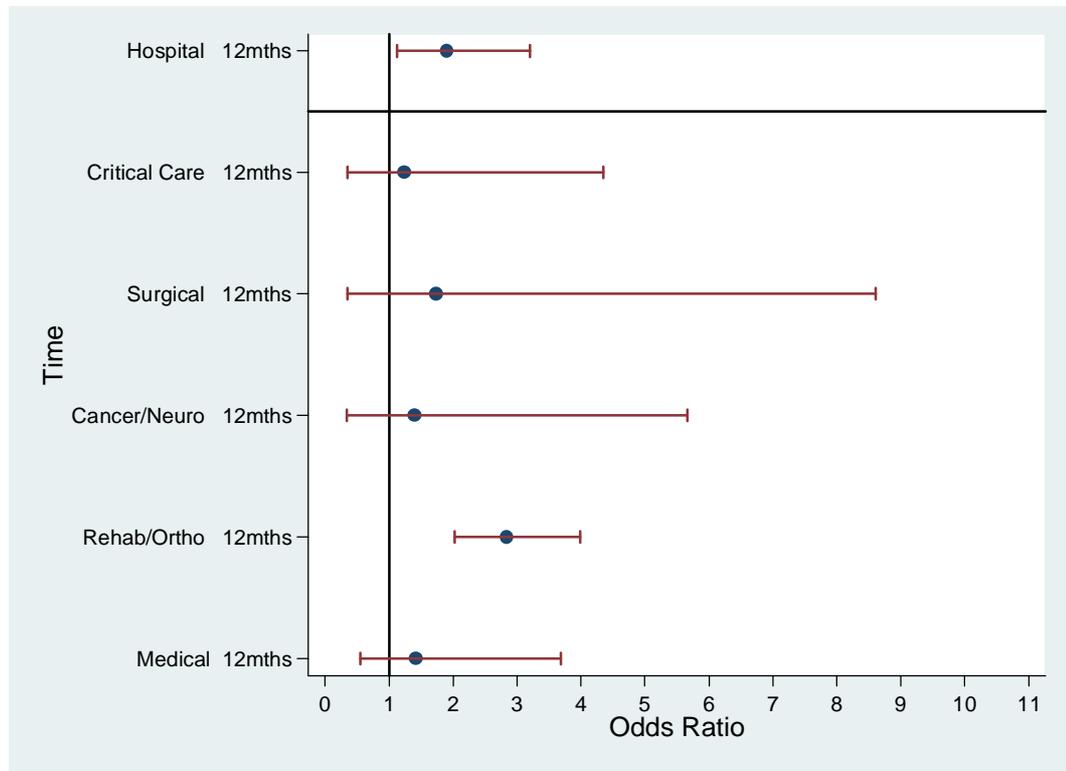
#### **4.6.3.3 Staff Survey: Decrease in Workload**

The requirements for decrease in workloads reported at the three month survey were again identified as being dependent on good staff levels, staff involvement and

appropriate allocation of staff to patient ratio. One nurse commented: “*the workload has improved since team nursing started, [but] not all staff fully implements team nursing,*” and another nurse reported: “*in most cases MONC works well if our own staff are on, problems arise when agency or casual pool are used and not used to team nursing.*” The preferred ratio by one nurse was “*2:9 as the SCM works well with 18 pts on ward, [but] less efficient when 24 or 32 patients as is when ward fully functional.*”

The quantitative analysis at 12 months for the question: *Is workload more manageable since pairing an experienced nurse with a less experienced nurse?* found significant workload benefits when compared with three months as demonstrated in Figure 4.2. The hospital effect shows there is a statistically significant difference between 12 months and three months post SCM (OR = 1.8, 95% CI [1.12, 3.20], p = 0.016). The increase in the odds ratio indicates increased agreement by staff that workload is more manageable since pairing an experienced nurse with a less experienced nurse at 12 months compared to 3 months post SCM. The Rehabilitation/Orthopaedic Division is the only division where this effect is also found, (OR = 2.8, CI [2.02, 3.98], p = <0001).

Figure 4.2  
*Effect of Pairing an Experienced Nurse with a Less Experienced Nurse on Manageability of Workload using Three Months as Reference Point*



Further analysis of the two workload questions were undertaken to determine the impact of time over the study period and the intensive implementation method. Results of this analysis are shown in Table 4.10. The results show there is a statistically significant effect for time ( $p= 0.003$ ) whereby at the three months study period scores are lower compared to baseline measures prior to implementation of the SCM for the non intensive intervention group. However, at 12 months no difference is detected from pre intervention measures for this group. The interaction term was also tested (not shown) but no evidence of an intensity effect was detected. When nurses were paired with a more experienced nurse a statistically significant association between the intensive intervention and staff who give an agreed response ( $p= 0.048$ ) was found. The odds of those who were in the intensive implementation group giving an agree response, across all time points, was 1.6 times higher than those not in the intensive intervention group. Time is also significant ( $p= 0.038$ ) with a decrease in the odds of giving an agree response of 44% at 12months.

Table 4.10  
*Logistic Regression of Staff Agreement with Manageable Workload Statements*

MONC ensures manageable workloads	OR	95 % CI	P
3 months	.42	[.24, 0.75]	0.003
12 months	.78	[.40, 1.5]	0.467
Intensive implementation	.92	[.68, 1.3]	0.878
Workload more manageable since pairing an experienced nurse with a less experienced nurse *			
12 months	.56	[.32, 0.96]	0.038
Intensive implementation	1.6	[1.0, 2.6]	0.048

Note. \*Question asked at 3 and 12 months post implementation.

#### 4.7 Summary of Staff Workloads

Baseline data collected prior to developing the SCM indicated staff had difficulties managing workload while using the patient allocation model. These difficulties persisted and significantly increased in the first three months as staff adjusted to using the SCM. However, as staff became more familiar with the SCM by 12 months there was a return to baseline measures. While the SCM was not found to ensure workloads were more manageable, when an experienced nurse worked with a less experienced nurse, either in pairs or teams, workload was significantly more manageable at 12 compared to three months. Staff reported benefits gained working in teams was dependent on both the level of experience, nurses' commitment to work using the SCM and their work ethic. The different methods of intervention were not found to be significant over the study points. However, those nurses who received the intensive method of implementation, when paired or working in teams with an experienced nurse, were found to be 1.6 times more likely to report this effect. The impact of time was also found to be significant with a decrease of agreed responses at the 12 month survey point.

#### 4.8 Impact of Shared Care Model on Staff Support

To determine the impact of the shared care model on staff support, content analysis of the qualitative data from the solution focused sessions and staff survey was undertaken. In addition, quantitative analysis from the staff surveys of the staff support scale and combined SCM staff support interventions, along with two

individual staff support questions were investigated using linear and logistic regression models.

#### 4.8.1 Staff Support: Pre SCM

Table 4.11 shows the themes and categories resulting from the staff survey comments relating to a culture of support for nursing staff prior to the SCM being implemented, when staff were using the patient allocation model. For this period a total of 366 (49%) of surveys were returned.

Table 4.11  
*Themes and Categories for Culture of Support*

<b>Theme and Categories</b>	<b>Number</b>
<b>Theme</b>	
Culture of learning and development	
<b>Categories</b>	
Support for development of self and colleagues	12
Regular education sessions	6
<b>Theme</b>	
Poor culture of learning and development	
<b>Categories</b>	
Lack of support from colleagues and senior staff	18
Limited access and regular formal education	4
Hospital strategic initiatives limits support	3

Note. Number refers to the number of times these were reported by individual nurses.

The two themes of culture of learning and development were determined through staff articulation of factors they either found supportive or non supportive. Supportive factors were related to specific nursing positions as illustrated by a nurse commenting: *“I honestly feel the management on this ward is the best I have ever had. Very supportive, constructive and fair. Staff development is excellent in ensuring people reach an acceptable standard and have evidence to prove it with competencies.”* Another nurse emphasised the importance of education and commented: *“staff are encouraged to continue learning. There is frequent ward based*

*in-service training. There is nearly always a senior staff member to assist with new practice, including CNS, SDN and CNs.”*

Conversely, both of these factors contributed to a poor culture of learning and development when not provided. One nurse commented: *“I think staff support has decreased significantly over the last 10 years. I feel more isolated than ever before. Also, some of the support structures have the opposite effect and just get in the way”* and another reported: *“SDN's need to be far more involved in educating and assisting staff members. The focus seems to be on paperwork and attending meetings, rather than developing and maintaining staff skills.”*

The impact of the hospital four hour rule strategic initiative was reported as having a negative impact on staff support with one nurse commenting: *the bed crisis issue is destroying the supportive culture on this ward. More experienced staff are being asked to perform above and beyond a reasonable level of performance. This leads to burnout of your best and brightest staff .”*

#### **4.8.2 Staff Support: First Two and Three Months Post SCM**

Content analysis of both the solution focused sessions and staff surveys conducted in the first two and three months respectively post SCM identified the factors that nurses reported as influencing whether their learning was supported using the SCM. The same two themes consisting of a good or poor learning culture were maintained with the emphasis placed on the positive impact of the SCM on the learning culture. Consequently, both are presented within the theme of a culture of learning and development.

##### **4.8.2.1 Culture of Learning and Development Solution Focused Sessions**

In the first two to three months following implementation of the SCM, at the solution focused sessions, staff reported the positive impact of the SCM on a culture of learning and development as shown in Table 4.12. The majority of comments of the impact working in pairs or teams had on staff support were made in the first two months post implementation of the SCM.

Table 4.12  
*Themes and Categories for Culture of Staff Support*

<b>Theme and Categories</b>	<b>First 2/12 post SCM</b>	<b>3/12 post SCM</b>	<b>12/12 post SCM</b>
<b>Theme</b>			
Culture learning and development			
<b>Categories</b>			
Improved learning opportunities	35	1	
Increased general support	20	5	2

Staff reported positive benefits of improved learning opportunities and increased support by working in pairs or teams, with experienced staff supporting less experienced. Improved learning opportunities were created by establishing a practice whereby, through working together, a less experienced nurse would identify learning deficits and the experienced nurse assisted with addressing these. Nurses frequently described this occurring by paired or teams of nurses: *“following handover working out how they can best support each other from both a work perspective and learning opportunities.”*

Typically most learning opportunities focused on demonstrating and supervising clinical procedures and assisting with patient assessment and intervention when managing a deteriorating patient. Increased general support consisted of supporting one another in relation to being available and willing to assist as required and being a resource in relation to organisational routines associated with patient management. Given the comments were positive no specific solutions were required.

#### **4.8.2.2 Staff Support Survey Results**

Both the good and poor culture of learning theme emerged from the staff survey comments as shown in the content analysis for the two staff survey study points post implementation of the SCM presented in Table 4.13. Despite the positive

response in the solution focused session, few comments were reported in the staff survey.

Table 4.13

*Themes and Categories for Culture of Support Post SCM*

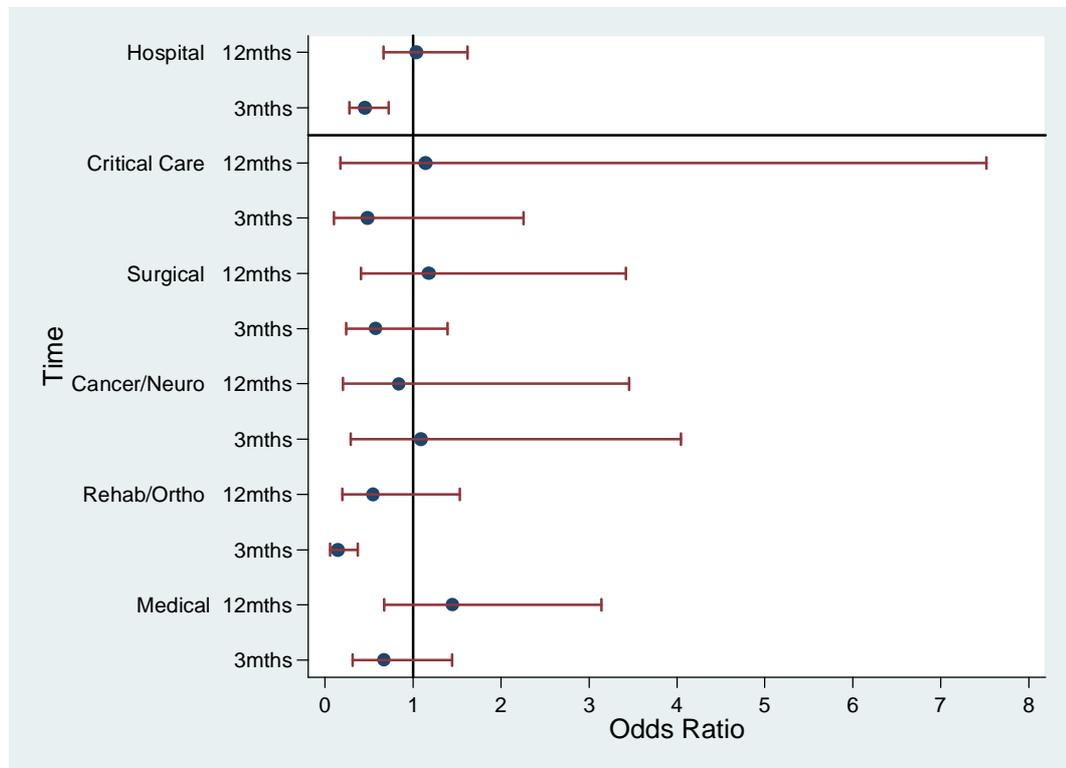
<b>Theme/Categories</b>	<b>3/12 post SCM</b>	<b>12/12 Post SCM</b>
<b>Culture of learning and development</b>		
<b>Categories</b>		
Support for development of self and colleagues		4
Increased learning opportunities working in pairs or teams	1	3
<b>Theme</b>		
Poor culture of learning and development		
<b>Categories</b>		
Decreased learning opportunities working in pairs or teams	2	
Hospital strategic initiatives limits support		3
Limited access and regular formal education		1

Staff reported on both positive and negative impact on learning opportunities when working in pairs or teams. The positive impact occurred as reported by one nurse: *“there is much more support between the 2 nurses than there was under the buddy system. Nurses help each out much more.”* However, another nurse commented, on both the positive and negative impact and highlighted there was: *“not enough time for learning opportunities. The positive side is that staff are more aware to help each other and answer each other’s bells.”*

The positive effect reported in the solution focused sessions were also not reflected in quantitative analysis of specific staff support questions. This is shown in Figure 4.3 by the odds ratio demonstrated in a forest plot, for the question: *Is there a culture of support for one another among nursing staff?* The forest plot for the hospital effect shows there is a statistically significant 56% decrease in the odds of agreement, between three months and pre SCM (OR =0.44, 95% CI [0.27, 0.72], p = 0.001). This

effect was also found in the Rehabilitation/Orthopaedic Division (OR = 0.14, CI [0.05, 0.36), p=<0.001) but to a larger degree (86% decrease in odds). All other divisions showed no statistically significant difference between three months and pre SCM. At both the hospital and divisional level no statistically significant differences were detected between pre SCM and 12 months. Similar to the workload quantitative analysis, the SCM had a significant negative effect on the culture of support in the initial three months, but by 12 months attitudes had converged to baseline measures.

Figure 4.3  
Effect of MONC on Culture of Support



### 4.8.3 Staff Support: 12 months Post Implementation of SCM

#### 4.8.3.1 Culture of Learning and Development Solution Focused Sessions

Twelve months following the implementation of the SCM, the two positive comments made at the solution focused sessions were related to the SCM increasing general support among staff as described by one nurse: “pairs discuss patients care

*and work out how they can help one another.*” Consequently, no specific solutions were required.

#### **4.8.3.2 Staff Survey: Support**

A total of seven positive comments reported reflected both compliance with using the SCM, with a nurse reporting: *“buddies are always allocated; learning opportunities have increased due to junior staff being aware of what is happening with more pts”* and the positive impact perceived increased learning opportunities had on staff and the ward culture by another nurse commenting: *“the stigma surrounding the ward is slowly disappearing and people are actually enjoying working here now.”*

The negative comments were related to the hospital four hour rule initiative with one nurse commenting: *“Senior staff are so tied up in bed management issues that ward based things such as finding better ways or suggestions for improvement are ignored or not acted on.”*

At 12 months post implementation of the SCM both the qualitative and quantitative analysis demonstrated staff no longer associated the SCM with having a negative effect on the culture of support. This is demonstrated in Table 4.12 by staff continuing to report only positive comments and in Table 4.13 by an increase in positive staff survey comments and the majority of negative comments not directly related to the SCM. From a quantitative perspective this effect is demonstrated in Figure 4.3 as there is no longer a statistically significant effect for both the hospital and Rehabilitation/Orthopaedic Division. This effect is consistent with the findings from the quantitative analysis for all staff support questions asked at baseline and 12 months following implementation of the SCM as shown in Table 4.14. There were no differences detected between the two groups at baseline ( $p=0.72$ ) nor in their change over time ( $p=0.75$ ).

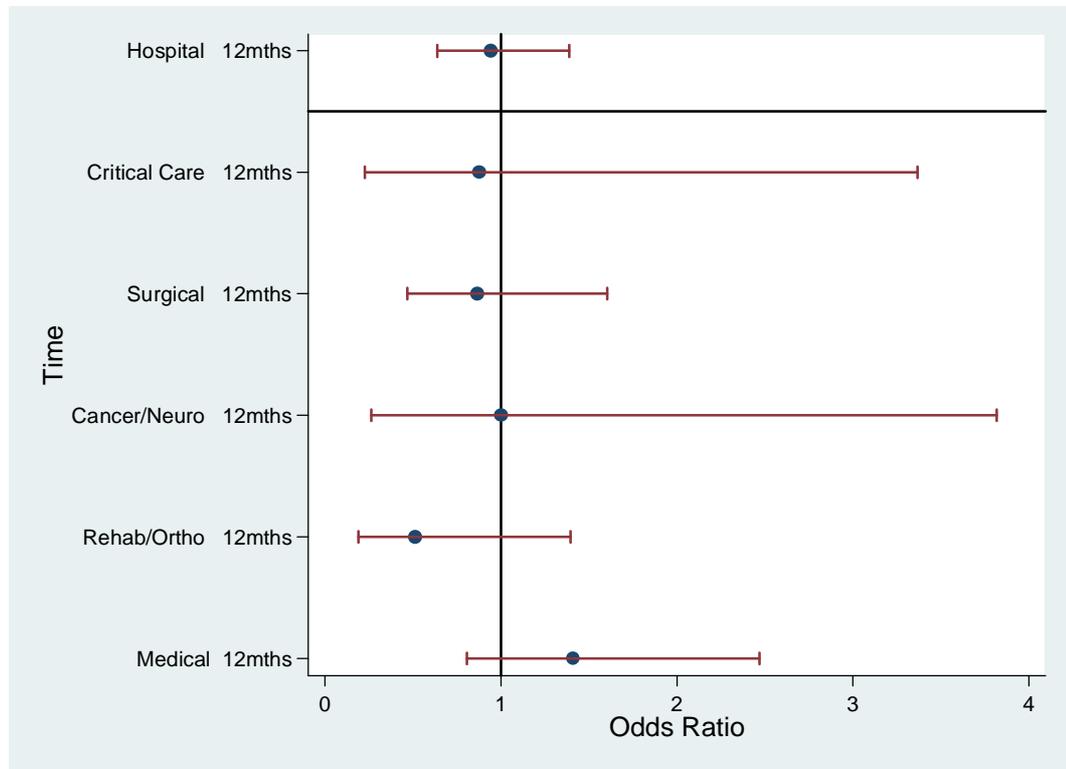
Table 4.14  
*Linear Regression of Effect of SCM on Staff Support Scale*

Staff support	Coef	95 % CI	P
12 months compared to baseline	-.23	[-1.3, 0.92]	0.68
Intensive implementation	.25	[-1.2, 1.7]	0.72
Intensive Implementation <u>X</u> 12 months	.25	[-1.3, 1.9]	0.75
Constant	21.70	[20.4, 22.9]	<0.001

Note. X indicates interaction of time and intensity at 12 months.

Further analysis of the question *Do nursing staff go out of their way to help and support each other?* asked at both pre and 12 months post implementation of SCM was undertaken. Figure 4.4 shows the odds ratio, demonstrated in a forest plot for both the hospital and divisional effect. No statistically significant differences between pre and 12 months post SCM were found.

Figure 4.4  
*Effect of SCM on Nurses Going Out of Their Way to Help and Support Each Other*



Despite finding no effect from the overall question, the components were investigated to see if any interventions were more effective under the intensive intervention. The specific staff support interventions associated with the SCM

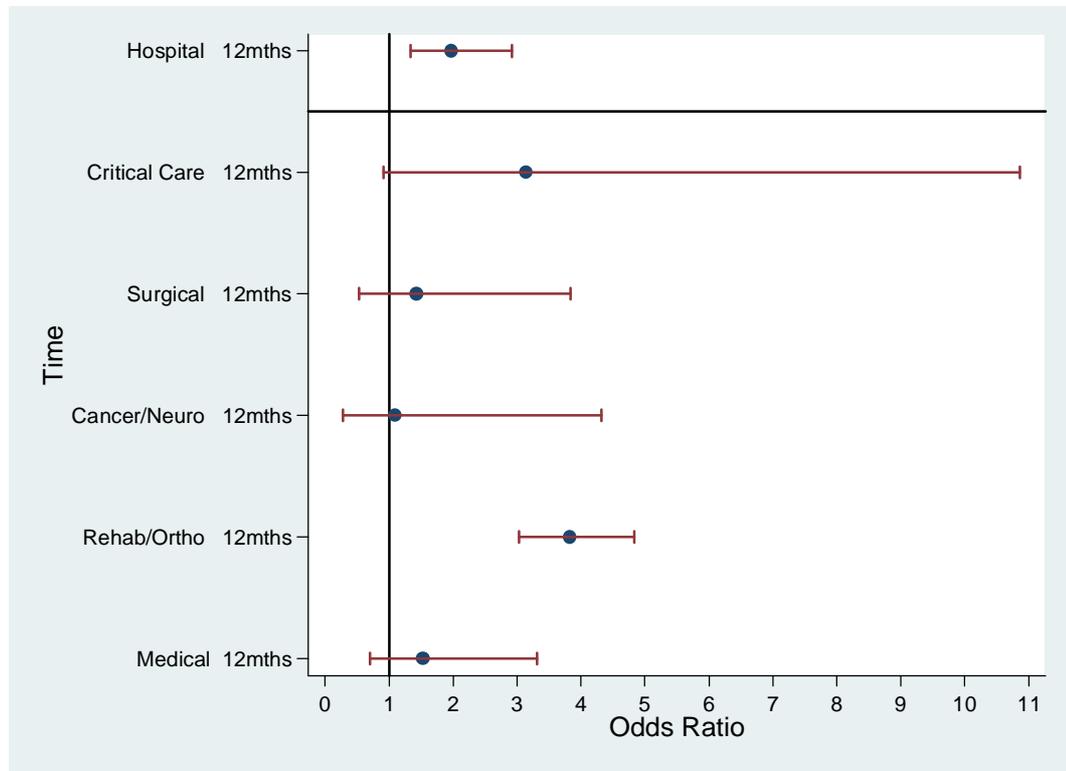
consisted of working with a more experienced nurse to increase learning opportunities and manage workload, checking charts and ensuring timely breaks. Table 4.15 shows the combined scores for these staff support interventions asked at the three and 12 month post SCM study points. No significant differences between the two intensity groups were found either at baseline or over time. However, there were large amounts of missing data at both survey points, resulting in only 201 and 210 included in the analysis at three and 12 months respectively. The majority of missing data from the surveys was the sections related to checking charts and having regular breaks.

Table 4.15  
*Linear Regression of Effect of SCM for Combined Support Interventions*

Staff support with specific SCM interventions	Coef	95% CI	P
12 months	.371	[-0.86, 1.60]	0.539
Intensive Implementation	-1.1	[-2.8, .51]	0.165
Constant	16.1	[14.42, 17.92]	<0.001

The intervention of pairing an experienced nurse with a less experienced nurse to increase learning opportunities was further investigated. Figure 4.5 shows the odds ratio, demonstrated in a forest plot, for the question: *Has learning opportunities increased by pairing an experienced nurse with a less experienced nurse?* The hospital effect shows an almost twofold increase in the odds of agreement at 12 months compared to three months post SCM (OR =1.97, 95%CI [1.33, 2.91], p = 0.001. This effect, although larger in magnitude, was also found in the Rehabilitation/Orthopaedic Division (OR = 3.82, CI [3.02, 4.8], p = <0.001). All other divisions showed no statistically significant difference between three and 12 months post SCM.

Figure 4.5  
*Effect of SCM on Increased Learning Opportunities by Pairing an Experienced Nurse with a Less Experienced Nurse*



#### 4.9 Summary of Staff Support

Qualitative analysis at all study points indicated staff acknowledged positive learning and development benefits associated with the SCM. However, quantitative analysis at three months demonstrated the SCM had a significant negative impact on the culture of support. At the 12 month study point, this negative effect was no longer apparent in the quantitative analysis, with a return to baseline measures. The SCM was not found to significantly improve the culture of support for nursing staff. However, when nurses are paired with a more experienced nurse there is a significant positive effect on learning opportunities.

#### 4.10 Impact of SCM on Team Approach in the Organisation and Provision of Nursing Care

To determine the impact of the SCM on team approach in the organisation and provision of nursing care, content analysis of the qualitative data from the solution focused sessions and staff surveys were undertaken. In addition, quantitative analysis from the staff surveys of the teamwork /co-workers scale and one question directly

inquiring if the MONC promoted a team approach to the provision of nursing care were investigated using linear and logistic regression models.

#### 4.10.1 Team Approach: Pre SCM

Table 4.16 shows the themes and categories resulting from the staff survey comments relating to promotion of a team approach in the organisation and delivery of nursing care at the pre implementation study point when staff were using the patient allocation model. For this period a total of 366 (49%) of surveys were returned.

Table 4.16

*Themes and Categories for Team Approach to Provision of Nursing Care*

<b>Theme and Categories</b>	<b>Number</b>
Effective team approach to coordination of patient care	
<b>Categories</b>	
Good communication among colleagues and health care team	5
Discharge planning	5
Patient centred quality care	5
<b>Theme</b>	
Lack of coordinated patient care among health care team	
<b>Categories</b>	
Poor communication among colleagues and health care team	14
Discharge planning	2
Lack of quality care	1

Note. Number refers to the number of times these were reported by individual nurses.

The two themes of effective coordination or lack of coordinated patient care were determined through staff articulation of factors they either found contributed or not to a team approach to patient care.

##### 4.10.1.1 Effective Team Approach to Coordination of Patient Care

The three categories for this theme focused equally on good communication among the health care team with one nurse commenting: “*we have excellent*

*communication among allied health and patients and relatives,” good discharge planning indicated by: “discharge planning and communication are excellent” and the patient allocation model enables patient centred quality care. Another nurse reporting: “the patient allocation would be considered the best. I have seen all so called others i.e. primary nursing, team nursing and none of them can provide good quality of care.”*

#### **4.10.1.2 Lack of Coordinated Patient Care Among Health Care Team**

The categories for this theme maintained the same focus but with a negative slant, with the majority of comments relating to poor communication regarding patients’ management between the medical and nursing staff. This was described by one nurse as: *“medical staff not functioning in team and are the weak link. Nurses solve problems that Dr’s cause.”* Poor communication was also reported in the discharge planning category with another nurse commenting: *“Drs do not plan for discharge in advance leading to delays in discharges.”* The only negative comment relating to the MONC was the perceived effect SCM would have on reducing quality of patient care, described by one nurse as: *“team nursing does not allow time to spend quality time with the patients and can be dangerous if RN down one end of ward is unable to supervise other end at same time.”*

#### **4.10.2 Team Approach: First Two and Three Months Post SCM**

Content analysis of both the solution focused sessions and staff surveys conducted in the first two and three months respectively post SCM showed the factors that nurses reported as influencing whether the SCM promoted a team approach to the provision of nursing care. Similar themes and categories to the staff survey analysis emerged in the solution focused sessions.

##### **4.10.2.1 Solution Focused Sessions**

The positive comments reported in the solution focused sessions are represented in the improved patient management and compliance with SCM themes,

while the concerns raised are related to deterioration in patient management and non-compliance with SCM themes as shown in Table 4.17 for all study points post implementation of the SCM.

Table 4.17

*Themes and Categories for Team Approach to Nursing Care Across all Study Points*

Theme/Categories	First 2/12 post SCM	First 2/12 solutions	3/12 post SCM	3/12 solutions	12/12 post SCM	12/12 solutions
<b>Theme</b>						
Improved patient management						
<b>Categories</b>						
Improved communication among nursing staff	27					
Improved patient care	10				3	
Improved coordination of care	7				2	
<b>Theme</b>						
Compliance with SCM						
<b>Category</b>						
SCM being used			8		3	
<b>Theme</b>						
Deterioration in patient management						
<b>Categories</b>						
Accountability clarification	15	24				
Poor communication among pairs and teams	17	19				
Missed care	6	7	1			
Poor coordination of patient care	15	3				
<b>Theme</b>						
Non complaint with SCM						
<b>Categories</b>						
Resisting change	22	7	8	10	2	2
Non-compliance with time management plans	10	19				

#### **4.10.2.2 Improved Patient Management**

Improved patient management resulted from good communication among nurses and the health care teams, improved patient safety with reductions in falls and medication incidents reported as being associated with SCM interventions, and better planning to improve coordination of patient care. Besides improvements in patient management staff also reported that better communication among nurses had contributed to both the team spirit and establishing trust. This was reflected in a nurse commenting: *“as time goes by communication & team spirit are enhanced”* and another nurse reporting: *“trust is more there between colleagues.”*

The SCM interventions associated with a reduction in falls was related to working in pairs or teams and the reduction in medication incidents with checking of medication charts as identified in the following comment: *“improvement in checking of charts which appears to have assisted in fewer medication incidents judged by fewer AIMS forms in the past fortnight.”*

Improved coordination of care was reported as resulting from a combination of factors including having a well organised team leader, good communication among nurses and the health care team, and development and use of the time management plan (TMP) to include allied health involvement. Nurses in one ward reported there was an, *“opportunity for better multidisciplinary team approach as CNM has discussed with physiotherapist and occupational therapist the need to inform nursing staff of times of patients’ therapy times.”* This resulted in ward staff: *“trailing use of form developed by CNM which includes patient names routine patient care and section for physiotherapist and occupational therapist to indicate therapy times.”*

#### **4.10.2.3 Deterioration in Patient Management:**

The majority of concerns raised in the first two months post implementation of the SCM were related to understanding accountability for practice, the need for good communication skills and coordination of patient care. These areas highlighted the changes resulting from working independently when using the patient allocation model to working in pairs or teams using the SCM. Accountability concerns included

determining who was responsible if patient care was missed, who was responsible for documenting care provided and what legal ramifications were associated with these. Staff reported poor communication skills between the pairs or teams resulted in staff not being certain of their patients' specific care requirements. This subsequently led to poor coordination of care resulting in lack of prioritisation in the provision of care, duplication of effort and care not being provided.

#### **4.10.2.4 Solutions to Manage Deterioration in Patient Management**

Following identification of concerns, staff were assisted with determining solutions to manage the perceived deterioration in patient management associated with the SCM. The following represents examples from different wards' approaches to managing the perception of deterioration in patient management.

##### **4.10.2.4.1 Accountability Clarification**

All wards sought clarification of accountability working with the SCM. The following is an example raised by nurses working in a 27 bed neurology rehabilitation unit seeking clarification of who was accountable for both provision and documentation of nursing care. In this ward staff were divided into three teams each team consisting of one experienced nurse with two less experienced, depending on staff availability and skill mix, and two of the three teams each were allocated a PCA. Each team were responsible for three sections each with a total patient acuity of 26.

*Who is accountable for patient care and documentation of the care given?*

The accountability strategies identified were consistent with those agreed in the solution focused sessions to support the team leader. These consisted of accepting as registered nurses they are accountable for all care they provide and responsible for ensuring specific care requirements delegated by the team leader are undertaken.

Two strategies were agreed to manage documentation concerns. These consisted of changing established documentation practices, including amending the

hospital's documentation nursing practice standard and modifying the format of the care plan. Two issues were associated with this solution. The first was related to acknowledging the practice of non-compliance with the hospital documentation nursing practice standard whereby staff had adopted a practice of recording care on care plans prior to it being provided on the basis they would be providing the care during the shift. This was resolved by an agreement that this practice would cease immediately and care plans were only to be signed after care was provided, thus meeting the hospital's documentation standards. The other problem was there was a lack of space on the care plan for each nurse who provided care to both sign and print their name as the document was created for a patient allocation model whereby two spaces were available each shift, one for the nurse's signature, the other for the nurse's name to be printed. In the short term this was managed by agreeing to follow the same documentation practice used for signing administered medications. This consisted of using only initials to indicate care had been provided. The longer term solution consisted of the facilitator arranging for the care plan to be modified and the documentation nursing practice standard to be amended to reflect using initials to record provision of nursing care.

Nurses initialling the care plan to indicate routine care had been provided, enabled another change in documentation practice. This consisted of the team leader now being able to delegate, towards the end of the shift, any of the teamed nurses to record in the patient's integrated notes, a standard statement: *All care as per nursing care plan*. The exception to this, consistent with the hospital's documentation nursing practice standard, was to use the Data, Action, Responsive (DAR) format when changes in patient's condition were reported. In this case the nurse responsible for managing the change in the patient's condition was responsible for documenting in the integrated notes.

### **4.10.2.4.2 Poor Communication Among Pairs and Teams**

While poor communication among colleagues and the health care team was reported in the pre SCM staff survey, working in pairs or teams highlighted the importance of good communication skills. Staff reported poor communication among the pairs or teams led to reluctance to work as a team, duplication of effort,

disorganised and missed care. This example addresses poor communication concerns raised by nurses working in a 30 bed cancer ward. In this ward an experienced nurse is paired with a less experienced nurse, depending on staff availability, skill mix and patient care requirements, and collectively they were responsible for 10 patients.

Staff first rephrased their concerns into a question:

*How can we ensure communication is effective so that we avoid duplication of effort and save time?*

Staff determined their understanding of effective communication consisted of being respectful of one another in all communications. This meant the manner in which they communicated was to be calm, concise, with open discussion and collaborative decision making regarding patients' care. One nurse raised her experience in finding it difficult to communicate with an agency nurse she was partnered with who had refused to assist with patient washes. Members of the group raised similar communication difficulties with agency staff. Suggestions were listed by the group in how the matter should be managed both at a ward and individual level. The group agreed that in these situations the nurse was to endeavour to address the issue directly with the agency nurse and if the matter was unresolved to inform either the shift coordinator or CNS who would discuss the issue further with the agency nurse. This outcome reflects how this situation was actually handled. The CNS informed the facilitator of the details prior to the meeting and confirmed the ward nurse's account as being accurate. Staff then requested if role play could be used to assist in demonstrating good communication skills when dealing with these matters. The facilitator played the role of the nurse asking for help and the SDN the agency nurse refusing to provide the assistance. Throughout the scenario the facilitator maintained a calm and respectful manner not retaliating to the aggressive response from the SDN's role-play which resulted in the agency nurse resolving to assist with the shower. Nursing staff then volunteered to role play a scenario whereby request to assist with medication administrations was denied from a paired nurse and replicated a similar approach, demonstrating effective communication skills.

Strategies to avoid duplication of effort, disorganised and missed care were

based on developing an agreed communication system between each pair. This involved two aspects: use of respectful communication and inclusion or not of a time management plan (TMP). Respectful communication included open discussion regarding patient care requirements and establishing regular time periods to update one another at the start of the shift. If the pair agreed to use the TMP they agreed on how it should be used, for example, to record care provided or inform of nurse's whereabouts such as in a side room administering intravenous medication. Another strategy to overcome care being missed consisted of each nurse agreeing to document by initialling both the nursing care plan and medication chart immediately after care was provided.

### **4.10.2.4.3 Resisting Change**

In the first two months after implementation all wards expressed difficulties with making the transition from their previous model of patient allocation model to the SCM. Junior staff reported senior staff's reluctance to work within the SCM principles, in particular to be available as a learning resource and to coordinate patient care from a team perspective, resulting in a tendency to revert to using the patient allocation model where possible. The following example is from a 30 bed general medical, endocrinology and dermatology ward. In this ward 30 beds were divided across east and west wings and nursing staff were allocated into three teams. A team of three nurses with one experienced nurse was responsible for the 13 patients in the west wing, while two teams of two nurses, each with an experienced nurse, were responsible for the 17 patients in the east wing. Staff reported when working in the west wing the experienced nurse often used the patient allocation model to overcome difficulties with coordinating patient care requirements.

*How can we get the most out of the SCM principles?*

The session involved a review of the SCM principles and an agreement to work towards complying with these. Nurses agreed on combining some elements of the patient allocation model along with the SCM principles. The major difference was that instead of being allocated 10 or 15 patients between two or three nurses, nurses would, within this allocation, have primary responsibility for particular patients based on

patient acuity. The difference from the patient allocation model was that these patients were not room based, and staff were required to assist with the collective patient care requirements. This was achieved by the team of three or two receiving handover for their group of patients, then determining how best they would help and support one another meet all patient care requirements, such as providing assistance with prioritisation of care, bed baths, manual handling and checking medications. The less experienced nurse assumed responsibility for informing the more experienced nurse of learning deficits and the more experienced nurse endeavoured to assist the nurse address these. In addition, consistent with the SCM principles, all meal breaks were covered by team members.

Evidence of success of these strategies was a reduction in the number of concerns raised and positive comments made at the three monthly solution focused sessions. One nurse acknowledged the time it takes to experience culture change: *“recognition culture change can take up to 2 years but ward staff demonstrating this has already begun to occur among ward staff”* and another nurse commenting: *“it appears staff are becoming more used to the SCM as they are more positive.”*

#### **4.10.2.4.4 Non-Compliance with Time Management Plans**

To assist with organising patient care, staff choose to develop ward specific TMP. For junior staff these tools were inherent in their undergraduate clinical practice experience and were readily adopted. However, for senior staff with established expertise in coordinating patient care, TMPs were considered unnecessary. Despite this, senior staff agreed to use them if the junior staff required them. To get the most use from the TMP staff agreed more education on their use was required, time was required to compile the TMP, it had to be user friendly and must be updated throughout the shift.

*How do we get the best use of the time management tool?*

The following is an example raised by nurses working in a 29 bed acquired brain injury rehabilitation unit. In this ward staff are divided into three teams. One team consists of two experienced nurses, one less experienced and a PCA for 9 patients

who required high dependency nursing care. The other two teams consisted of paired nurses, each with an experienced nurse, supported by one PCA across both teams for the remaining 20 patients requiring rehabilitative nursing care.

Three areas for effective use were identified, consisting of agreement of the content, recording and location of the time management tool. Staff used the solution focused sessions to modify the TMP and demonstrate its use. Two strategies were agreed to ensure the tool reflected current patient care requirements and was regularly updated when care was completed. These consisted of the team leader being responsible for compiling the TMP for the oncoming shift and staff crossing off the care as soon as possible after providing the listed care. Staff agreed to inform team members if additional care had been provided. The TMP was kept in two central locations, one in the high dependency area the other in the central office. No concerns were raised regarding the use of the TMP at the three month solution focused sessions

### **4.10.2.5 Team Approach Staff Survey Results**

Qualitative comments from the staff survey at three months showed a reduction in communication difficulties among staff but an increase in concerns relating to the delivery of care and associated missed care as shown in Table 4.18.

Table 4.18  
*Themes and Categories for Promotion of Team Approach*

Theme and Categories	3/12 Post SCM	12/12 Post SCM
<b>Theme</b>		
Effective team approach to coordination of patient care		
<b>Categories</b>		
Good communication among colleagues and health care team		2
<b>Theme</b>		
Lack of coordinated patient care among health care team		
<b>Categories</b>		
Task orientated	9	3
Missed care	8	6
Poor communication among colleagues and health care team	2	1

#### 4.10.2.5.1 Lack of Coordinated Patient Care Among Health Care Team

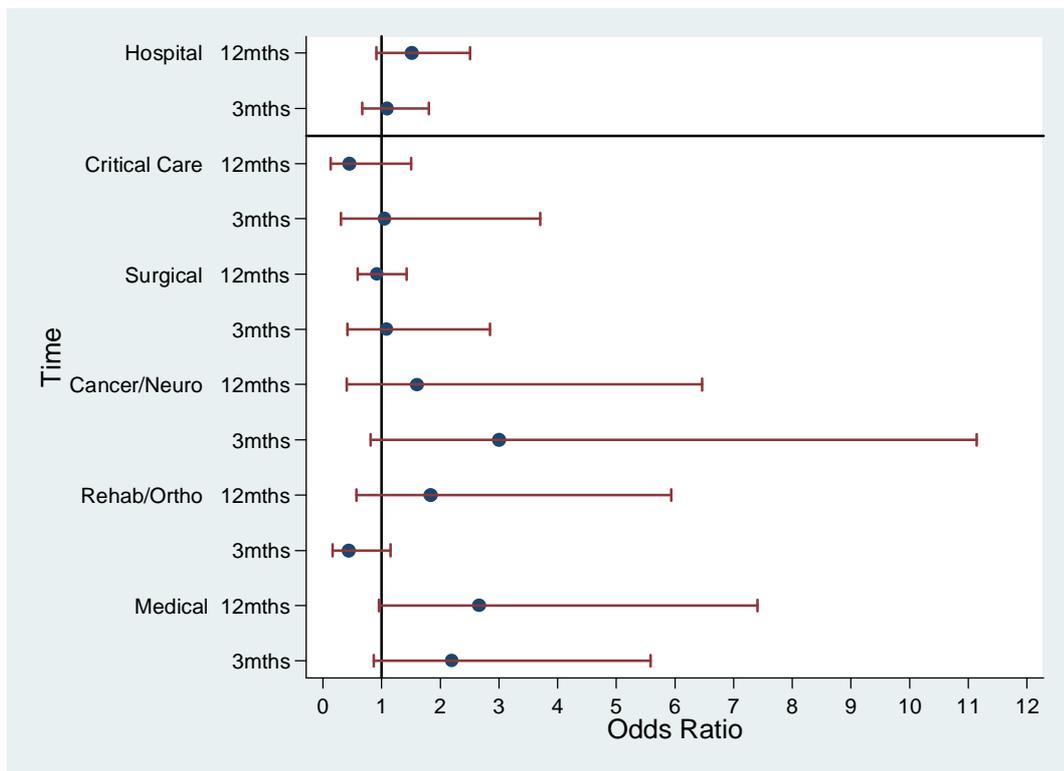
Staff reported they found the SCM to be more task orientated as described by one nurse as: *I think people find it difficult to know everything about 9 pts and therefore work by the time management plan for things that have to be done rather than identifying new issues or planning for future issues e.g. d/c [discharge planning].*

While there was a reduction in communication difficulties reported, it was the main reason associated with missed care. One nurse commented this was related to: *“often areas of patient care are overlooked as each of the grouped staff believes the other is taking care of it”* and another highlighted: *“if nurses have low level of communication it is ineffective as things don’t get passed on to each other. It is also harder to keep a close eye on 8-9 pts instead of 4-5 pts which I think leaves a larger risk for errors.”*

### 4.10.2.5.2 Effective Team Approach or Lack of Coordinated Patient Care

The qualitative analysis from both the solution focused sessions and staff survey comments demonstrated staff identified concerns and worked through these as part of the transition to using the SCM. This was also reflected in the quantitative analysis as no significant effect was found to be associated with the SCM promoting a team approach to the provision of nursing care. Figure 4.6 shows the odds ratio, demonstrated in a forest plot, for the question: *Does the MONC promote a team approach to the provision of nursing care?* The forest plot (Figure 4.6) shows that no statistically significant difference between three months post and pre SCM at either the hospital or division level was detected.

Figure 4.6  
Effect of SCM on Team Approach to the Provision of Nursing Care



### **4.10.3 Team Approach: 12 Months Post Implementation of SCM Solution Focused Sessions**

#### **4.10.3.1 Improved Patient Management**

The majority of comments made at the 12 month solution focused sessions were positive and included the two themes of improved patient management and compliant with using the SCM. The patient management theme incorporated improvements in patient safety by staff acknowledging the potential to reduce falls and ensure all care is provided, and improved coordination of care through a team approach.

#### **4.10.3.2 Compliance with SCM**

While staff reported the SCM was working well they also reported some staff continued to resist using the SCM in preference for using the patient allocation model.

#### **4.10.3.3 Non-Compliant with SCM**

##### *Resisting change*

Staff reported the SCM was not working well and identified a general lack of support for using the SCM. The following is an example from a 20 bed gastroenterology ward, where staff worked in pairs and were collectively responsible for nine patients.

##### *How do we get staff to use SCM?*

Staff at previous meeting had queried if the Nursing Director was supportive of the SCM and if he understood the difficulties the CNS and SDN were having in getting support for using the model. It was agreed by the CNS, SDN and other staff members that the Nursing Director be invited to inform staff of his position about the SCM and to assist in developing solutions around staff concerns.

The session commenced with a review of the SCM principles and the group consensus was that these were appropriate and should be complied with. The Nursing Director then provided the group with his reasons for supporting the SCM. These included external factors such as nursing shortages and changes in skill mix and the impact of these within the medical division. Discussion occurred around creating more opportunities for staff to work out how best to apply the principles and the need to integrate more regular education with staff at orientation. The group then agreed the CNS would discuss how best to use the SCM at ward meetings and the SDN agreed to ensure the SCM is included at orientation.

### **4.10.3.4 Staff Survey: Coordination of Patient Care**

The theme of effective team approach to coordinate patient care was developed from two staff comments that indicated this was obtained through good communication among colleagues in particular the shift coordinator.

#### **4.10.3.4.1 Lack of Coordinated Patient Care Among Health Care Team**

The majority of comments were related to missed care, caused through a perceived loss of patient centred care and poor communication skills. This is described by a nurse reporting: *“I think nursing was more patient-centred when you had full responsibility for patient, MONC leaves room for neglect - fullness if communication not good.”* However, another nurse identified both the benefits of the SCM in relation to enabling patient care requirements to be matched to nurse’s level of experience as she was: *“able to focus on patients to your ability and development”* and inefficiencies caused through poor communication as: *“care can be doubled up or missed, notes incomplete when two nurses doing care for same patients.”*

#### **4.10.3.4.2 Effective Team Approach or Lack of Coordinated Patient Care**

Like the three month study point, quantitative analysis did not conclusively show the SCM promoted a team approach to nursing care. Figure 4.6 shows a similar

pattern at 12 months as there was at three months compared to baseline measures with no significant difference detected. Although not significant, there is some evidence of an increase in the odds ratio (>1) between the pre and post SCM at twelve months for the hospital overall (OR =1.5), and the two divisions that received the intensive implementation, Rehabilitation and Orthopaedic (OR =1.8) and Medical Divisions (OR = 2.6), indicating an improved level of agreement. No difference was found between the two types of implementation at baseline or over time (between baseline and 12 months) in the teamwork/co-workers scale as shown in Table 4.19.

Table 4.19  
*Linear Regression of Teamwork / Co-workers Scale*

Teamwork/Co-workers	Coef	95% CI	P
12 month compared to pre	-.23	[-1.2, .81]	0.64
Intensive implementation	.42	[-1.1, 1.9]	0.57
Intensive implementation <u>X</u> 12 months	.24	[-1.2, 1.7]	0.74
Constant	17.6	[16.4, 18.7]	<0.001

Note. X indicates interaction between time and intensity

#### 4.11 Summary of Team Approach

At 12 months post implementation of the SCM, qualitative analysis demonstrated a reduction in the number of negative comments and concerns but some resistance to using the SCM remained. Quantitative analysis found the SCM did not promote a team approach in the organisation and provision of nursing care, nor was there a significant effect for the type of implementation method.

#### 4.12 Impact of Shared Care Model and Nursing Rounds

To investigate the impact of nursing rounds content analysis of the qualitative data from the solution focused sessions and staff survey was undertaken. In addition, quantitative analysis of two of the combined nursing rounds questions relating to determining if they had improved patient care and should be continued were investigated using a linear regression model.

### 4.12.1 Nursing Rounds: First Two and Three Months Post SCM

#### 4.12.1.1 Solution Focused Sessions Nursing Rounds

Two themes emerged from the solution focused sessions. These consisted of compliance and non-compliance with undertaking nursing rounds as shown in Table 4.20 for all study points post implementation of the SCM. The positive comments referred to a perception of fewer call bells and a reduction in reported patient falls.

Table 4.20  
*Theme and Categories for Nursing Rounds Post SCM*

<b>Theme and Categories</b>	<b>First 2/12 post SCM</b>	<b>First 2/12 solutions</b>	<b>3/12 post SCM</b>	<b>3/12 post solutions</b>	<b>12/12 post SCM</b>	<b>12/12 solutions</b>
<b>Theme</b>						
Compliance	2					
<b>Theme</b>						
Non-compliant						
<b>Categories</b>						
Not practical	5	3			1	3
Not being done	3		4	3	1	1

#### 4.12.1.1.1 Non-Compliant with Nursing Rounds

In the solution focused sessions at two months post implementation staff questioned the need for undertaking nursing rounds given they were frequently attending to patients and nursing rounds were often interrupted to respond to other patient care requirements. At three months post implementation concerns remained regarding the usefulness of nursing rounds and impracticality of their frequency. To overcome these difficulties staff either reduced the frequency or chose not to undertake the rounds. The following is an example from the 30 bed state major trauma unit (SMTU). On this ward staff worked in teams of two, each with primary responsibility for four patients. Nursing rounds were agreed to be undertaken during the day shift

immediately after handover at 0715, and 1330, prior to tea and meal breaks at 0900, 1130, 1630 and prior to the end of the afternoon shift at 1930hrs.

*How can we undertake nursing rounds when we get interrupted by patients?*

Two key areas were identified consisting of communicating with the patient and the paired nurses assessing and prioritising the patient's requirements. Staff agreed to inform patients after handover, while introducing themselves to the patients, of the frequency and purpose of the nursing rounds. All patient care requirements were to be prioritised on the basis of a patient's needs. Consequently, should a patient need more assistance during the nursing rounds an assessment was to be made between the pair to determine if one nurse could stay and attend to the patient while the other continued with the round or if both were required.

*How frequently should the nursing rounds be done?*

Staff agreed to change the frequency from three times in the morning shift to one at 1130 prior to the lunch break and twice in the afternoon at 1330 and 1930-2000.

Both solutions were trialled over a three week period after which time staff decided to cease undertaking the nursing rounds. This pattern was repeated on three other wards resulting in 17 wards continuing to use nursing rounds three months post implementation of the SCM.

### 4.12.1.2 Staff Survey Nursing Rounds Results

Table 4.21 shows the themes and categories resulting from the content analysis for three and 12 months post implementation.

Table 4.21  
*Themes and Categories for Nursing Rounds*

<b>Theme and Categories</b>	<b>3/12 post SCM</b>	<b>12/12 post SCM</b>
<b>Theme</b>		
Compliance	6	
<b>Theme</b>		
Non-compliant		
<b>Categories</b>		
No required	11	4
Not being done	19	20

The same sentiments expressed in the solution focused sessions were reported in the three month staff survey resulting in the same two themes emerging with similar categories.

Despite inconsistency in undertaking nursing rounds, comments for the improved patient care theme emphasised the benefit of working within a team as one nurse reported: *“Excellent if patients are heavy. Great for 13:00 to 19:30 to settle patients for nap and bed-time. Team nursing works well for very sick patients as get input from 2 nurses. Good for orange card patients.”*

The non-compliant theme revealed nurses did not have the time to undertake nursing rounds nor did they value these as patients received their care requirements. This was reflected most commonly with comments of: *“no time to do nursing care rounds. Patients still get what they need, when they need it.”* Consequently, nursing rounds were not being undertaken.

#### **4.12.2 Nursing Rounds: 12 Months Post SCM**

At 12 months, staff from a further six wards reported the nursing rounds were not helpful in the provision of patient care and they decided to cease these. Solution focused sessions were used to discuss their concerns and to formally record removal of the rounds from the SCM. At the end of the 12 month study point, five wards from the Medical Division and six wards from the Rehabilitation/Orthopaedic Division continued to include nursing rounds as part of their SCM. The Medical Division used the solution focussed sessions to agree to modify the content and reduce the frequency. Content was modified to remove undertaking vital signs and administer medications as these were within scheduled times and if additional were required, nurses would respond accordingly. Frequency was reduced to occur prior to meal breaks. The Rehabilitation/Orthopaedic Division elected not to change the content or frequency.

##### **4.12.2.1 Staff Survey: Nursing Rounds**

Consistent with the solution focused sessions, staff reported the formal structure of nursing rounds was no longer practiced but some of the positive components ensuring the paired or teamed nurses were aware of the grouped patients' requirements were maintained. This was identified by a nurse reporting: *“nursing rounds tend to be informal-both do not always go together but I see that there is communication so they all know what's happening.”*

The lack of support for nursing rounds is also shown in the quantitative analysis with a decrease in scores at 12 months by -0.6 compared to three month measures, though these were not statistically significant as shown in Table 4.22. However, a significant association was found for the intensity of implementation ( $p=0.016$ ) as shown in Table 4.22. No statistical difference was found at baseline, or over time between the two levels of intensity.

Table 4.22  
*Linear Regression of Nursing Rounds Scale*

Nursing rounds	Coef.	95 % CI	P
12 months compared to 3 months	-.63	[-1.4, 0.22]	0.136
Intensive implementation	1.05	[0.22, 1.8]	0.016
Intensive implementation <u>X</u> 12 months	-.78	[-1.9, 0.33]	0.158
Constant	3.3	[2.6, 4.1]	<0.001

Note. X indicates interaction between time and intensity

### 4.13 Summary of Nursing Rounds

Immediately following implementation of the SCM, staff reported concerns regarding both the necessity for and difficulties with complying with frequency of nursing rounds. This continued throughout the study resulting in four wards ceasing nursing rounds at three months and another 11 at 12 months post implementation. The only remaining wards using nursing rounds 12 months post implementation of the SCM were five of the Medical Division and all six of Rehabilitation/Orthopaedic Division. Both these divisions received intensive implementation and this was found to have a significant effect. Nursing rounds were not found to have improved patient care.

### 4.14 Impact of Shared Care Model and Handover

To investigate the impact of handover, content analysis of the qualitative data from the solution focused sessions and staff survey was undertaken. In addition, quantitative analysis of two of the combined handover questions relating to determining if they had improved patient care and should be continued were investigated using a linear regression model.

Eight wards choose to trial bed handover and two wards central board handover. Of the wards which chose to trial bedside handover all previously used a combination of the shift coordinator verbally handing over to all staff commencing the shift or those who commenced after handover receiving a taped handover made during the shift coordinator's verbal handover.

#### 4.14.1 Bedside Handover: First Two and Three Months Post SCM

##### 4.14.1.1 Solution Focused Sessions

Two themes emerged from the solution focused sessions with the emphasis on deterioration in patient management as shown in Table 4.23. The staff training theme emerged from comments in relation to requests for education on how to handover at the bedside, given the contrast from their traditional handover.

Table 4.23  
*Themes and Categories for Bedside Handover*

<b>Theme and Categories</b>	<b>First 2/12 post SCM</b>	<b>First 2/12 solutions</b>	<b>3/12 post SCM</b>	<b>3/12 post solutions</b>
<b>Theme</b>				
Staff training			1	
<b>Theme</b>				
Deterioration in patient management				
<b>Categories</b>				
Decrease in patient information	25	9	1	4
Disruptive to patient care	15	3		1
Lack of patient confidentiality	1	2		

The three categories for the deterioration in patient management theme captured staff concerns with bedside handover. Decrease in patient information caused the most concern as staff felt handover would be less comprehensive and they wouldn't be able to respond to patient needs or queries from health colleagues for patients they had not received handover. The next major concern was related to disrupting patients' rest period as afternoon handover coincided with this period and it was not possible to change the rest period time during the study period. In addition, concerns were raised regarding a loss of patient confidentiality by discussing sensitive issues within hearing of other patients.

#### **4.14.1.1.1 Staff training solutions**

Staff from all eight wards highlighted that many had not attended the education sessions prior to changing to bedside handover and more were required, along with further practice.

*How do we improve handover?*

This deficit was addressed by the facilitator, CNS/CNM and SDN providing ward based education using bedside handover scenarios followed by clinical demonstration. In addition, these staff subsequently supervised numerous handovers and provided constructive feedback. Further education was scheduled into each ward's education planner during the trial period.

#### **4.14.1.1.2 Decrease in Patient Information**

Concerns were raised that staff were not using the agreed template and there were inconsistencies in the standard of handover among staff.

*How can we improve the handover? What information do we need from handover?*

This example is from a 30 beds orthopaedic and neurosurgery ward, where nurses were paired in teams of two, one of whom was an experienced nurse and both were collectively responsible for eight patients.

Staff first listed reasons why they were not using template, such as didn't allow for checking specific nursing care requirements had been met, or detailing nursing treatment plan. Problems identified in relation to inconsistencies in handover were determined to be in the type and detail of information provided by different staff.

Staff determined two strategies to address these questions. Firstly, to cease using the template previously used for ward handover and to develop their own using the headings of the patient care plan. Secondly, to develop a standard approach to

undertaking bedside handover. This included covering current treatment and effect, and using relevant charts such as medication and intravenous to indicate treatment and checking invasive lines. In addition, staff were encouraged to promote patient participation by asking if they wished to inform the nurses of any aspect of their management.

At subsequent meetings staff reported these strategies had assisted in the quality of the information provided and patient care improvements. They provided examples of improved care such as better planning with patients' intravenous fluid requirements and medication management as nurses ensured these had been ordered prior to handover and were able to demonstrate this with the intravenous fluids and chart checking component of handover. Nurses also reported helpful information was gained by asking patients information about their management such as information not yet passed on by the medical staff including surgery and discharge dates.

#### **4.14.1.1.3 Disruptive to Care and Maintaining Patient Confidentiality**

*How can the patients still get their rest with handover at 1300 and rest period at 1300-1400? How can we keep patient confidentiality with bedside handover?*

Both questions were considered by staff to be interconnected. The following example is from a 30 bed orthopaedic and spinal ward. On this ward nurses were paired in teams of two consisting of one experienced nurse. Each nurse was primarily responsible for four patients but supported each other with manual handling, bed baths and complex care. Strategies were determined to investigate possibility of changing the time of patients' rest period and to develop an information sheet for patients and their visitors. The CNS agreed to formally request extending the rest period by either 30 minutes or one hour to enable bedside handover and sufficient time for patients to rest without interruption. Two staff agreed to develop an information sheet informing patients and their visitors about bedside handover and the need for patient privacy during handover. Staff identified the solution from a patient centred perspective and the time change was discussed with patients and their visitors.

To maintain confidentiality staff agreed to discuss sensitive information outside the patient's room and to point to the care plan and handover sheet for things they preferred not to verbalise in this context.

#### 4.14.1.2 Staff Survey Bedside Handover Results

While the deterioration in patient management theme, identified by the content analysis, remained, in the solution focused sessions a new theme of improved management emerged at 3 and 12 months post SCM as shown in Table 4.24.

Table 4.24  
*Themes and Categories for Bedside Handover*

Theme/Categories	3/12 post SCM	12/12 post SCM
<b>Theme</b>		
Improved patient management		
<b>Categories</b>		
Improved patient care		1
Checking charts	1	
Staff training	2	
<b>Theme</b>		
Deterioration in patient management		
<b>Categories</b>		
Lack of patient confidentiality	7	5
Disruptive to patient care	6	
Decrease in patient information	6	4

##### 4.14.1.2.1 Improved Patient Management

The few improved management comments were related to acknowledging benefits of bedside handover but recognising the need for expertise among staff as illustrated by one nurse commenting: *“bedside handovers provide better checking*

*mechanisms- but it doesn't ensure accurate info [information] or relevant info [information] depending on calibre of staff."*

#### **4.14.1.2.2 Deterioration in Patient Management**

The same concerns raised in the solution focused sessions were reported in the staff survey. Issues relating to maintaining confidentiality remained with one nurse reporting: *"there is no patient confidentiality with bedside handover"* and disrupting the rest period with another nurse remarking: *"bedside handover always impedes on rest period and, no matter how quiet you are, 3-4 people walking and talking in room disturbs patients."* In addition, patient safety concerns from not knowing all patients' details continued to be raised. As one nurse commented: *"I miss detailed handover for all the ward area. I feel it totally unsafe to not know all my ward patients."*

At the end of the three month study period one of the Rehabilitation and Orthopaedic wards elected to cease bedside handover and returned to ward handover, as they could not overcome concerns with maintaining confidentiality and found they were not able to promptly respond to patients requests for assistance or their relatives queries.

#### **4.14.2 Bedside Handover: 12 Months Post SCM**

No solution focused sessions were held at 12 months for bedside handover as staff did not raise any issues they wished to address.

##### **4.14.2.1 Staff Survey: Bedside Handover**

Fewer comments were reported for both themes at 12 months post implementation of the SCM as shown in Table 4.24.

###### **4.14.2.1.1 Improved Patient Management**

The only comment reported at 12 months for the improved management theme, while acknowledging the value of patient involvement, still highlighted concerns with maintaining patient confidentiality. As one nurse commented: *"handover @ [at]*

*bedside allows patients to add their input. Can be quite public though and not confidential.”*

#### **4.14.2.1.2 Deterioration in Patient Management**

The two categories where comments were made were lack of patient confidentiality and decrease in patient information. Comments for both of these were consistent with those made at three months post implementation. Confidentiality issues were related to a combination of incomplete information being handed over and compromising patient confidentiality. As described by one nurse: *“bedside handovers are cumbersome, take time and depend on personal use. They compromise patient confidentiality as other patients hear handover. Information missed as discussion re patient behaviour, understanding, etc not told next to patient.”*

A decrease in patient information reflected staff preference for a ward handover of all patients. As reported by another nurse: *each staff member should be aware of other patients’ conditions on the ward ie by full ward handover. If you answer someone else’s bell you have no idea about patients’ or plan of care, procedures, etc. It is unsafe.”*

Quantitative analysis of the staff survey to determine if bedside handover improved patient care requirements or communication demonstrated no statistical difference at baseline, or over time between the two levels of intensity as shown in Table 4.25. Despite the small sample size of 114 which limited the possibility of showing any statistical effect, qualitative analysis demonstrated staff continued to have difficulties with bedside handover.

Table 4.25  
*Linear Regression of Bedside Handover*

Bed handover improves patient care or communication	OR	95 % CI	P
12 months compared to 3 months	.75	[-.43, 1.9]	0.112
Intensive implementation	.86	[-.33, 2.0]	0.090
Intensive implementation <u>X</u> 12 months	-.66	[-1.8, 0.52]	0.138
Constant	6.2	[6.2, 6.2]	<0.001

Note. X indicates interaction between time and intensity

#### 4.14.2.1.3 Summary of Bedside Handover

All eight wards who chose to trial bedside handover throughout the study period reported concerns relating to not maintaining patient confidentiality and the loss of handover on all ward patients which had the potential to adversely affect patient safety. Bedside handover was not found to improve patient care requirements or communication. At the end of the 12 month study period seven wards continued to use bedside handover as part of their SCM.

### 4.14.3 Board Handover: First Two and Three Months Post SCM

#### 4.14.3.1 Solution Focused Sessions

One theme emerged from the solution focused session: improved patient management as shown in Table 4.26. Staff reported benefits gained through getting updates regarding patient management shortly after medical rounds and ensuring all team members were aware of changes.

Table 4.26  
*Theme for Board Handover Post SCM*

Theme	First 2/12 Post SCM	12/12 Post SCM	12/12 Post solutions
Improved patient management	3	1	1

#### 4.14.3.2 Staff Survey Board Handover Results

The same sentiments were expressed in the staff survey resulting in the emergence of the same theme as shown in Table 4.27. Board handover was reported as being: “*very useful because it helps to update information about patients,*” thus indicating its use as a communication strategy for patient management.

Table 4.27  
*Theme and Categories for Board handover*

Themes	3/12 post SCM	12/12 post SCM
Themes		
Improved patient management	5	
Non compliance		2

#### **4.14.4 Board Handover: 12 Months Post SCM**

##### **4.14.4.1 Solution Focused Session**

At the 12 month study point one of the two wards raised concerns regarding the need for all staff to attend board handover. This was resolved by the ward agreeing that it would only be used during handover between the shift coordinators, thereby ceasing its use as a communication strategy to inform all staff of patient changes during the shift.

##### **4.14.4.2 Staff Survey: Board Handover**

The staff survey comments were related only to compliance issues and hence the emergence of a new theme as shown in Table 4.27. Quantitative analysis from the staff survey to determine if board handover improved patient care requirements or communication demonstrated no statistical effect at 12 months compared to 3 months post implementation of board handover as shown in Table 4.28. Despite the small sample size of 57 which limited the possibility of showing any statistical effect, qualitative analysis demonstrated limited support for using board handover. As this question was asked only to staff in wards that received the intensive method the intensity term was not included in the statistical model.

Table 4.28

*Linear Regression of Board Handover: Improvement in Patient Care Requirements or Communication*

Board handover improves patient care or communication 2 wards	OR	95 % CI	P
12 months compared to 3 months	.40	[-1.0, 1.8]	0.364
Constant	4.2	[0.84, 7.6]	0.033

#### 4.15 Summary of Board Handover

Of the two wards that opted to use board handover as a communication strategy to inform staff of changes in patient's management one ceased using it at 12 months post implementation. Board handover was not found to improve patient care requirements or communication.

#### 4.16 Chapter Summary

The objective of the staff results chapter was to present the pilot study findings, determine demographic characteristics, establish staff values and investigate the impact the SCM had on staff workload, culture of support, team approach to provision of nursing care, and specific interventions of nursing rounds, bedside and board handover.

The pilot study findings indicated the SCM supported staff in the delivery of care and highlighted components that influenced the level of support. It also demonstrated a high level of satisfaction with the methodology and enabled support for the main study to be obtained from the NEC.

In the main study, content analysis for the three reflective practice exercises demonstrated staff values represented in five themes consisting of: provision of good patient care, culture of learning and development, healthy environment that supports practice, provision of good nursing care and effective management of care. The culture of learning and development theme was identified in both the heart of practice

and nurse assured reflective practice exercises. In addition, provision of good nursing care or good patient care themes were identified reflecting the patient or nurse perspective of what each wanted to be assured of.

Qualitative and quantitative analysis to investigate the impact the SCM had on staff workload demonstrated staff had difficulties managing workload while using the patient allocation model and these continued post implementation of the SCM. At three months there was a statistically significant increase in workload for the hospital overall and Critical Care Division as staff adjusted to using the SCM. However, as staff became more familiar with the SCM by 12 months there was a return to baseline measures for the hospital and all divisions with the exception of Critical Care Division which continued to report a statistically significant increase in staff workload. Consequently, the SCM was not found to ensure workloads were more manageable. However, when an experienced nurse worked with a less experienced nurse, either in pairs or teams, workload was found to be statistically significantly more manageable at the hospital level and the Rehabilitation/Orthopaedic Division. No statistically significant association was found between the impact of time over the study period and the types of implementation.

A positive influence by the SCM on the culture of support was demonstrated with qualitative analysis at all study points indicating staff acknowledged positive learning and development benefits associated with the SCM. However, quantitative analysis at three months demonstrated the SCM had a statistically significant negative impact on the culture of support for the hospital overall and the Rehabilitation/Orthopaedic Division. At the 12 month study point quantitative analysis detected no difference from baseline measures. No statistically significant association was found between time and intensity of implementation over the study period. The SCM was not found to statistically significantly improve the culture of support for nursing staff. However, when nurses were paired with a more experienced nurse a significant effect on learning opportunities was found for the hospital and Rehabilitation/Orthopaedic Division.

Despite the SCM promoting a team approach in the organisation and provision of nursing care a statistically significant effect was not found. Nor was there a

statistically significant effect for the type of implementation method or over time. At 12 months post implementation of the SCM, qualitative analysis demonstrated a reduction in the number of negative comments and concerns but some resistance to using the SCM remained.

Qualitative analysis throughout the study periods demonstrated staff resistance or dislike for the SCM components of nursing rounds, bedside and board handover. This resulted in a number of wards choosing to cease these interventions during the study period. Quantitative analysis demonstrated no statistically significant improvements to patient care was found for nursing rounds, nor statistically significant effect found on improving handover of patient care requirements or communication for bedside and board handover. In addition no statistically significant association was found between the time and the intensity of implementation over the study period. Of these three SCM components, the only statistically significant effect found was for the nursing rounds for the intensive implementation method. At the 12 months study period only wards from the Medical Division and Rehabilitation/Orthopaedic Division, who received this method of implementation, choose to continue to use nursing rounds as part of their SCM.

The next chapter, chapter five provides the qualitative and quantitative analysis from patient surveys and quantitative analysis from the AIMS and patient complaints databases. The impact the SCM had on patients' satisfaction, patients' complaints and adverse incidents is reported.

## CHAPTER FIVE

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### ***IMPACT OF SHARED CARE MODEL ON PATIENTS***

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This chapter presents the pilot study findings, and then outlines the results of the qualitative and quantitative analysis from the patient surveys and quantitative analysis from the AIMS and patient complaints databases. The analysis enabled demographic characteristics to be determined, and investigated the impact the SCM had on patient satisfaction, patient complaints and adverse incidents. Each of the variables investigated concludes with a summary of findings.

#### **5.1 Pilot Study**

Patients who were discharged from the pilot wards in the two weeks following three months implementation of the SCM were contacted by either the researcher or an assistant and invited to participate in a telephone survey. Of the 39 patients discharged, 27 were contactable and six agreed to participate resulting in a response rate of 22%. Results showed 100% satisfaction with personal care, 87% satisfaction with clinical care and 76% satisfaction with discharge management. The purpose of the survey was to assist with developing the patient satisfaction survey. Consequently, no comparisons could be made with pre SCM patient satisfaction levels.

Falls had been identified as both wards' principal incident type so a comparative measure was made using the same three months in the previous year as those for the three months of implementation of the SCM. Results showed there were 11 falls during the period the SCM was in use compared to 16 for the comparative period.

##### **5.1.1 Summary of Pilot Study**

The low response rate from the telephone survey meant no conclusive findings could be drawn regarding patient satisfaction with nursing care. This also highlighted the need to include a postal survey to increase the response rate in the main study. There was a reduction in the number of patient falls when the SCM was used, compared to the same period 12 months previously when the patient allocation model was used.

## 5.2 Main Study

### 5.2.1 Demographics

Of the 2133 surveys distributed, 1799 discharged patients were eligible to participate, that is, in their place of residence, English speaking and able to complete the questionnaire. Of these 1156 completed the survey resulting in a response rate of 64%. The highest response rate came from contacting participants by phone, with 740 (89%) of the 840 discharged patients agreeing to participate compared with 416 (43%) of the 959 sent a postal survey.

Table 5.1 shows the hospital's and divisions' categorical demographics of the patients' responses for each of the two survey periods. Not all respondents completed all the demographic questions. Within the Surgical Division and the hospital overall, there was a statistically significant increase in the proportion of patients at 12 months who were tertiary educated, ( $p = 0.009$ ) and ( $p = 0.030$ ) respectively. In the Medical Division, there was a statistically significant increase in the proportion of patients who had a partner ( $p = 0.044$ ).

The hospital's and divisions' continuous demographics of the patients' responses for each of the two study periods are shown in Table 5.2. Not all respondents completed all the demographic questions. The only statistically significant difference found between the two study periods was for the reduction in the variable of days in hospital ( $p = 0.001$ ) at the hospital level.

Table 5.1

*Hospital and Division's Patient's Demographic Categorical Characteristics at each Study Point*

Variables	<b>Hospital</b>					<b>Medical Specialties</b>				
	Pre SCM N=483		12 month post SCM N=550		P	Pre SCM N=130		12 month post SCM N=145		P
	N	(%)	N	(%)		N	(%)	N	(%)	
Female	206	(42.7)	221	(40.2)	<b>0.436</b>	58	(44.6)	60	(41.3)	0.293
Aboriginal or Torres strait islander	15	(3.10)	17	(3.09)	<b>0.895</b>	6	(4.6)	5	(3.4)	0.875
With partner	251	(51.9)	298	(54.2)	<b>0.175</b>	58	(44.6)	83	(57.2)	0.044
Tertiary educated	48	(9.9)	68	(12.3)	<b>0.030</b>	9	(6.9)	14	(6.2)	0.248
Employed	132	(27.3)	121	(22.0)	<b>0.111</b>	24	(18.4)	21	(16.5)	0.554
	<b>Rehabilitation and Orthopaedic</b>					<b>Surgical</b>				
	Pre SCM N=202		12 month post SCM N=228			Pre SCM N=101		12 month post SCM N=71		
Variables	N	(%)	N	(%)	P	N	(%)	N	(%)	P
Female	91	(45.0)	93	(40.8)	0.130	34	(33.6)	30	(42.2)	0.370
Aboriginal or Torres strait islander	3	(1.5)	6	(2.6)	0.669	5	(4.9)	4	(5.6)	0.904
With partner	100	(49.5)	114	(50.0)	0.988	54	(53.4)	35	(49.2)	0.425
Tertiary educated	24	(11.9)	30	(13.2)	0.538	6	(5.9)	12	(16.9)	0.009
Employed	51	(25.2)	59	(25.9)	0.528	36	(35.6)	20	(28.1)	0.227
	<b>Cancer and Neurosciences</b>					<b>Critical Care</b>				
	Pre SCM N=23		12 month post SCM N=28			Pre SCM N=27		12 month post SCM N=78		
Variables	N	(%)	N	(%)	P	N	(%)	N	(%)	P
Female	7	(30.4)	14	(50.0)	0.155	6	(22.2)	24	(30.7)	0.383
Aboriginal or Torres strait islander	0		1	(3.5)	0.270	0		1	(1.2)	0.457
With partner	14	(60.8)	14	(50.0)	0.333	15	(60.0)	52	(66.6)	0.284
Tertiary educated	3	(13.0)	4	(14.3)	0.580	2	(7.4)	8	(10.2)	0.549
Employed	6	(26.0)	3	(10.7)	0.151	7	(25.9)	18	(23.0)	0.767

Table 5.2  
*Hospital and Division's Patient's Demographic Continuous Characteristics at each Study Point*

	<b>Hospital</b>						
	<b>Pre SCM</b>			<b>12 month post SCM</b>			<b>P</b>
	<b>N</b>	<b>Median</b>	<b>IQR</b>	<b>N</b>	<b>Median</b>	<b>IQR</b>	
<b>Years</b>							
<b>Age</b>	<b>467</b>	<b>56</b>	<b>29</b>	<b>535</b>	<b>60</b>	<b>30</b>	<b>0.115</b>
<b>Days in hospital</b>	<b>450</b>	<b>6.0</b>	<b>12</b>	<b>493</b>	<b>4.0</b>	<b>9.0</b>	<b>0.001</b>
<b>Number of admissions</b>	<b>418</b>	<b>1.0</b>	<b>2.0</b>	<b>488</b>	<b>1.0</b>	<b>2.0</b>	<b>0.767</b>
<b>Medical Specialties</b>							
	<b>Pre SCM</b>			<b>12 month post SCM</b>			
<b>Years</b>	<b>N</b>	<b>Median</b>	<b>IQR</b>	<b>N</b>	<b>Median</b>	<b>IQR</b>	<b>P</b>
Age	128	63	24	138	65.5	29	0.781
Days in hospital	123	4.0	5.0	130	3.0	6.0	0.039
Number of admissions	112	2.0	4.0	118	2.0	3.0	0.539
<b>Rehabilitation and Orthopaedic</b>							
	<b>Pre SCM</b>			<b>12 month post SCM</b>			
<b>Years</b>	<b>N</b>	<b>Median</b>	<b>IQR</b>	<b>N</b>	<b>Median</b>	<b>IQR</b>	<b>P</b>
Age	194	53	24	222	56	31	0.370
Days in hospital	191	10	24	195	8	24	0.246
Number of admissions	185	0.0	1.0	202	0.0	1.0	0.916
<b>Surgical</b>							
	<b>Pre SCM</b>			<b>12 month post SCM</b>			
<b>Years</b>	<b>N</b>	<b>Median</b>	<b>IQR</b>	<b>N</b>	<b>Median</b>	<b>IQR</b>	<b>P</b>
Age	97	52	36	71	61	27	0.297
Days in hospital	93	8.0	24	65	4.0	6.0	0.127
Number of admissions	87	0.0	2.0	65	0.0	2.0	0.979
<b>Cancer and Neuroscience</b>							
	<b>Pre SCM</b>			<b>12 month post SCM</b>			
<b>Years</b>	<b>N</b>	<b>Median</b>	<b>IQR</b>	<b>N</b>	<b>Median</b>	<b>IQR</b>	<b>P</b>
Age	22	59	22	28	60.5	14.5	0.249
Days in hospital	19	5.0	6.0	28	4.5	11.5	0.879
Number of admissions	15	2.0	4.0	27	2.0	4.0	0.979
<b>Critical Care</b>							
	<b>Pre SCM</b>			<b>12 month post SCM</b>			
<b>Years</b>	<b>N</b>	<b>Median</b>	<b>IQR</b>	<b>N</b>	<b>Median</b>	<b>IQR</b>	<b>P</b>
Age	26	64.5	24	76	62.5	20.5	0.463
Days in hospital	24	2.0	5.0	75	2.0	3.0	0.955
Number of admissions	19	2.0	2.0	76	1.0	2.5	0.060

## 5.3 Impact of SCM on Patient Satisfaction

### 5.3.1 Patient survey pre and 12 months post implementation of SCM

Three themes emerged from the content analysis of patient survey comments pre and 12 months post SCM as shown in Table 5.3. These were good care, poor care and poor environment. The majority of comments reflected patients' satisfaction with nursing care across both study periods. Satisfaction was most commonly described as: *"Nurses were great"*, *"Nurses give very good care"*, *"They do a fantastic job"* and *"They are very caring and gentle."* There was concordance with the quantitative analysis as no statistically significant effect ( $p = 0.229$ ) was found between the two study periods for the quantitative analysis to investigate the specific question for level of satisfaction with nursing care (as shown in Table 5.4). Patients reported a high level of satisfaction with nursing care when both the patient allocation (84%) and SCM was in use (86%).

The good care theme also included *happy with service category* which patients commonly identified as: *"Couldn't speak more highly of care/treatment I have been given"*, *"In general I am happy with the service"*, *"I am very happy with care"* and an unique comment of: *"Other than the fact that I lost this top section of my right thumb I would give all associated with my care thumbs up."*

Table 5.3  
 Themes and Categories: Patient Satisfaction

<b>Theme and categories</b>	<b>Pre SCM N</b>	<b>12/12 post SCM N</b>
<i>Good care</i>		
<b>Categories</b>		
<i>Happy with nursing care</i>	70	70
<i>Happy with service</i>	33	26
<b>Theme</b>		
<i>Poor care</i>		
<b>Categories</b>		
<i>Poor clinical skills</i>	25	27
<i>Insufficient staffing</i>	19	
<i>Poor communication between nurses and patients</i>	13	23
<i>Delays with procedures</i>	12	7
<i>Poor discharge management</i>	11	25
<i>Poor medication management</i>	10	7
<b>Theme</b>		
<i>Poor environment</i>		
<b>Categories</b>		
<i>Poor facilities</i>	12	9
<i>Mixed gender in rooms</i>	5	5

Note. Number refers to number of individual comments reported by individual patients.

Table 5.4  
 Logistic Regression of Satisfaction with Nursing Care

Satisfaction with nursing care	OR	95 % CI	P
12months post SCM compared with pre SCM	1.20	[-0.13, 0.56]	0.229

Despite reporting high levels of satisfaction with nursing care, the majority of comments in the poor care theme across both study periods were related to nurses'

poor clinical skills as captured in the following patient comment when the patient allocation model was in use:

*One nurse who cared for me did not know what she was doing. She sleuthed around. She felt on the outside of my ankle for my pulse when my artery is on the inside. She even said to me once 'I don't know where these go' about wires stuck to me. She seemed to look around a lot as if looking for someone to see if they could notice that she didn't know what she was doing. It bothered me that this lady was caring for me. She didn't know basic things and didn't seem confident.*

Another patient commented when the SCM was in use:

*A few nursing staff were excellent, had a good knowledge base and knew what they were doing, were caring and considerate. Most nursing staff did not have the required skills, knowledge and consideration to adequately care for their patients and ensure their stay in hospital was less traumatic and more comfortable.*

Patients reported the impact of insufficient staff pre SCM with one patient commenting: *"Did their best but they were understaffed. Need more experienced staff,"* but no patient commented on staffing levels post SCM.

Within the poor care theme there were increases in poor communication between nurses and patients and poor discharge management. Patients reported the main causes of poor communication pre SCM was because of language difficulties with nurses who English is their second language as reflected in a patient's comment:

*"Worst experience in hospital. Nursing staff didn't understand what I was trying to tell them. Language difficulties for foreign nurses."*

In addition, to patients not understanding nursing staff, there was also communication difficulties caused by nursing staff not understanding patients, with another patient commenting:

*"A bit of trouble with communication with ESL (English as second language) nursing staff although I found these staff to be the most caring."*

While concerns regarding understanding nursing staff and vice versa when English was their second language remained when the SCM was in use, more generic comments were made regarding informing patients about their care. This is captured by the following statement:

*Each nurse told pt something different, no knowledge of when surgery but made to fast. Didn't get told when discharge, but when Mother came to visit told could go home but waited for a very long time to then be discharged. No communication skills, and given no idea how to care for wound or when to take bandage off.*

A discharge scale was constructed comprising questions related to arrangements for discharge and the provision of information related to discharge medications, condition and action to take if condition deteriorated following discharge. Despite the increase in qualitative comments regarding poor discharge management which were reported as insufficient information regarding home care, quantitative analysis of the discharge scale demonstrated a significant improvement over time ( $p = 0.0002$ ), thus, indicating an improvement in managing patient discharge since implementing the SCM. The clinical scale representing the nurses' knowledge, professionalism and clinical care did not indicate a significant shift in patients' opinions over time, as shown in Table 5.5.

Table 5.5  
*Effect of MONC on Survey Scales at each Study Point*

	N	Median	IQR	P
<b>Clinical</b>				
Pre SCM	483	47	10.0	
Post SCM	550	45	9.0	0.0750
<b>Discharge</b>				
Pre SCM	483	15	8.0	
Post SCM	550	14	7.0	0.0002

The number of comments in the remaining categories of the poor care theme -

delays with procedures and poor medication management - were reduced when surveyed during the SCM.

Common reasons for poor medication management across both study periods were nurses preparing to or administering the wrong medication, as described by a patient when the patient allocation model was in use: *“given medication which did not apply to me and conflicting information regarding another medication. It took 2 visits to my GP and two phone calls to RPH (by the GP) to sort this matter out.”* When the SCM was in use another patient reported: *“allergic to Ibuprofen – nurses went to administer Ibuprofen (even though on order of Doctor) nurses didn’t read chart clearly showing patient’s allergy sticker.”*

Patients reported the same type of delays caused by poor organisation of patient management at both study periods. During the period when the patient allocation model was being used a patient reported:

*I stayed in hospital for two nights. The care was very good. However, my stay was lengthened because of the time it took to organise tests and for doctors to read results. This was no fault of the nurses; the delay was due to doctors taking a long time to 1. Arrive, 2. Organise required tests 3. Read results of tests. I occupied a bed for two nights when everything could have been completed within one night and therefore could have freed a bed for another patient.*

Another patient’s relative, when the SCM was in use, reported:

*patient had to repeat information many many times as each new person came to see him. Didn’t get his procedure done even after fasting all day then he couldn’t be fitted in for the procedure. Resources aren’t adequate to get the best service.*

Throughout the study period, the poor environment theme, reflected patients concerns regarding the hospital’s poor facilities and their dislike for mixed gender rooms. One patient captured the sentiments of this theme by commenting: *“Rehabilitation centre is a dump. Surplus money from government should be distributed to this area. Women sharing rooms with men is not appropriate.”*

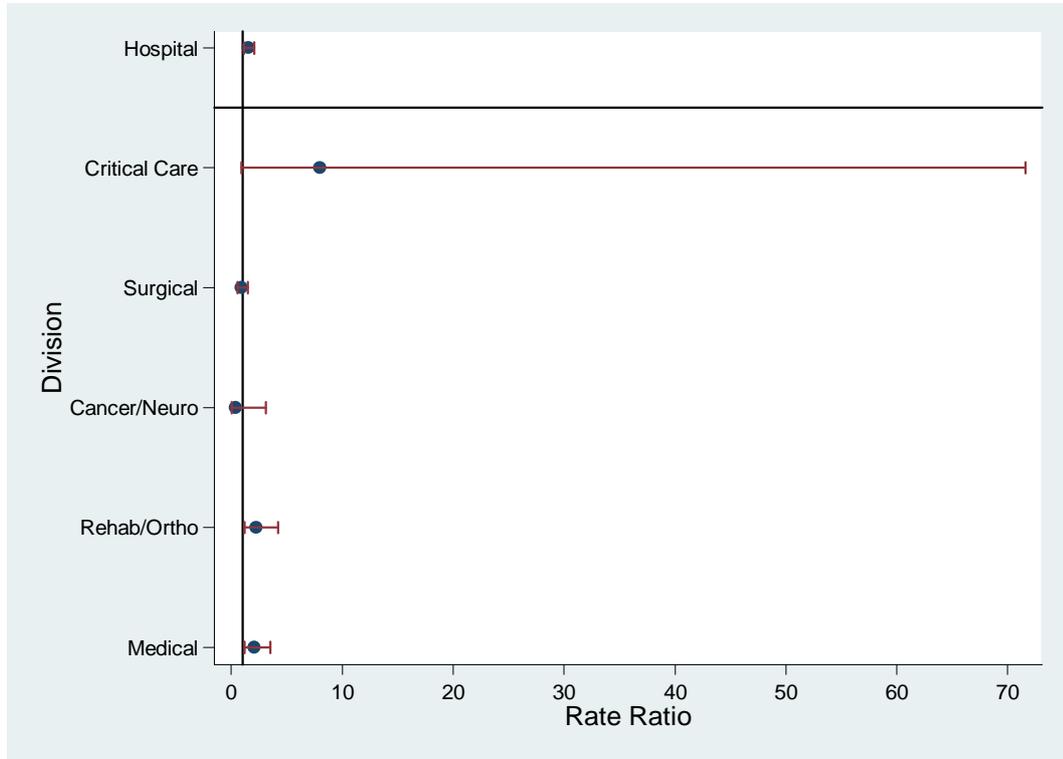
## 5.4 Impact of SCM on Patient Complaints

Table 5.6 shows the number of nursing complaints for two years prior to the SCM and one year post implementation. The largest number of complaints reported were related to Quality of Clinical Care with almost equal numbers of complaints in the one year following SCM compared to the two previous years. This 50% increase in complaints during the SCM model was statistically significant for the hospital overall (IRR =1.5, 95% CI [1.13, 2.07], p=0.006) and the Medical Division (IRR = 2.0, CI [1.21, 3.5], p= 0.008) and the Rehabilitation and Orthopedic Division (IRR = 2.2, CI [1.21, 4.20], p = 0.063) as shown in Figure 5.1. Examples of this category of complaints for nursing care consist of inadequate assistance with daily living activities, inadequate pain control and delays in requesting and receiving analgesic, inadequate discharge planning and inexperience for complexity of procedure.

Table 5.6  
*Number and Type of Patient Complaints by Division and Hospital*

MOC	Medical		Rehab/ Ortho		Cancer/ Neuro		Surgical		Critical Care		Hospital	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Rights/Respect/ Dignity	32	7	12	8	2	1	30	9	3	3	86	28
Access	2	1	6	2	1	0	3	2	0	0	12	6
Communication	17	10	8	8	2	1	14	8	1	2	47	33
Decision making	0	0	1	0	0	0	2	1	0	0	4	1
Quality Clinical Care	24	31	17	24	4	1	41	22	1	4	87	82
Costs	15	16	2	1	2	1	6	11	5	3	30	32
Grievances	1	0	0	0	0	0	0	0	1	0	2	0
Corporate Services	1	3	4	3	1	0	1	3	0	0	7	9
Professional Conduct	2	2	1	2	0	1	0	1	0	0	3	6

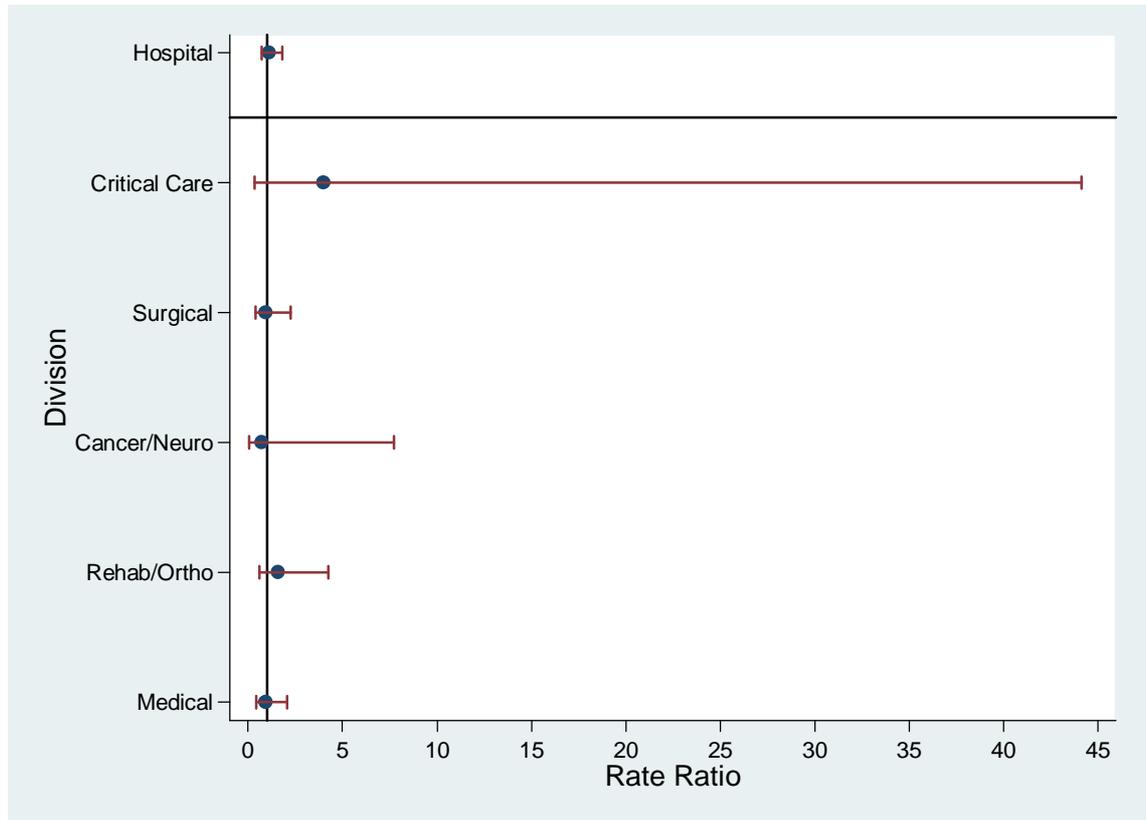
Figure 5.1  
*Effect of SCM on Quality Clinical Care Complaints for Hospital and Divisions*



The increase in nursing complaints post SCM for the category of Communication was not found to be significant for both the hospital and divisions as shown in Figure 5.2. Examples of nursing communication complaints include failure to listen to the patient and act on the information and inappropriate verbal and non

verbal communication such as irrelevant or misplaced comments and inappropriate facial expression, voice tone or demeanour.

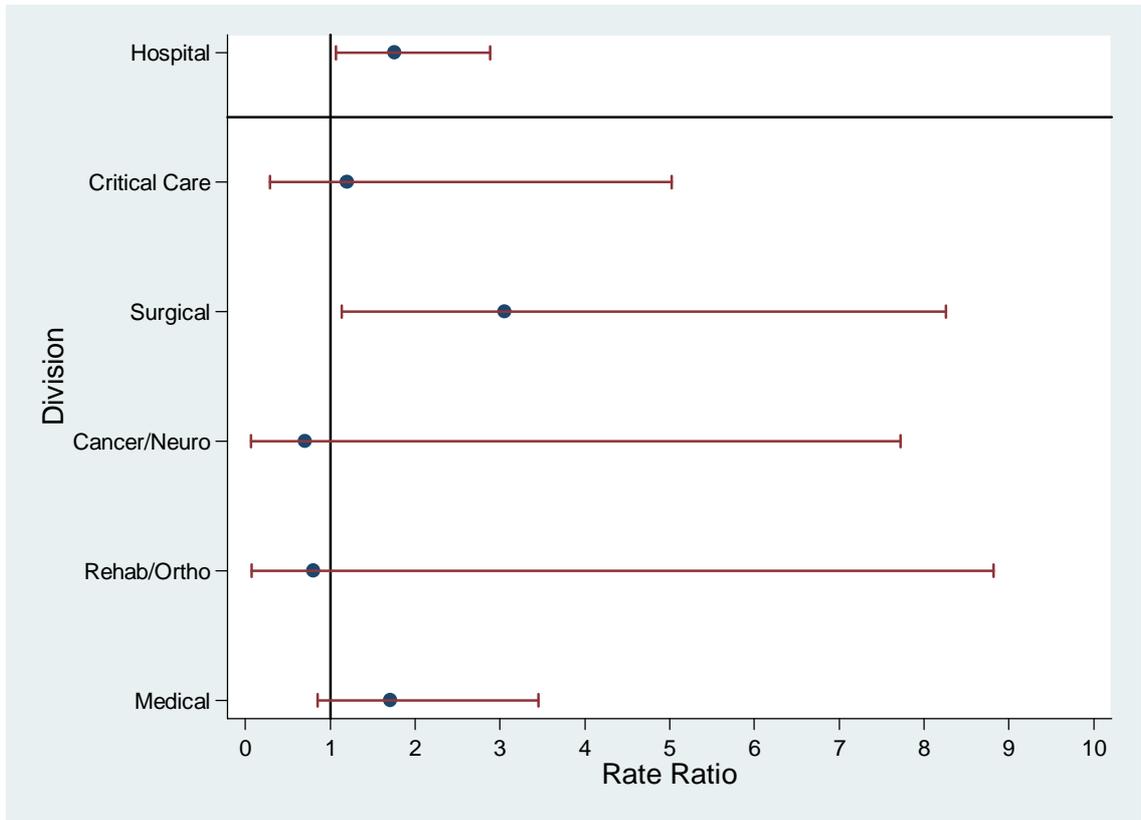
Figure 5.2  
*Effect of SCM on Communication Complaints for Hospital and Divisions*



There was a statistically significant increase in the number of complaints relating to cost post implementation of the SCM for the hospital overall (IRR = 1.7, 95% CI [1.06, 2.88],  $p = 0.027$ ) and for the Surgical Division (IRR = 3.0, CI [1.12, 8.26],  $p = 0.028$ ) (Figure 5.3). Typical nursing cost complaints are caused by

unsatisfactory process for safe keeping of patients' property resulting in items, usually dentures and or glasses being lost while in hospital.

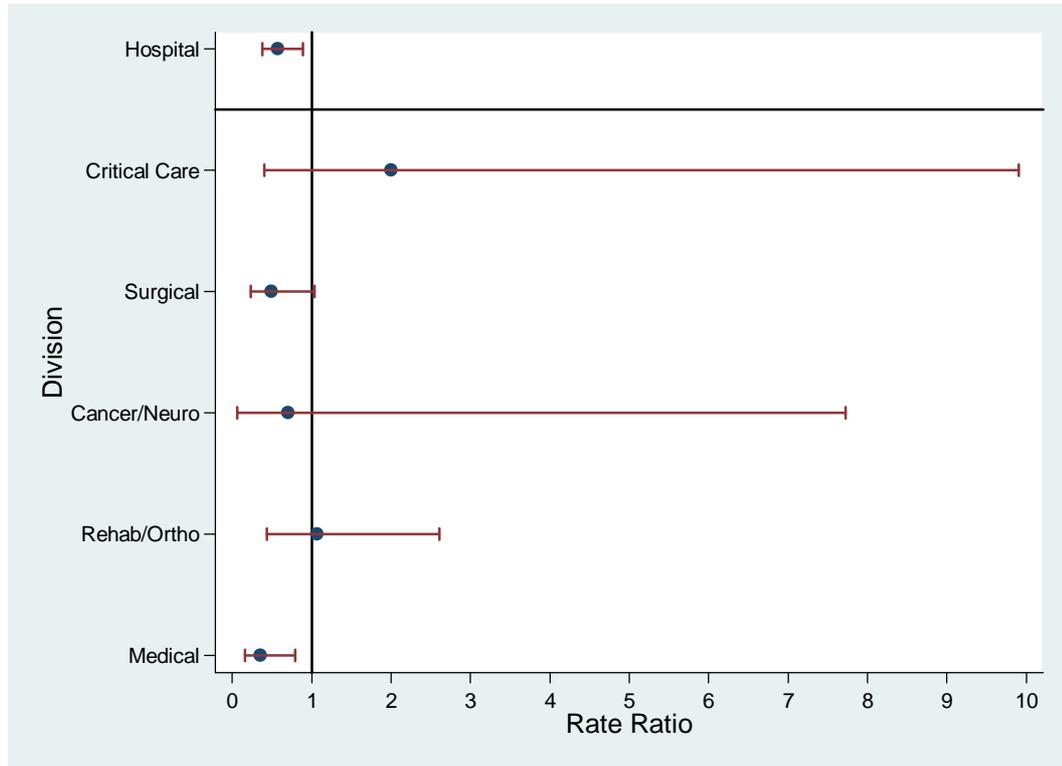
Figure 5.3  
Effect of SCM on Costs Complaints for Hospital and Divisions



There was a statistically significant decrease in the number of complaints relating to Rights, Respect and Dignity over time in both the Medical Division (IRR = 0.35, 95% CI [0.15, 0.79],  $p = 0.012$ ) and the hospital overall (IRR = 0.57, CI [0.37, 0.88],  $p = 0.012$ ) post implementation of the SCM (Figure 5.4). Common complaints include inconsiderate service represented by a lack of courtesy such as lack of

politeness or kindness, ignoring or negative attitude, a patronising or overbearing manner, failure to ensure privacy and absence of caring.

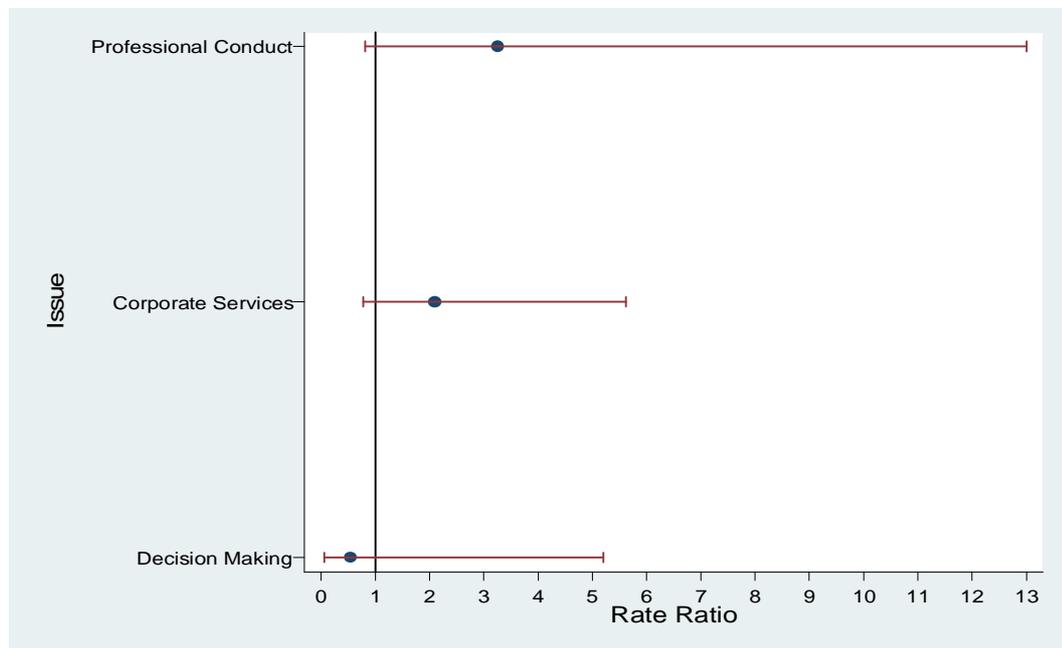
Figure 5.4  
*Effect of SCM on Rights Respect Dignity Complaints for Hospital and Divisions*



Three other areas of nursing complaints that have similar components as Rights, Respect and Dignity, are: Professional Conduct, Decision making and Corporate Services. Examples of nursing complaints associated with these categories are, unprofessional behavior, such as loud noisy language and swearing, failure to involve patient in decision making when attending to nursing care and inadequate provision of privacy, respectively.

Table 5.6 shows an increase in both professional Conduct and Corporate Services and a decrease in Decision Making post implementation of the SCM. However, no statistically significant effect was found, as shown in Figure 5.5. Analysis at divisional level was not conducted for these three complaints due to insufficient data. In addition, no complaints of Grievance against nursing staff were made post implementation of the SCM.

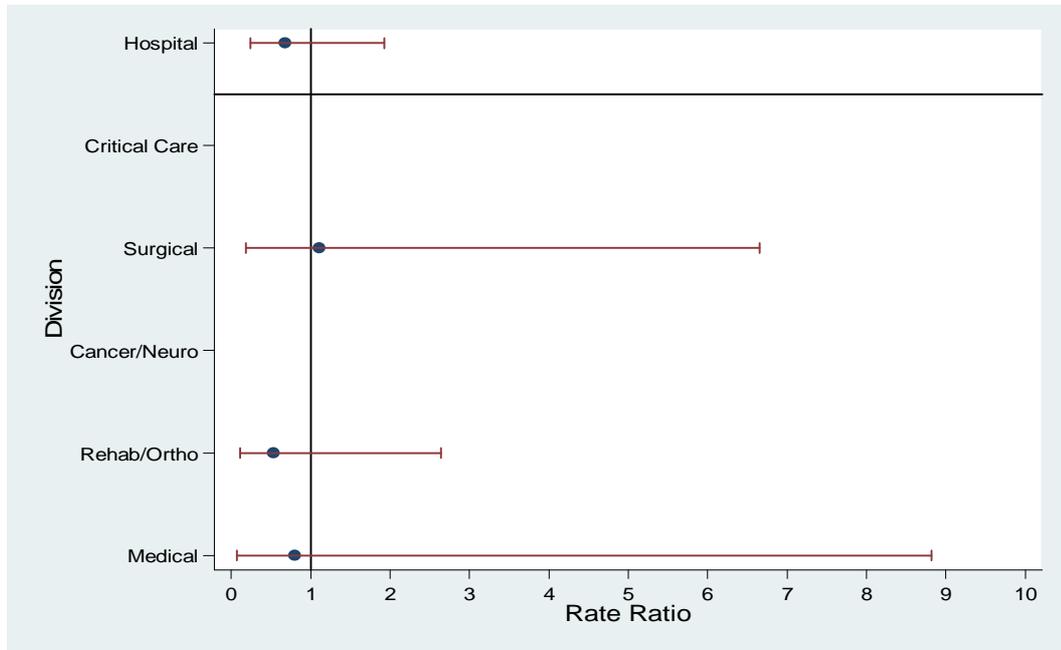
Figure 5.5  
*Effect of SCM on Decision Making, Corporate Services and Professional Conduct at Hospital Level*



The final complaint of Access related to insufficient nursing staff to provide the service remained unchanged during the study period. Consequently, no statistically significant effect was found for the hospital or divisions as shown in Figure

5.6. Division level analysis was not possible for Critical care and Cancer/Neurosciences due to insufficient complaints.

Figure 5.6  
Effect of SCM on Access Complaints for Hospital and Divisions



## 5.5 Comparison of Patient Survey and Reported Complaints

Of the complaints reported during the study period, as shown in

Table 5.6, four categories were also reflected in the patient surveys. These consisted of: Quality Clinical Care, Communication, Access, and Corporate Services. Of these four categories, Quality Clinical Care, Rights, Respect and Dignity and Corporate Services were reflected as areas within the good care theme, incorporating components of the categories of happy with nursing care and happy with the service. Throughout the study period patients continued to make either the same or a slight reduction in positive comments regarding these three categories as shown in Table 5.3. Of these three complaint categories, there was a statistically significant reduction in complaints for the Rights, Respect and Dignity category since implementation of the SCM for both the hospital and Medical Division. This finding is supported by the large numbers of positive comments for the good care theme in the patient survey.

With the exception of Corporate Services all categories were included within the poor care theme. Complaints of Quality Clinical Care incorporated the poor care theme categories of poor clinical skills, delays with procedures, poor discharge management and poor medication management. Communication incorporated poor communication between nurses and patients, and Access incorporated insufficient staffing categories of the poor care theme.

Complaints of Quality Clinical Care were found to have significantly increased, despite the patient survey's findings of high levels of satisfaction with nursing care. However, this finding is consistent with the patients' survey content analysis as the largest proportion of concerns for the poor care theme were incorporated in the category of Quality Clinical Care, and the total number of these increased post implementation of the SCM.

Another consistency was found between the patients' survey and reported patient complaints for Communication as these continued to increase post implementation of the SCM but were not found to be significant. Conversely, while patients did not comment on staffing issues post implementation of the SCM, Access complaints were reported, but were not found to be significant.

The poor environment theme from the patients' survey identified two categories of poor facilities and mixed gender in rooms and these are reflected in the Corporate Service complaints. There was a non significant increase in the number of reported complaints post implementation of the SCM, but in the patients' survey a reduction in comments regarding poor facilities and the same number of comments for the mixed gender in rooms.

## **5.6 Summary of Patients' Reported Experience**

The patients' reported experience associated with the SCM was captured by their responses to the surveys and/or their reported complaints. High levels of patient satisfaction were reported across the two study periods. No difference was found in patient satisfaction with the provision of nursing care using the SCM compared with the patient allocation model. Despite an increase in qualitative comments indicating

discharge was managed poorly when the SCM was in use, a statistically significant improvement was found in managing patient discharge since implementing the SCM.

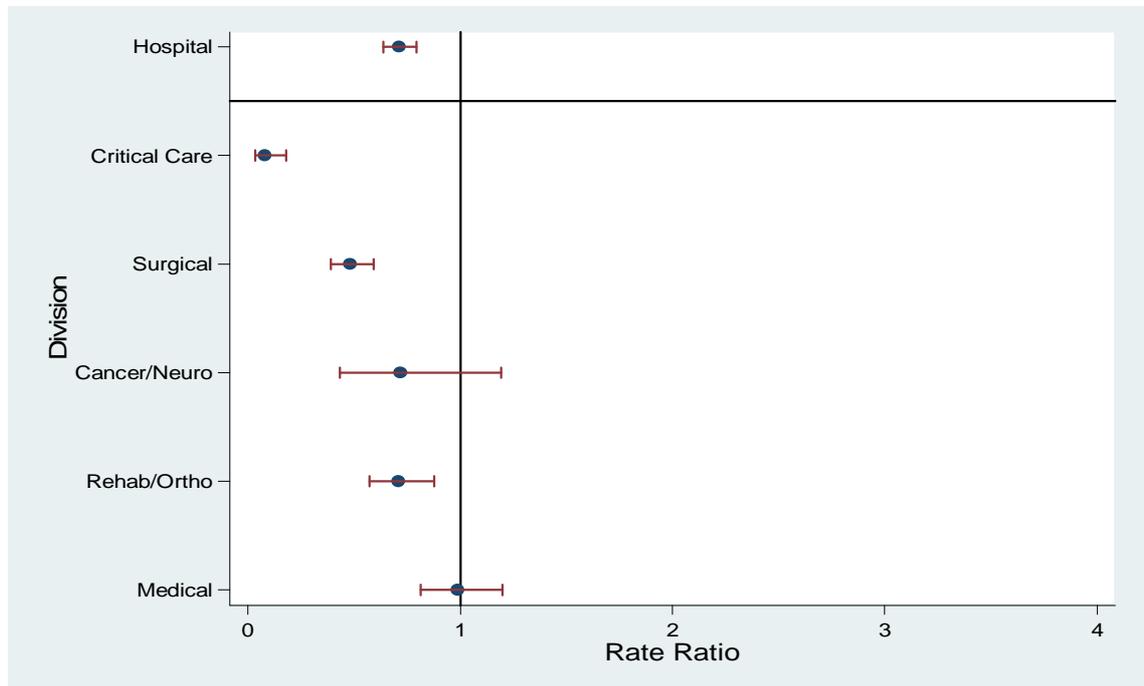
Quantitative analysis of patients' complaints demonstrated the Rights, Respect and Dignity category was the only area where complaints were statistically significantly reduced using the SCM. However, there was a statistically significant increase in the number of complaints for Quality Clinical care when the SCM was in use. Both of these findings were supported with the qualitative content analysis of the patient surveys, as there remained a large number of positive comments regarding the respectful approach in delivering nursing care but also an increase in the total number of negative comments regarding the quality of nursing care. Other consistencies between qualitative content analysis of the patient surveys and quantitative analysis for complaints consisted of an increase number of comments and complaints relating to poor communication between nursing staff and patients.

Inconsistencies between qualitative content analysis of the patients' surveys and quantitative analysis for complaints were found for both the poor care theme and poor environment theme. These consisted of either none or fewer negative comments being made in the patients' survey for categories matching Access and Corporate Services complaints which either continued at the same rate or increased.

## **5.7 Impact of SCM and Severity of Each Ward's Most Common Adverse Incidents.**

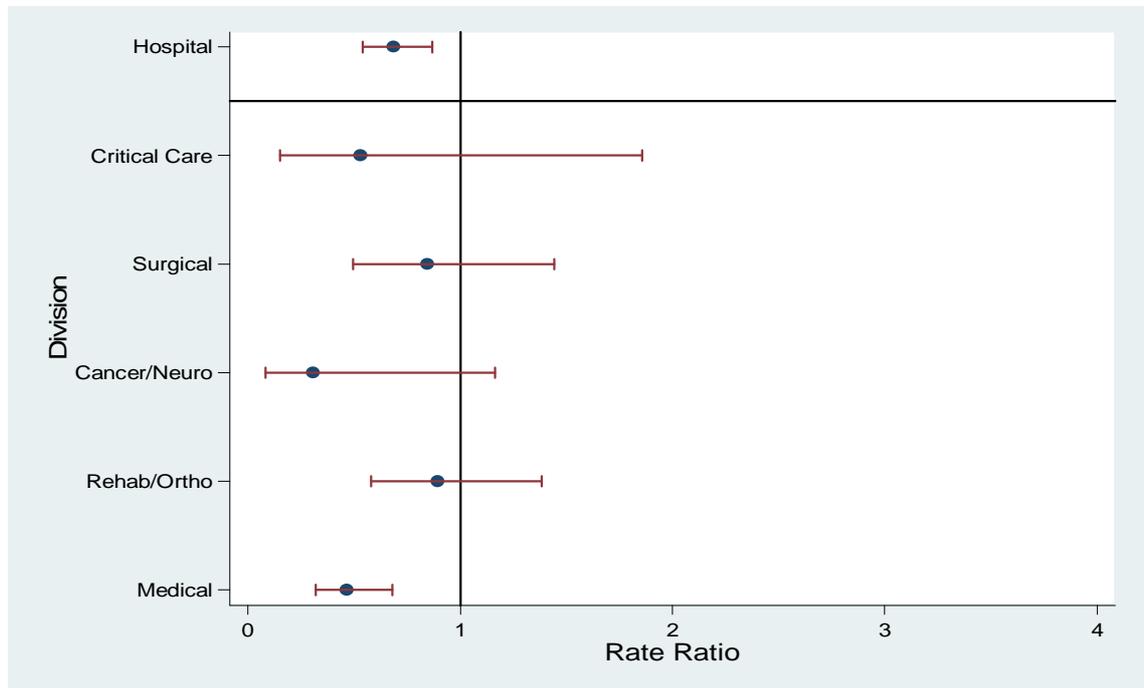
There were statistically significant reductions in all four commonly reported incidents when the SCM was in use compared to when the patient allocation model was used. Of these, medication incidents had the most impact across the hospital and divisions as a statistically significant reduction was found for the hospital (IRR = 0.71, 95% CI [0.63, 0.79],  $p < .001$ ), Critical Care (IRR = 0.07, CI [0.35, 0.17,  $p < .001$ ), Surgical (IRR = 0.48, CI [0.39, 0.59],  $p < .001$ ) and Rehabilitation/Orthopedic (IRR = 0.70, CI [0.57, 0.87],  $p < .001$ ) Divisions. This effect is shown in Figure 5.7 and is consistent with the qualitative findings reported earlier.

Figure 5.7  
*Effect of SCM on Medication Incidents for Hospital and Divisions*



There was also a statistically significant reduction in reported injuries for both the hospital overall (IRR = 0.68, 95% CI [0.54, 0.86],  $p = 0.004$ ) and Medical Division (IRR = 0.46, CI [0.31, 0.67],  $p < .001$ ) as shown in Figure 5.8. This finding indicates a reduction in the number of injuries since the implementation of the SCM.

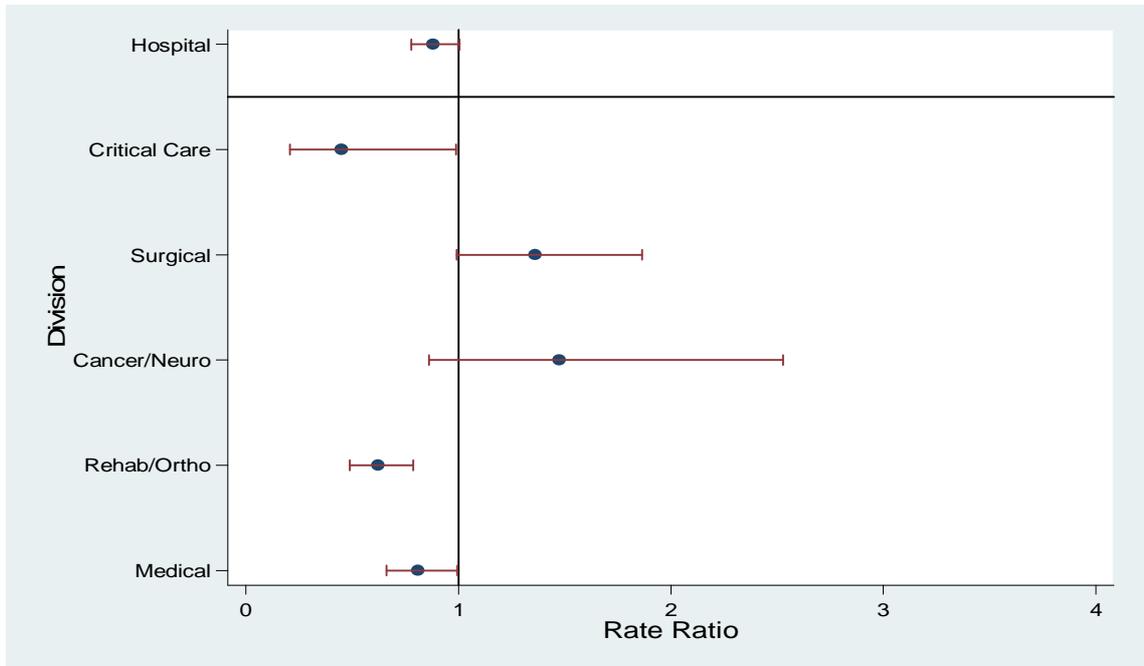
Figure 5.8  
*Effect of Injury incidents for Hospital and Divisions*



A statistically significant reduction in falls was found for the Rehabilitation/Orthopedic (IRR= 0.62, 95% CI [0.48, 0.78],  $p < .001$ ), Medical (IRR= 0.81, CI [0.66, 0.99],  $p = 0.045$ ) and Critical Care Divisions (IRR= 0.45, CI

[0.20, 0.98],  $p = 0.047$ ) as shown in Figure 5.9. However, for the Hospital overall, no statistically significant difference over time was found (CI [0.77, 1.00],  $p = 0.076$ ).

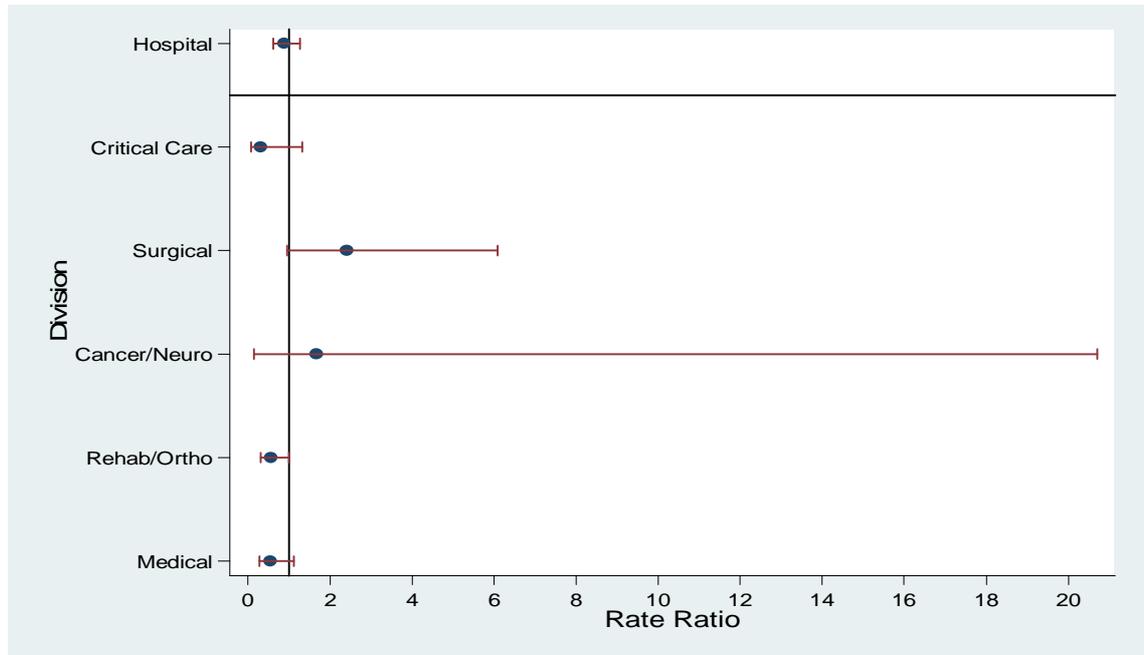
Figure 5.9  
Effect of SCM on Falls incidents for Hospital and Divisions



Rehabilitation and Orthopaedic Division was the only division where a statistically significant effect (IRR= 0 .56, 95% CI [0.31, 0.99],  $p = 0.048$ ) was found for behavior (Figure 5.10). Examples of inappropriate behaviour by patients towards nursing staff include inappropriate verbal or non vernal communication such as using

language considered to be threatening, swearing, spitting, punching or body positioning that is considered to be intimidating.

Figure 5.10  
Effect of SCM on Behaviour incidents for Hospital and Divisions



## 5.8 Severity of Incidents

Further analysis was undertaken to investigate the severity of reported incidents across the two study periods and the impact the SCM had on this. Results are shown in Table 5.7 and displayed graphically in Figure 5.11.

Table 5.7 shows the average severity of divisional incidents. There is no statistically significant difference between the divisions at either pre or post implementation of the SCM. At pre implementation of SCM the average severity for the Surgical Division was .30 lower than the Medical Division ( $p = 0.008$ ). The interaction term indicates that post SCM the Surgical Division's average severity increased by .32 ( $p = 0.001$ ) compared to Medical. The Medical Division's average severity reduced over time by -.18 (denoted by SCM in Table 5.1) which was statistically significant ( $p = 0.002$ ).

Table 5.7  
*Linear Regression of Average Incident Severity*

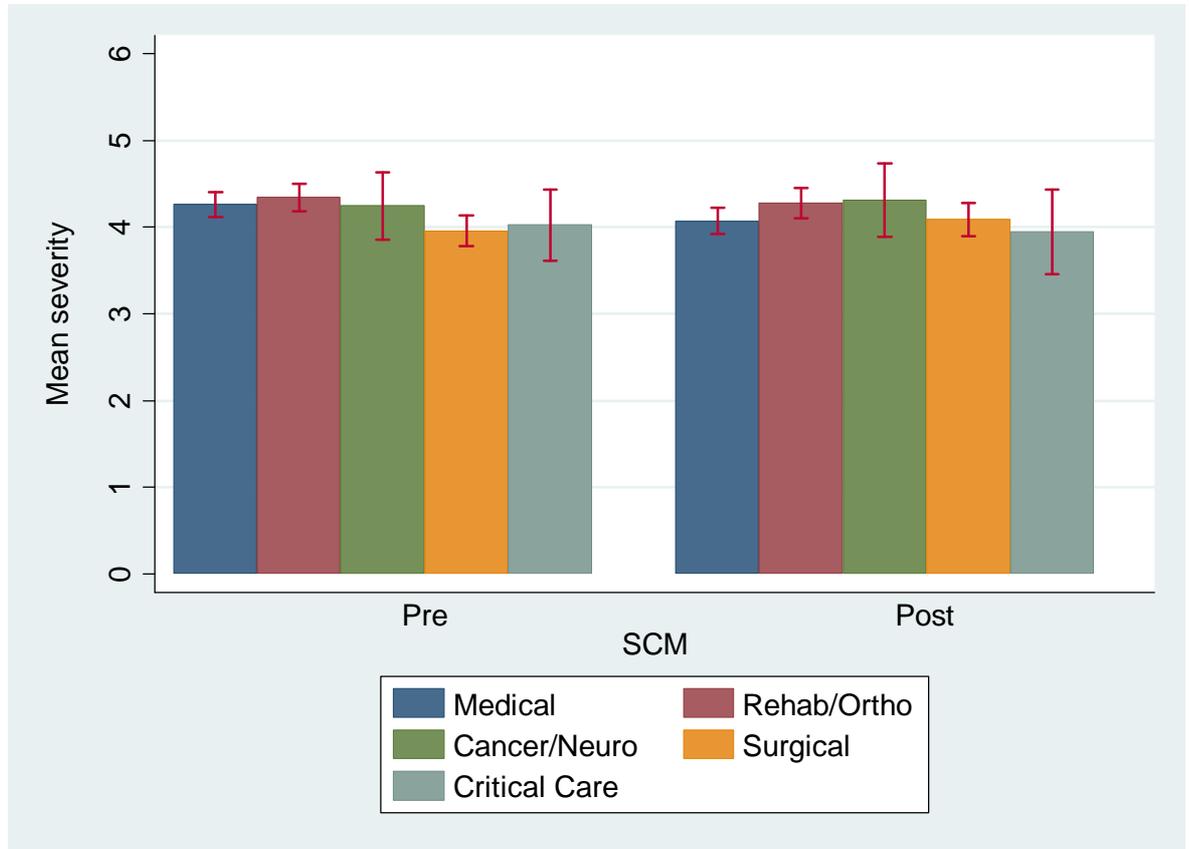
Average severity	Coef	95 % CI	P
SCM	-.18	[-0.30, -0.06]	0.002
Rehabilitation/Orthopedic	.08	[-0.13, 0.29]	0.446
Cancer/Neurosciences	-.01	[-0.42, 0.40]	0.951
Surgical	-.30	[-0.53, -0.07]	0.008
Critical care	-.23	[-0.67, 0.19]	0.286
ISCMX Rehab/Ortho	.12	[-0.05, 0.30]	0.169
ISCMX Cancer/Neurosciences	.25	[-0.08, 0.59]	0.141
ISCMX Surgical	.32	[.13, 0.51]	0.001
ISCMX Critical care	.11	[-0.32, 0.54]	0.621
Constant	4.2	[4.1, 4.4]	0.000

Note. ISCMX is the interaction term that indicates the difference between pre and post division coefficients

Fitted average severities by division and time predicted by the model reported in Table 5.7 are graphed in Figure 5.11. The statistically significant interaction term for Surgical Division is generated by the slight increase (positive slope) in the Surgical division over time contrasting with the decrease (negative slope) in the Medical division over time.

A similar effect can be seen for the Cancer/Neurosciences Division but it is only slightly lower than the Medical Division at pre test and this, along with a smaller sample size (note the CI's are wider), prevents this from generating a significant interaction as well.

Figure 5.11  
*Effect of SCM on Severity of Incidents for Divisions*



## 5.9 Summary of Impact on Incidents and Severity

There were statistically significant reductions in all four commonly reported incidents when the SCM was in use compared to when the patient allocation model was used. A statistically significant decrease in the severity of incidents in the Medical Division between pre and post test was found as well as a statistically significant difference between this decrease and a non statistically significant increase in incidents in the Surgical Division.

## 5.10 Chapter Summary

The objective of the patients' results chapter was to present the pilot study findings, determine demographic characteristics, and investigate the impact the SCM had on patient satisfaction, patient complaints and adverse incidents.

Two main findings emerged from the pilot study analysis. These consisted of the need to include a postal survey in order to increase the response rate for the main study and a reduction in the number of patient falls

In the main study, the SCM had minimal impact on patient satisfaction as no difference was found with the provision of nursing care using the SCM compared with the patient allocation model. The only statistically significant improvement in patient satisfaction, post implementation of the SCM, was an improvement in managing patient discharge.

Findings related to the impact the SCM had on patient complaints demonstrated consistencies between the quantitative analysis of the reported complaints and qualitative analysis of the patients' survey. There was a statistically significant reduction in the number of complaints for the Rights, Respect and Dignity category but a statistically significant increase in the number of complaints for Quality Clinical Care when the SCM was in use. A similar pattern in the number of comments regarding these areas was found in the patients' survey content analysis.

The SCM was found to have a statistically significant impact on all four commonly reported incidents of: medications, injuries, falls and behaviour, when the SCM was in use compared to when the patient allocation model was used. Of these, medication incidents demonstrated the most impact with statistically significant reductions in the hospital overall, and three of the five divisions of Critical Care, Surgical and Rehabilitation/Orthopedic Divisions. The only other area where a statistically significant effect was found at both the hospital and divisional level was a reduction in injuries for the hospital overall and Medical Division. A reduction in falls was found in the Rehabilitation/Orthopedic, Medical and Critical Care Divisions. Only the Rehabilitation/Orthopaedic Division had a statistically significant reduction in the number of behaviour incidents. There was no significant difference between the Divisions' average incident severities across the two study periods.

The following chapter provides an overview of the key findings of the study and discusses these in relation to other team based studies. In particular, the evaluation

measures of the study to assess the impact of the SCM supporting nurses with the delivery of care and associated patient outcomes are discussed.

## CHAPTER SIX

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### *DISCUSSION*

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In this chapter the key findings of the study are presented and compared with the findings of other nursing team based studies. In addition, the generation of knowledge and theory are discussed and study limitations outlined.

#### **6.1 Overview of Study Findings**

The primary aim of the project which this study evaluated was to assist nurses with varied skill mix manage their workload, improve the culture of support, increase patient satisfaction, reduce the number of patient complaints and adverse events through the use of a SCM. Evaluation of the project indicated that this aim was achieved in part.

The findings in relation to the quality of patient care were mixed. Patients' satisfaction increased in relation to discharge planning; while reductions occurred in the following areas: the number of medication, falls, injuries and behaviour adverse events, and fewer complaints related to patient rights, respect and dignity. However, more complaints associated with the quality of clinical care were found when the SCM was in use.

In relation to workload management, on the positive side, results of the study have demonstrated, that when a less experienced nurse is paired or works in a team with an experienced nurse, the SCM can assist nurses manage their workload and increase their learning opportunities. Overall, however, this model did not ensure manageable workloads or improve the culture of support for nurses. Nor did the SCM promote a team approach. No improvements in communication were found associated with the nursing rounds and bedside and board handover. Finally no statistically significant association was found between the impact of time over the study period and the two types of project implementation – intensive whereby the researcher worked clinically as a member of the nursing team on 13 wards, or the less intensive approach - no longer working clinically as a member of the team but being available as a resource for the application of the SCM for eight wards.

## **6.2 Relationship Between The SCM, Staff Workload And Culture Of Support**

In the last decade growing concern regarding how hospitals can deliver a quality nursing service with a reduced RN workforce has motivated several trials of team based nursing models. These studies have involved teams of registered and enrolled nurses (Brack & Sandford, 2010; Fairbrother et al., 2010; Fowler et al., 2006; Hayman et al., 2008), teams of registered and enrolled nurses along with nursing assistants in Australian studies (O'Connell et al., 2006; Tran et al., 2010; Walker et al., 2007) and in America the LPN and CNA (Dobson et al., 2007).

The study reported in this thesis is unique in terms of the number and variety of clinical areas, measures of different staff and patient outcomes and the PAR methodology used. It had at its core the pairing of an experienced nurse with a less experienced nurse. The aim of this combination was to promote a supportive environment where workload was shared and therefore more manageable, and learning became integral to routine delivery of care. In circumstances where these factors occurred, the study showed that workload was both more manageable and learning opportunities increased. However, possibly due to difficulties in consistently matching the pair or groups of nurses to meet patient care requirements and manage the workload to enable opportunities for teaching, overall the SCM was not found to result in ensuring manageable workloads or establishing a culture of support.

### **6.2.1 Perception of Increased Patient Load**

Two main factors were identified as a significantly increasing workload as reported by the nurses at the three month study point. The first was the perception of an increased patient load caused by the paired or team of nurses sharing responsibility for combined patient care requirements. This was consistent with Dobson et al.'s (2007) findings and contrasted with those of O'Connell et al. (2006) who reported sharing a heavy workload an advantage of working in teams. The second finding of added responsibilities and workload for the experienced nurses supported the findings of Hayman et al.'s (2008) and Tran et al.'s (2010). This study's findings differ from Fowler et al.'s (2006) and Fairbrother et al.'s (2010) nursing only team models as they didn't report an association between increased workload and working in teams.

The ratio of patients to nurses was not increased but equated to the same distribution as the patient allocation model - of four or five patients for each nurse in the team, unless contraindicated due to increased patient acuity requirements. In wards that used PCAs and AINs the ratio remained unchanged resulting in an increased number of registered and unregistered staff available for the same number of patients. While both Dobson et al. (2007) and Walker et al. (2007) had the same ratio of patients to registered nurses, as this study, they differed in that they also allocated each non registered staff four patients.

The skill mix for the teams in this study varied. The majority of teams consisted of two RNs or an RN and EN each shift which is similar to all the studies that investigated nursing team models (Brack, & Sandford, 2010; Fairbrother et al., 2010; Fowler et al., 2006; Hayman et al., 2008). One of the medical wards had teams of three nurses on both morning and afternoon shifts as did Fairbrother et al. (2010) in the morning shift on a medical ward. Three teams of three staff incorporated AINs and PCAs in combinations of two nurses always with one RN and either a PCA or AIN, in the acquired brain injury and neurology units. This skill mix is similar to O'Connell et al.'s (2006) skill mix used in a medical ward and Walker et al.'s (2007) skill mix in medical-surgical wards. The spinal unit had a team of five- two RNs, one EN and two PCAs or AINS. Another medical area, the acute ambulation unit, incorporated AINs into nursing teams of two RN or an RN and EN forming a team of three. No other team based study has investigated teams of five with PCAs.

The combination of teams, at the study hospital, was influenced by the majority of staff (58%) employed to deliver nursing care, being level one RNs with varied levels of experience. First and second year graduates represented 11-12%, RNs with three to five years experience represented 15%, and those with six to eight years represented 32%. Level two registered nurses (clinical nurses) represented 22% and ENs 11-13%. The remaining 6-7% were employed in roles not involved in the provision of direct patient care (Nursing Workforce, 2008-2010). The proportion of RN graduates and ENs is consistent with proportions of these levels in Western Australian public hospitals (Department of Health, 2010).

Comparisons between specific continuous and categorical demographic variables and nursing team model studies are limited due to the variation or lack of variables included. Similarities between Tran et al.'s (2010) demographic variables were found for gender, age, designation and employment type and those of the Medical and Surgical Divisions in this study. Similarities were also found between the Medical Division and O'Connell et al.'s (2006) variables for designation, employment type, and time on ward, but differed in length of time qualified as a nurse which was less in this study.

### **6.2.2 Increased Responsibilities for Experienced Nurses**

The cause of the added responsibilities for the experienced nurses was the requirement to support the less experienced nurse and initially take responsibility for the care of their patients. This would have limited the capacity of the less experienced nurses to exercise control and autonomy over their practice, which has been found to be an indicator of job satisfaction ( Bartram et al., 2004; Cowin, 2002; Day et al., 2007; Duffield et al., 2009) and essential in the development of a learning culture (Aiken & Patrician, 2000). However, as found by Makinen, Bond, et al.(2003) they may have gained job satisfaction from being supervised by the more experienced nurse who guided and supported them in the delivery of patient care. This concept is supported by Fairbrother et al.'s (2010) findings, whereby new RN graduates reported the largest change in job satisfaction using a team based model with an experienced RN leading the team.

Supporting less experienced staff while providing patient care and dealing with workload pressures requires a range of attributes, skills, behaviours and operational practices. These include demonstration of professional expert knowledge (Benner, Sutphen, Leonard, & Day, 2010) good interpersonal and communication skills where open communication, trust and mutual respect among the team is developed (Davidson, Elliott, & Daly, 2006): and time to provide this supportive role. The reality is that workloads for clinical staff are generally heavy (Duffield et al., 2011) and there is limited time available for teaching, as found in this study and Fowler et al (2006).

### **6.2.3 Culture of Support**

The SCM was intended to act as a framework to enable nurses to reconfigure practices and activities in the provision of patient care that promoted a culture of support through the paired nurses' partnership, sharing the workload and enhancing learning opportunities. Value determination exercises indicated nurses considered a culture of learning and development an essential component of their work environment. Egan and Jaye (2009) argued that most learning occurs in the clinical setting through observation of and participation with good role models, conversations with staff willing to share their knowledge and experiences, and feedback from the team during routine situations. Working with a patient allocation model limits the opportunity for this type of learning as nurses generally work alone and are required to have the expertise necessary to manage their own patient load (Wu et al., 2000). Baseline qualitative data, when the patient allocation model was in use, highlighted the imbalance between patient acuity, level of staff expertise and lack of available staff to help as they were busy managing their own workload.

### **6.2.4 Promotion of a Learning Culture**

To address this imbalance an intended feature of the SCM was promotion of a learning culture for both experienced and less experienced nurses. From the less experienced nurse perspective, learning from the practice of experienced staff and observing their behaviours and attitudes influences how they practice and contributes to safe and contemporary care (Egan & Jaye, 2009). The experienced nurse can learn by questioning and exploring their own practices (Crotty, 2010), and developing their communication, interpersonal and teaching skills. This type of learning has been recommended for supporting the development of a learning culture (Schoonbeek & Henderson, 2011) and was simulated in the clinical scenarios, initiated by the nurses. These involved role playing, staff practicing their communication skills and the development of a shared understanding of the application of the SCM in specific clinical situations.

The SCM was found to be associated with enhancing learning as demonstrated by the qualitative analysis and the statistically significant positive effect on learning opportunities when nurses were paired with a more experienced nurse. Interestingly,

this did not lead to improving the culture of support for nursing staff. However, there was an indication that the SCM was contributing to the achievement of this goal as quantitative analysis showed that staff indicated they helped and supported each other more since the implementation of the SCM compared to when the patient allocation model was in use.

### **6.2.5 Transition from Patient Allocation To SCM**

In relation to workload and culture of support, the trend of increased negative effect at three months from baseline measures with a return to baseline measures at 12 months was likely to be related to the transition associated with changing from the patient allocation model to the SCM. This is not unexpected as change does take time and people involved in the change process undergo major transitions including a reluctance to move on from what is most familiar (Bridges, 2003). Inherent in the use of PAR is the importance of enabling groups to express their concerns and for these to be acted upon (McTaggart, 1997; Park, 2001). Nurses were assisted with the transition through the provision of opportunities to raise issues, question motives, reflect upon their practice and collectively problem solve through the facilitated solution focused sessions. Nurses also used a range of other methods to express their views such as recording their experience in communication books, note pads or ward e mails, and discussing these at ward meetings and the facilitated solution focused sessions.

The return to baseline levels of workload and culture of support at 12 months for all divisions, with the exception of Critical Care in the case of workload, may be attributed to the strategies initiated from both the facilitated solution focused sessions and ward based discussions. One of the substantial changes made at the end of three months for all wards, with the exception of three rehabilitation wards which used teams of greater than two, was for nurses when allocated in pairs to be assigned primary responsibility for nominated patients. As a consequence, they regained a sense of autonomy and control over their decision making. Consistent with the SCM principles, the less experienced nurses were paired with an experienced nurse who provided support with prioritising patient care requirements, dealing with unfamiliar nursing care, patient handling and cover for meal breaks and absences from wards. Therefore, the SCM for 18 of the 21 wards subsequently had components of both patient

allocation and shared care model, similar to Fowler et al.'s (2006) collaborative shared care model and Fairbrother et al.'s (2010) team based model. At the 12 month study point no comments were made regarding an increased patient load.

The inclusion of nurses having primary responsibility for nominated patients had been included in the SCM from inception by the Critical Care Division yet this was the only division where workload levels did not return to baseline measures. This may be related to other factors such as the introduction of the hospital's four hour rule policy for the length of patient stay in the Emergency Department during the study resulting in an emphasis being placed on increasing throughput of patients. The Critical Care Division was the only area to comment on the negative impact associated with this policy during the facilitated solution focused sessions and the staff surveys.

### **6.2.6 Variation in Divisional Results**

Similarities in results were found at the hospital level and the six Rehabilitation/Orthopaedic wards/units (total of 182 beds), including significant improvements in managing workload and learning opportunities when a less experienced nurse was paired with a more experienced nurse. Conversely, both of these areas were associated with an increased negative effect at three months in relation to the SCM promoting a culture of support, but returned to baseline measures at 12 months. The main workforce difference among the Rehabilitation/Orthopaedic units/wards and the rest of the hospital was that they employed the largest proportion of ENs and integrated the PCAs and AINs into the SCM.

These positive findings may have been influenced by a variety of factors. Inherent in rehabilitation nurses' role was participation in activities related to multidisciplinary team collaboration and communication together with a planned and goal orientated approach (Brillhart & Sills, 1994). Therefore, nurses were used to working in teams and may have found the transition to working in nursing teams consistent with their philosophy of patient care in contrast to other specialities. Another important factor, and perhaps the most influential, was structuring the roles of the PCAs and AINs so that they were integrated into the nursing team and therefore undertook activities as part of a coordinated approach to patient care. Consistent with Walker et al.'s (2007) findings, this enabled a better use of skill mix as it resulted in

both the PCAs and AINs being more involved with manual handling, making beds, and assisting patient comfort and hygiene needs. Nurses consequently attended to more complex care requirements and had more time available to participate in learning opportunities. Similar benefits were found in two studies that evaluated the role of rehabilitation assistants who undertook a generic supporting role (Knight, Lerner, & Waters, 2004; Stanmore, Ormrod, & Waterman, (2006).

All other study wards employed PCAs but they and their industrial union resisted being integrated into the SCM during the development phase and their involvement was not pursued by the hospital management. However, one medical ward employed AINs during the study and they were integrated into the SCM.

From the quantitative analysis the study was not able to show the SCM ensured manageable workloads by nurses helping each other more, nor improved the culture of support. However, there is evidence from the qualitative findings to illustrate nurses consistently supported and helped each other in practical ways after careful consideration and respect for each other's views. These contrasting findings may be related to the active participation by nurses at the solution focused sessions to critically appraise the SCM and collectively determine and implement agreed course of action to resolve identified problems.

### **6.3 Relationship Between The SCM And Promotion Of Teamwork**

Quantitative findings failed to demonstrate the SCM promoted team work, which has been linked to enhancing learning (Schoonbeek & Henderson, 2011), contributing to a supportive environment (Laing, 2003) and enabling recognition, among the team, through team cohesion and earned respect (Duddle & Boughton, 2007). While quantitative findings didn't demonstrate the SCM promoted teamwork, the qualitative findings showed a gradual improvement as illustrated in fewer concerns and negative comments. Perhaps a longer period of time would be required for marked improvement in teamwork to manifest. A major component of the SCM was the need to work together in the planning and delivery of patient care. This requires good communication among the pairs or teams and as such introduced a number of factors

previously absent from the patient allocation model where there was less requirement for staff interaction.

### **6.3.1 Team complexities**

Qualitative findings highlighted the complexities associated with communication between team members, their willingness to engage with each other and use the SCM as it was intended, and level of expertise and acceptance of different skill levels within the team appropriate to their stage of development. Similar to O'Connell et al. (2006) findings, these complexities influenced the extent of benefits gained, such as sharing a heavy workload, building good working relationships among staff and enhanced learning opportunities. These findings also support those of Duddle and Boughton, (2007) whereby nurses carefully considered the potential success of an interaction before approaching a nurse for help.

These findings characterise the complexity of nurses' work environment and the importance of preparing staff to interact with one another and work together. When building teams the literature recommends establishing ground rules and norms, clarifying role and responsibility, and establishing goals for the group (Beebe & Masterson, 1997; Salas, Rozell, Mullen, & Driskell, 1999). The use of a PAR approach and ePD principles in this study ensured these components were incorporated through democratic, inclusive and collaborative participation. The values clarification sessions to establish the collective values enabled a shared understanding of nurse's expectations of each other and these were regularly referred to in the solution focused sessions. Roles, responsibilities and goals were discussed and agreed during the development and regular review of the SCM through the solution focused sessions, and feedback of staff survey results.

### **6.3.2 Resistance to SCM**

The difficulties encountered in interactions with other team members were likely to have been influenced by the continued resistance, albeit less over time, by some staff to the implementation of the SCM. This may have been as a result of dissatisfaction with co-workers, as found by Tran et al. (2010), or insufficient commitment by staff which may have limited the teams' effectiveness. Lack of

commitment has been negatively associated with team effectiveness in a number of studies (Filatoff, 2000; Longnecker & Nuebert, 2000; Salas et al., 1999). However, prior to proceeding with the implementation of the SCM on each ward, consensus was obtained regarding the need for changing to another model which is an integral component of PAR (Reason & Bradbury, 2001) and essential for participation (Kemmis & McTaggart, 2005). The degree of commitment made by the nurses is reflected in the level of participation in the solution focused sessions and innovative clinical scenarios, whereby staff recognised consequences associated with poor teamwork and actively sought to address these.

#### **6.4 Relationship Between The SCM And Bedside Handover**

All of the eight wards which decided to include bedside handover as part of the SCM had raised handover as an area that required improvement at the developmental stages of the SCM. Consistent with McMurray et al.'s (2010) recommendations, each ward developed a standard approach incorporating the five stages of preparation, introduction of staff and patient, information exchange, patient involvement and safety scan. This involved using the patient care plan headings and incorporating relevant charts such as medication, intravenous, wound care plan and rehabilitation plan. The change to bedside handover was supported by a range of education activities provided by the researcher, CNS/CNM and SDN. These included ward based education using patients' information to demonstrate bedside handover, clinical demonstration, and supervising numerous handovers and providing constructive feedback.

The findings of this study that bedside handover did not significantly improve patient care or communication is consistent with the conclusions of two systematic reviews (Risenberg et al., 2010; Poletick & Holly, 2010). However the findings are incongruent with two large bedside handover studies involving 10 hospitals (Needleman et al. 2009) and 18 wards (Street et al. 2011) not included in the systematic reviews. These studies found the use of structured communication techniques and bedside handover improved patient care and the continuity of patient care. The differences in findings in this study may have been related to the smaller sample size (8 wards) and perhaps over a longer period of time, as staff gain more experience, improvements in patient care may manifest.

### **6.4.1 Nurses Concerns**

A common concern raised by the staff was not receiving handover for all ward patients potentially influencing their capacity to respond to patients' needs if required and adversely affecting patient safety. However, this type of handover has been associated with incomplete and inaccurate data (Pothier et al., 2005; Richard, 1988) resulting in poor patient management (Anderson & Mangino, 2006; Benson et al., 2006; Dowding, 2001; Fenton, 2006;) and a high risk for near misses and adverse events (Ebright et al., 2004). In addition, this study's baseline data included comments indicating nurses responded to their own patients' call bells but not routinely to other nurses' patients.

Similar to Greaves' (1999) findings, maintaining patients' confidentiality was a concern of nurses. However, while patients' views on bedside handover were not part of the study outcomes, all patients participated and were observed to provide additional information relating to their treatment including correcting any inaccuracies. Their observed active participation supported McMurray et al.'s (2011) positive findings of patients' desire to be involved in their handover.

### **6.4.2 Continued Use**

One of the three Rehabilitation/Orthopaedic Division wards decided to cease bedside handover after three months. The remaining seven (five from the Surgical Division) continued throughout and after the 12 month study period, despite it not being found to improve communication associated with management of patients' nursing care. Their rationale was that they believed there was less chance for error as staff used a standard structured format incorporating patients' charts and a more detailed update of their management. Over time they expected, as staff became more familiar and competent with bedside handover, improvements in patient management would be realised.

### **6.4.3 Relationship Between the SCM and Board Handover**

Board handover was initiated by two medical wards as a communication strategy to inform staff of changes in patients' management. Both wards met after the medical ward rounds and the SC updated every-one of all patients' changes. Both

wards used this method throughout the study period, with one deciding to continue using it after completion of the study. Like bedside handover, the sample size was small and this may have influenced the finding that it did not improve communication associated with management of patients' nursing care.

## **6.5 Relationship Between the SCM and Nursing Rounds**

Nursing rounds were included in the SCM as research had demonstrated it had a positive impact on patient satisfaction and safety (Culley, 2008; Gardner et al., 2009; Meade et al., 2006; Woodard, 2009). Nurses determined both the components and the frequency of the nursing rounds. The components of the nursing rounds were similar to those described by Meade et al. (2006) but also included recording patients' vital signs if the rounds occurred when these were required. The frequency of rounds was less than all previous studies, initially being undertaken three times each morning and afternoon shift but this was further reduced to a minimum of once in the mornings and twice in the afternoon shift by the majority of wards after two months of implementation.

During the first three months of nursing rounds common issues were raised regarding having insufficient time to undertake the rounds and questioning their value when patient care was being attended to. This resulted in four surgical wards ceasing nursing rounds and a further 11 at the end of 12 months. The two divisions that continued to include nursing rounds in the SCM after 12 months were the Medical and Rehabilitation/Orthopaedic Divisions. This may be related to the statistically significant association with the intensive implementation in these wards whereby the researcher worked clinically with nurses and assisted in addressing issues associated with nursing rounds as they occurred so that rounds become embedded into practice as the study period continued.

None of the studies that investigated the impact of nursing rounds included the nurses' perspective (Culley, 2008; Gardner et al., 2009; Meade et al., 2006; Woodard, 2009). This study, consistent with the PAR approach, sought the views of nurses undertaking the practice and enabled nurses to determine if the practice should be modified, continued or discontinued. From the nurses' quantitative results, nursing rounds were not found to have improved patient care. However, 17 wards continued

to undertake nursing rounds during the study period and statistically significant reductions in patient adverse events were found.

## **6.6 The SCM Patient Satisfaction, Complaints and Adverse Events**

In this study patients' continuous demographics were largely similar among the divisions with the exception of the Rehabilitation and Orthopaedic Division. In this division the median age was 56 (IQR = 31) years, representing the youngest age group and their length of stay the longest with a median of eight (IQR = 24) days. An age of 60 years or older has been associated with a greater risk of falls (The Joanna Briggs Institute, 2003) and all divisions had patients in this age group. The longer length of stay may influence increased risk of an incident occurring, however, the hospital's overall length of stay was statistically significantly reduced during the study period.

The patients' categorical demographics were similar across all divisions for gender, proportion of Aboriginal or Torres Strait islanders and employment status. Differences between divisions were found in those with a tertiary qualification, ranging from 4% in the Cancer/Neurosciences Division to 30% in the Rehabilitation/Orthopaedic Division, and those with a partner ranging from 49% in Surgical Division and 66% in Critical Care Division.

Only limited comparisons to other studies that investigated the impact of a team based nursing model on patients' satisfaction (Dobson et al., 2007; Wu et al., 2007) and patient incidents/accidents (Fowler et al., 2006 ) can be made due to the absence of demographic data for the participating patients. Similar demographics were found for age, gender and having a partner between Wu et al. (2007), and the two surgical orthopaedic wards and the Surgical Division. Of the other comparable variables, the Surgical Division had more tertiary qualified patients than Wu et al. (2007). As no other study included patient complaints in its patient outcome measures, no comparisons can be made on this measure.

### **6.6.1 Relationship Between Patient Satisfaction and the SCM**

This study's findings support those of Dobson et al. (2007), in that patient satisfaction levels were consistently high and Wu et al. (2007) as there was no difference in patient satisfaction between the patient allocation and team based SCM, with the exception of a significant improvement in discharge planning. Discharge planning is a complex process and nurses play a major role in the management associated with preparing patients for discharge. Critical to successful discharge is good communication among nursing staff (Watts & Gardner, 2005), interdisciplinary communication and teamwork among nurses and health professionals (Atwal, 2002), sufficient time (Bowles, Foust, & Naylor, 2003), and adequate knowledge of the hospital (Tilus, 2002) and community services (Cheek & Gibson, 2003).

The role of the experienced nurses in the SCM, who are considered more effective discharge coordinators than novice nurses (Anthony & Hudson-Barr, 1998), is to guide the less experienced nurse through the complexity of discharge planning. Of particular importance is the need to ensure the less experienced nurse develops appropriate communication skills when discussing with patients their discharge requirements, as this has been shown to be a significant predictor of patients' perception of readiness to go home (Weiss et al., 2007). The experienced nurse can also educate the less experienced nurse regarding the hospital services and in turn promote collaborative discharge planning (Tilus, 2002). The statistically significant improvement in discharge planning during the SCM is likely to have been as a result of incorporating these factors when working together to facilitate patients' discharge. This supports McGillis-Hall and Doran's (2004) findings of improved satisfaction levels being associated with a coordinated approach to patient care.

### **6.6.2 Relationship Between Patient Complaints and the SCM**

Improvements in the manner in which patients' care was provided were reflected in the statistically significant reduction of complaints within the Rights, Respect and Dignity category for the hospital and Medical Division. By contrast and despite high levels of satisfaction with nursing care, there was a statistically significant increase in the number of complaints in the Quality Clinical Care category for the hospital, Rehabilitation/Orthopedic and Medical Divisions, when the SCM was in use.

The cause of these complaints was related to inadequate assistance in daily living and inexperienced staff to provide the care required by patients. Duffield et al. (2011) also found basic nursing care such as back rubs, skin care and oral hygiene was not being undertaken and related these to a combination of factors associated with workload pressures and staff skill mix.

In this study, these mixed findings reflect the different skill mix in these divisions as they employ the largest proportion of graduate nurses, ENs and AINs together with the AINs and PCAs being incorporated into the SCM. There is an acceptance in the literature of the need for graduate nurses in their transition year to have their learning supported through skill consolidation under supervision (Boxer & Kluge, 2000; Hardy, 1990) and that competence is influenced by the level of support received (Clare, White, Edwards, & van Loon, 2002). Given the higher proportion of junior staff in the Rehabilitation/Orthopedic and Medical Divisions there was fewer experienced staff to undertake this supporting role using the SCM. Consequently, this may have contributed to the quality of patient care.

Another factor is the integration of the PCAs and AINs into the SCM, working directly with nurses. This relationship required good communication skills among all team members, mutual trust, and good coordination and leadership skills from the experienced nurse. In the few studies that have examined the working relationship between RN and nursing assistants the lack of these factors resulted in patient care such as basic hygiene needs and ambulation being missed (Kalisch, 2006; Kalisch, Lamdstrom, & Williams, 2009). There is also evidence to suggest that because of RNs concerns about the quality of nursing assistants' training and their lack of trust in their performance (Fisher, 1999; McKenna, Hanson, & Keeney, 2004), RNs are reluctant to delegate care activities (Huber, Blegen, & McCloskey, 1994). These studies have been undertaken in hospitals where the nursing assistant role has been established for many years.

However in this study, despite high levels of graduate nurses, ENs and integration of AINs and PCAs into the nursing team, positive patient outcomes such as improved satisfaction with discharge planning and a reduction in all four clinical incident types across either both or one of these divisions has occurred within one year

of working together as a team. Therefore, the mixed findings are likely to be related to the combined workforce characteristics and the complexity of learning to work together within a team.

The SCM was also associated with a statistically significant reduction for the hospital and the Surgical Division in the number of complaints associated with cost, primarily related to the loss of personal items while in hospital. The Surgical Division's length of stay was similar to that of the hospital but did have a reduction in the length of stay 12 months following the implementation of the SCM. This may account for the decrease in the number of complaints associated with cost. Another feasible explanation for the decrease is the combined factors of reduced length of stay and improved staff efficiency associated by working in teams

### **6.6.3 Relationship Between Adverse Incidents and the SCM**

The four types of clinical incidents - medication, falls, behaviour and injuries reported in this study have been identified through AIMS as among the top five in Western Australian public hospitals during 2008-2010 (Department of Health, 2010). Medication and falls incidents were the most common adverse event in all divisions and accounted for the highest proportion of all incidents throughout the study period (61%). Falls, injuries and behaviour incidents were more commonly reported in the Rehabilitation/Orthopaedic and Medical Divisions than the Surgical and Critical Care Divisions. Limited comparison can be made with other research studies as only Fowler et al. (2006) investigated the impact a team based model had on the occurrence of clinical incidents and, with the exception of listing pressure area cases and infection rates, no other description of incidents was provided.

Significant positive associations can be made regarding the use of the SCM and reductions in all four common adverse events. Central to this conclusion are the benefits associated with less experienced nurses working with experienced nurses. Experienced nurses can recognise subtle changes in patients' conditions (Minick & Harvey, 2003) and are able to anticipate and subsequently prevent an adverse event (Eisenhauer, Hurley, & Dolan, 2007). The less experienced nurse can learn ways to manage workload so that monitoring patients; the integration of error management practices, such as checking charts and patients' results, accurate documentation; and

seeking advice regarding patient changes become inherent in routine practice (Elfering, Semmer & Grebner, 2006). The SCM fosters positive learning, teamwork, good communication and leadership which have been identified as important factors in promoting a culture of safety (Domrose, 2010).

### **6.6.3.1 Medication Incidents**

The most statistically significant reductions in adverse events was in medication incidents as they were reduced at the hospital level and in three of the five divisions - Critical Care, Surgical and Rehabilitation/ Orthopedic Divisions. While the Medical Division did not significantly reduce the number of medication incidents they did decrease indicating the SCM was assisting towards reducing this type of adverse event. Reductions in medication incidents have been associated with high numbers of RNs in the staffing compliment (McGillis, Hall, Doran, & Pink, 2004). However, a recent study by Chang and Mark (2011) found this relationship only statistically significant when the learning environment was negative. A negative learning climate is one where admitting one's mistakes is not valued, there is a lack of communication among staff and learning practices are not shared. Conversely, a positive learning environment is one where nurses are encouraged to evaluate causes of medication errors and learn from these to minimise subsequent errors (Chang & Mark, 2011).

The SCM is aligned with Chang and Mark's (2011) positive learning environment as learning is inherent in its safe approach to medication management. This included checking medication charts with a partner or team member at regular intervals to minimise risk of omission and seeking clarification in relation to the prescription from an administrative and/ or educational perspective.

### **6.6.3.2 Falls Incidents**

Reduction in the incidence rates of falls has been associated with a higher proportion of RNs (Duffield et al., 2011), increased total hours of nursing time (Pearson, O'Brien-Pallas, et al., 2006) and nursing rounds (Meade et al., 2006; Woodard, 2009). These findings were supported in this study as there was a high

percentage of RNs on all participating wards (87%), two of the three divisions with significant reductions in falls were found used nursing rounds and both these divisions had additional nursing hours by incorporating PCAs and AINs into the SCM, though to a much lesser extent in the Medical Division.

The frequency of the nursing rounds was less than in the Meade et al. (2006) and Woodard (2009) studies, with both the Rehabilitation/Orthopaedic and Medical Divisions undertaking these three times in the morning and afternoon: immediately after handovers, and prior to meal breaks and settling patients for night shift. This finding adds to previous research as it shows the positive benefit of nursing rounds when undertaken less frequently, which may be more easily adopted into the busy norms and practices of nursing care. These divisions were the only divisions that decided to continue using nursing rounds after the study period, indicating they valued this practice. Both these divisions employed the majority of ENs, with 50% employed by the Rehabilitation/Orthopaedic Division and 30% employed by the Medical Division. Three of the Rehabilitation/Orthopaedic Division wards included PCAs or AINs, depending on availability, two on two wards and three on the other ward each shift and the Medical Division incorporated three AINs on one ward each shift. Nurses and AINs working together in a team have been identified as an important component of falls prevention (Dykes, Carroll, Hurley, Benoit, & Middleton, 2009). Consequently, this study also demonstrated a safe level of registered and unregistered skill mix as part of a team based model of nursing care that positively impacted on the incidence of falls.

The Critical Care Division was also found to have statistically significantly less falls. As this division maintained its high nurse to patient ratio because of the complexity of patient needs throughout the SCM and it ceased using nursing rounds after three months, this may be related to the benefits associated with two nurses working together to assist with manual handling and complex care requirements.

Other contributing factors for the reduction in falls may have been related to established practices associated with the hospital's falls prevention program which was introduced four years prior to the SCM. The program involves a broad spectrum of strategies such as promoting the use of a falls risk assessment tool and appropriate

interventions detailed in a specific falls care plan. A study to investigate the impact of both these strategies at this study's hospital found they were not causally linked to a reduction in falls, but were an important risk management strategy (Williams et al., 2007). The importance of clinical judgement, and therefore the interaction between staff and promotion of a learning environment, was emphasised in Haines, Hill, Walsh and Osborne's (2007) findings whereby clinical judgement of staff was of equivalent accuracy to the most widely used and researched falls screening instruments. Therefore, the opportunity for staff to learn how to risk assess so that appropriate falls intervention strategies can be deployed was enabled through the SCM.

Given that both the Surgical and Cancer/Neurosciences Divisions reported low numbers of falls prior to and during the study, a statistically significant reduction was unlikely to be found. The hospital level also did not show a statistically significant reduction but the overall falls rate had reduced during the study.

### **6.6.3.3 Behaviour Incidents**

The Rehabilitation/Orthopaedic Division was the only division where a statistically significant reduction in behaviour type incidents was found. Verbal or physical abuse towards nurses was the most commonly reported behavioural incident. The prevalence of verbal and physical abuse has been present for decades as demonstrated by numerous studies. In 1982 Duldt concluded that nurses had a 50-50 chance of encountering verbal abuse during a week at work, while Farrell (1999) 17 years later reported that 30% experienced verbal aggression on a daily or near daily basis. Five years later Winstanley and Whittington (2004) found that 27% were assaulted and 68% reported verbal abuse during one year, and in 2006 Farrell, et al.'s study concluded that 64% experienced some form of aggression within a four week period.

Interventions to assist nurses manage workplace violence include staff training programs which have been shown to assist nurses in preparing to manage the situation (Arnetz and Arnetz, 2000; Deans, 2003; Grenyer et al., 2004); mechanical restraints, the use of which is of limited efficacy (Allen et al., 2003; Nelstrop et al., 2006); and chemical restraint which requires patients' compliance (Pratt et al., 2008). At the study

hospital, the preferred intervention is for all nurses to attend management of aggression training. Of the study wards, two of the Rehabilitation/Orthopaedic Division wards attend advanced training as, given their patient mix, they are considered to be at a high risk of workplace violence.

On these wards less experienced staff commented on being more comfortable going into patients' rooms with an experienced nurse, where they felt patients could be or had been verbally aggressive. More experienced staff reported their experience in supporting these staff identify changes in patients' behaviour and also how to manage these situations.

The SCM enables experienced nurses to recognise early signs of aggression and subsequently alert less experienced staff. Under the guidance of the experienced nurse, de-escalation strategies such as active listening and building rapport with the patient with a calm demeanour can prevent violent situations from occurring (Luck & Usher, 2009). Working in teams also enables care to be planned to minimise delays in meeting patients' needs which has been associated with causing stress and verbal abuse (Araujo & Sofield, 2011) and creating a less intimidating environment for nurses caring for patients who have been abusive.

Although all other divisions did not significantly reduce the number of behaviour incidents, the overall decrease in the number of these incidents may have been related to the implementation of the SCM

#### **6.6.3.4 Injury Incidents**

The lowest proportion of all adverse events was injuries such as skin tears and pressure ulcers. Injuries were significantly reduced statistically for both the hospital and Medical Division while the others remained stable and consisted of small numbers. This finding differs from Fowler et al.'s (2006) findings where using a team based model in two medical wards, there were no changes in the number of pressure area cases. The significant reduction in this study may be attributed to the enhanced learning associated with the SCM through early recognition and subsequent risk

management interventions such as wound management guidelines and accurate documentation (Prentice & Stacey, 2001).

### **6.6.3.5 Summary**

The Cancer/Neuroscience Division was the only area where there was no statistically significant reduction in adverse incidents. This may be related to the smaller sample size. By contrast, despite the larger sample in the Surgical Division significant reductions were found only in medication incidents, but none in the other adverse incident categories. The most likely explanation is that, with the exception of medication incidents, fewer incidents were reported during the period that the baseline data was collected and this pattern continued throughout the study.

## **6.7 Generation of Knowledge and Theory**

The generation of knowledge occurred through the social and dialogic process of the solution focused sessions. Nurses developed an openness to express their feelings, hear alternate views, problem pose and solve, reflect upon tested solutions and share their experiential knowledge. During the process learning occurred and different types of knowledge were gained at both the individual and group level.

Interpretive knowledge occurred as nurses developed a shared understanding of the meaning of the SCM within their practice environment, and their individual and collective behaviours associated with agreed values. Nurses frequently referred to their values when determining solutions. Practical knowledge was evident through their growing confidence and development of a range of skills such as interpersonal and communication, teaching, facilitating and problem solving. On many occasions nurses led the clinical scenarios and used ward meetings to prepare for the solution focused sessions in order to ensure the views of those not able to attend the meetings were presented. The process and shared understanding of the SCM enabled nurses to come together and get to know one another affectively and cognitively which constitutes relational knowledge and strengthens communities (Park, 2001). This was evident through the empathy shown to one another and statements indicating they understood the impact of their interactions and interdependence with each other. Falls-Borda (2001) concluded that PAR can “convert those who engage in its processes to

become thinking, feeling persons” (p.31) and this was evident in the connectedness observed among nurses.

Reflective knowledge, congruent with the critical theory tradition was gained through rational discourse (Habermas, 1970) in understanding the problems associated with the SCM, collectively agreeing on solutions then reflecting upon their effectiveness. This process generated personal and group theories through individual and group involvement in taking action to change nursing practice, participating in reflexivity and subsequently informing practice associated with the SCM at a ward, divisional and hospital level. This process also constitutes participatory evaluation (Park & Williams, 1990).

The process was emancipatory as it empowered nurses through action and reflective discussion to be responsible for identifying practice issues, determine the required course of action to improve practice and subsequently evaluate its effectiveness from both an individual and ward based level. While the quantitative analysis did not indicate a culture change, nurses’ sustained actions, guided by their agreed values, transformed each ward’s culture from one using a patient allocation model to one suitable for a shared care model. This meant values and behaviours associated with supporting one another in the delivery of nursing care using the SCM were integrated into their routine practice and over time, their working culture. This facilitated the move from working independently, as fostered by the patient allocation model, to working as part of a team based nursing delivery model.

## **6.8 Study Limitations**

There were a number of limitations associated with the methodology, in particular the dissonance with the PAR approach as the Nursing Executive and not the nurses determined the need to change from the patient allocation model to the SCM. This limitation was mitigated by the researcher ensuring authentic participation of nurses. Another was that the research was undertaken by one researcher rather than a team of researchers. This limited the time available to support ward staff and the CNS/CNM and SDN as more wards joined the study. This was managed, in part, by the researcher changing the method of implementation for eight of the 21 participating wards, so that the researcher did not work clinically as part of the team in the first week

during implementation of the SCM. The different methods of implementation were adjusted for in the statistical analysis.

Other limitations related to the sample. The Nursing Executive selected the participating wards on the basis of three factors. Firstly, those wards with the greatest variation in staffing levels (the specialised units having a greater proportion of experienced staff). Secondly, the wards used the patient allocation model and thirdly, wards scheduled for closing for renovation were excluded. The exclusion of the urology and plastic surgery/ophthalmology wards (closed for renovation), intensive care units, emergency department, bone marrow transplant unit, theatres, psychiatric ward and surgical, haemodialysis and satellite dialysis day units meant the findings are not generalisable to all nursing units in tertiary hospitals but are limited to the specialities of the 21 participating wards. However, this study is the most comprehensive of its type to date as it involved 21 diverse wards with a total of 571 beds, 1006 nurses returned surveys and 437 nurses participated in ward based solution focused sessions. In addition, 1156 patient survey responses were evaluated, together with three years of adverse events and patient complaints. At the divisional level the small sample size of the Cancer/Neuroscience and Critical Care Divisions limited capacity to detect significant differences in the outcome measures for these divisions.

Another limitation was capturing only one group of stakeholders' satisfaction with bedside handover. Nurses on eight wards requested to include trialling bedside handover as part of the SCM. The small sample size limited capacity to determine a significant effect. Nurses' satisfaction surveys were modified for these wards to capture their satisfaction with bedside handover. However, patients' satisfaction surveys were not modified, therefore specific information relating to their involvement was not obtained resulting in limited assessment of bedside handover.

## **6.9 Chapter Summary**

The main component of the SCM was pairing experienced nurses with less experienced nurses to promote a supportive environment where workload was shared and therefore more manageable, and learning became integral to routine delivery of care. Three months following implementation of the SCM the pairing was negatively associated with a statistically significant increase in workload. The primary causes,

despite no increase in nurse to patient ratio, was a perception of an increased patient load by the paired or team of nurses sharing responsibility for combined patient care requirements, and increased responsibilities for the experienced nurse supporting the less experienced nurse. These findings support other team based studies findings. The skill mix in this study was largely similar to other team based studies with the exception of the use of PCAs in the Rehabilitation/Orthopaedic Division.

The negative correlation reflected the transition from the patient allocation model to the SCM and, as found by other study findings, was influenced by the interaction between nurses and their capacity to work as part of a team. Through the application of PAR methodology and guided by their shared values and participation in the facilitated solution focused sessions, nurses actively engaged in critical reflection of their practices and created a culture conducive to using the SCM. This is highlighted by the statistically significant findings at 12 months of improved learning opportunities and assistance with managing workload when paired with an experienced nurse and overall return to baseline measures for workload and culture of support.

Pairing of an experienced nurse with a less experienced nurse is argued to be the reason for the statistically significant improvement in patient satisfaction with discharge planning, reduction in complaints for Rights Respects and Dignity category and reductions in all four adverse events, along with undertaking nursing rounds in the case of falls. The experienced nurses' influence is multilayered including role modelling behaviours sensitive to patients' needs, being a resource for internal and external services associated with effective discharge planning, and integration of error management practices into routine nursing care.

The contrast between patients reporting high levels of satisfaction with nursing care and findings of statistically significant increase in complaints for Quality Clinical Care was associated with the different levels of skill mix reflected in the two largest divisions, where this effect was found. Conversely, the different skill mix with greater proportion of graduates, ENs and use of AINs and PCAs in one of these divisions - the Rehabilitation/Orthopaedic Division - was positively associated with both staff and patient outcomes. These were statistically significant improvements in managing

workload and learning opportunities when working with an experienced nurse and reductions in three of the four adverse incidents. The other division - the Medical Division had statistically significant reductions in two adverse incidents. These mixed findings highlight the complexity of learning to work together within a team involving different levels of staff with different expertise.

Chapter seven completes the dissertation by outlining the recommendations arising from the study findings and identifying areas for further research.

## CHAPTER SEVEN

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### ***RECOMMENDATIONS AND CONCLUSION***

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In this chapter recommendations are made in relation to establishing a SCM. These include the development of a supportive culture characterised by establishing a work based learning model and the development of effective teams. In addition, areas for further research are identified. The contribution made by the thesis in expanding knowledge concerning team based models to deliver nursing care are summarised in the conclusion.

#### **7.1 Recommendations**

The recommendations arising out of the findings of this study include the factors identified with the successful implementation of the SCM and those required to enable its sustainability and capacity to respond to the changing workforce.

##### **7.1.1 Development of a Supportive Culture**

A major challenge in this study was supporting nurses' change from working independently with minimal interaction with other nurses to working alongside nurses whereby they were required to support each other in meeting patient requirements. This involved accepting nurses' varied levels of skills and competencies and supporting each other in addressing any deficits on a shift by shift basis. Prior to the SCM, skill and competency deficits were addressed by the SDN, whose role has been accepted as being responsible for provision of ward based learning, and by nurses attending hospital based programmes. In reality it is not feasible for the SDN, or any individual, to meet the clinical learning requirements of nurses as they arise, resulting in a reliance on classroom style clinical updates. A criticism of this type of professional development is the didactic nature and separation from practice (Webster-Wright, 2009) and there is no clear evidence that it contributes to a learning culture (McCormack & Slater, 2006). Therefore in developing a supportive culture conducive to using the SCM a different approach to professional development is required.

### **7.1.2 Adoption of Work-Based Learning Model**

Nurses participating in the solution focused sessions were introduced to different methods of learning congruent with Raelin's (2008) work based learning model. Raelin's (2008) model is centred on conscious reflection of actual work experiences where theory merges with practice and knowledge with experience. It is recommended that nurses adopt a transformational work based learning model with features identified by Raelin (2008). Using such a model nurses are more likely to become active learners, participating in, taking responsibility for and generating their own learning from everyday practice (Manley, Titchen, & Hardy, 2009). This approach enables both experienced and less experienced nurses to actively engage with experience and critical reflection, rather than placing responsibility on the experienced nurse to develop procedural skills and competencies of the less experienced nurse.

To enable this change requires the Nursing Executive to commit to transformative work based learning. This in turn requires the provision of appropriate resources, and valuing the changes and expertise made through work based learning. A range of programmes are required to prepare and support nurses adopt a work based learning model. These include transformational work based learning programmes and facilitator training so that nurses can facilitate critical reflection learning groups.

### **7.1.3 Development of Effective Teams**

A number of factors contribute to the development of effective teams within a SCM framework. These include determining an appropriate skill mix, and preparing nurses and unregistered staff to work within teams.

#### **7.1.3.1 Team Mix**

The statistically significant findings for staff outcomes of increased learning opportunities and workload being more manageable were associated with a less experienced registered nurse working with a more experienced registered nurse. For patients, the statistically significant findings of improvements in discharge planning, reduction in adverse events and complaints were associated with a skill mix of

registered and non registered staff. Therefore, it is recommended that either of these combinations work together in teams using the SCM.

### **7.1.3.2 Integration of AINs**

Given the expected reduction in availability of RNs (Department of Health & Ageing, 2004) and the increased use of AINs, it is recommended that AINs are incorporated into the teams as an additional staff member, so that the ratio of patients to team members remains unchanged. It is essential AINs are not employed as a substitute for RNs and ENs but to complement and support them in the delivery of nursing care.

Assistants in nursing should therefore be under the direct supervision of a registered nurse and it is recommended their role is to include participating in nursing rounds. In this study and in those of Meade et al. (2006) and Gardner et al. (2009) AINs successfully participated in nursing rounds. To overcome concerns identified by Kalisch (2006) and Kalisch et al (2009) associated with AINs' performance and to optimise the working relationship between registered staff and AINs, it is recommended that all team members undertake specific team training.

### **7.1.3.3 Team Training**

The interactions required between registered and unregistered staff using the SCM highlighted the importance of good interpersonal and communication skills. According to Davidson et al. (2006) these include developing open communication, trust and mutual respect among the team members. To achieve these it is recommended that facilitators are employed to work with ward teams to develop and deliver teambuilding sessions.

Components of these sessions should include three key features recommended in the literature as being essential teambuilding elements. These consist of establishing ground rules and norms, role and responsibility clarification and establishing goals for the group (Beebe & Masterson, 1997; Salas et al., 1999; Laing, 2003).

Establishing ground rules and norms or team expectations should be grounded in the staff's agreed values and associated behaviours. This will facilitate shared understanding and expectations of how they should treat others and be treated themselves (Avery, 2000). The collective involvement in values clarification and demonstration of associated behaviours will enable a feeling of mutual respect and trust to be developed among the team members.

In order to function as competent team members two factors are essential (Beebe & Masterson, 1997). Each role within the team must be defined based on the individual responsibilities and desired outcomes associated with that role (Salas et al., 1999) and each member must be held accountable for their actions (Laing, 2003). This component will be essential as nursing teams incorporate AINs and develop an understanding of how best to use this supportive role.

Through application of the work based learning model individual and common goals will be determined. A clear understanding of these goals is essential in order for these goals to be achieved (Laing, 2003). The role of the facilitator and critical reflection learning groups will enable the setting of goals that contribute to improving the quality of patient care.

### **7.1.4 Use of Nursing Rounds**

Despite the low level of nurses' satisfaction with nursing rounds, this study's findings support other research findings (Meade et al., 2006; Woodard, 2009) of their association with a statistically significant reduction in patient falls. Consequently, it is recommended that all wards that have a high risk of falls incorporate nursing rounds into their SCM. To assist with managing nurses' low level of satisfaction with nursing rounds, nurses should be involved in discussions regarding its use as an evidenced based falls risk management strategy. This will enable nurses to determine the frequency of the nursing rounds and subsequent integration into planned patient care. In addition, at a ward level, nurses should participate in regular review of the evidence associated with the impact of all falls risk management strategies and in the decision making in relation to recommendations for changes.

### **7.1.5 Use of Bedside and Board Handover**

There was no statistically significant finding associated with either bedside or board handover. However, given the recommendation of adopting a work based learning model it is recommended nursing leadership support staff in enabling them to make changes associated with their use if the staff determine these are worthwhile practice improvements.

### **7.1.6 Policy**

Waterman, Tillen, Dickson and de Koning (2001) systematic review of 59 action research studies found action research is suited to developing innovative practices and services over a wide range of healthcare situations. This study combined action research and ePD approaches to successfully implement a major organisational change that affects nurses daily practice and demonstrated its impact on nurses and patients. These factors serve as strong evidence for the following broader policy recommendations:

#### **7.1.6.1 Quality improvement**

Nursing Executives to adopt a policy whereby action research and practice development processes are used to monitor and improve the quality of nursing services at both a ward and hospital level. At the core of this policy a framework is required that includes participation in decision-making by key stakeholders that is educative and empowering and systematic inquiry that evaluates the effects of the intervention and builds feedback loops into ongoing research and action cycles. Outcomes associated with the application of this policy will enable hospitals to inform their quality management strategy and influence other healthcare improvement policies.

#### **7.1.6.2 Education**

To implement this policy education is required to train staff in the use of action research and practice development processes and in facilitating these processes. A two tiered approach is recommended. Firstly, at a local level by hospitals establishing education programmes, either by using internal expertise or commissioning external

experts. In the case of the latter, part of the contract would include a train the trainer approach to ensure internal staff obtain the expertise and manage financial constraints associated with long term use of external contractors. Secondly, through establishing a number of mutually beneficial partnerships. Among these partnerships are government health departmental ministries to gain sponsorship to fund education and research activities; universities to establish joint appointments to assist with developing expertise and creating research opportunities, and other hospitals to broaden the opportunities for generating creative ideas and implementation of changes to improve health practice.

## **7.2 Future Research**

The findings of this study provide a foundation for further research to investigate the impact of implementing the principles of a SCM in areas and aspects not addressed in this study. These include clinical areas excluded in this study, patients' perspective of nursing rounds and bedside handover, and the relationship between adopting a work based learning model using a transformative approach and a team based method of delivering patient care.

### **7.2.1 Investigate the Impact of Implementing the Principles of a SCM in Emergency Department, Theatres and Day Wards**

No evidence is available to demonstrate the optimal model of organisation and delivery of nursing care for these areas as they adapt to changes in the nursing workforce. However, this study's findings have demonstrated statistically significant benefits for both staff and patients when nursing care is delivered by a team of registered nursing staff or a combination of registered and unregistered staff. Similar to the study wards, these clinical areas have capacity to work in teams and could achieve similar benefits from adopting the principles of the SCM. Consequently, using the learning from this study, the research should be replicated in these clinical areas.

### **7.2.2 Determine Patient Satisfaction with Nursing Rounds**

The patient safety benefits of reduced falls associated with nursing rounds have been established in this study and other studies (Meade et al., 2006; Woodard, 2009).

However, with the exception of Gardner et al.'s (2009) pilot study in two surgical wards, patient satisfaction assessment has been limited to overall provision of nursing care. Research is required to address the gap in determining patients' experiences with nursing rounds to enable practice improvements. A PAR approach would enable patients' active participation which would enhance the relevance of any findings. In addition, these findings would also assist in providing evidence for nurses to consider in relation to their perception of the benefits of nursing rounds as an integral component of nursing care. The patients' perspective may influence nurses' satisfaction with the inclusion of nursing rounds as part of their routine patient care.

### **7.2.3 Investigate Impact of Bedside Handover from Nurses' and Patients' Perspective**

There is limited evidence to causally link bedside handover with enhanced communication among nursing staff and improved patient outcomes (Poletick & Holly, 2010; Risenberg et al., 2010;). Due to only eight wards opting to incorporate bedside handover into the SCM, the sample size was too small to detect a significant effect. In addition, the patients' perspective was not sought. Therefore, larger studies are required using PAR methodology whereby patients and nurses are authentic participants. This approach will enable a shared understanding of bedside handover from both patients and nurses' perspective to be investigated.

### **7.2.4 Explore the Relationship Between Adopting a Work Based Learning Model and Using a Team Based Model of Patient Care**

This study demonstrated the successful use of social and dialogic processes to enable critical reflection of practice in order to generate improvements in practice. Research is required to investigate the formal adoption of this approach through the development of a work based learning model and its application in supporting team based models of patient care.

### 7.3 Conclusion

The findings of this study confirm that combinations of registered nurses of different levels of experience working together as a team - either in pairs or with unregistered AINs and or PCAs - provides safe patient care for a diverse range of clinical specialities. This was demonstrated by the statistically significant association between the team based approach to patient care and the reduction in occurrences of four major adverse events. Other statistically significant associations related to patient care were shown in improvements in patient satisfaction with discharge planning and reduction in complaints for the manner in which nursing care was provided. However, the study also highlighted the difficulties in making the transition from nurses working independently using the patient allocation model to the team based SCM. This was characterised by challenges associated with maintaining the same standard of care as reflected in an increase in patient complaints regarding the quality of care. Integral to the provision of quality nursing care was overcoming complexities associated with the diversity of team members' personalities and learning to work together.

These challenges were overcome through staff participation in facilitated social dialectic discourse involving critical reflection of their practice, resulting in agreed course of action to transform their culture into one conducive to using the SCM. Through this process nurses gained knowledge and generated individual and group theories that influenced their practice. The statistically significant findings of increased learning opportunities and more manageable workloads associated with a less experienced nurse working with a more experienced nurse highlights the importance of establishing formal structures to support this work based approach to learning.

This study has made a significant contribution to addressing gaps in the literature relating to the type and diversity of wards in which a team based model can be applied. The inclusion of different staff and patient outcome measures, not previously assessed in team based models, adds to the body of knowledge associated with factors that influence staff satisfaction, and enhance their learning, and patient outcomes associated with nursing practice. In addition, it provides evidence of the effective use of PAR methodology underpinned by ePD principles to enable practice

change that improves the quality of patient care. Finally it provides a rich source of information upon which further research can build.

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## APPENDIX A

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### **RESEARCHER'S VALUES AND BELIEFS**

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The researcher's values and beliefs are listed to show how these influenced working with nurses using PAR and ePD principles, throughout the study.

#### **Personal**

Being honest and transparent in all interactions with people

Respect the rights of others

Value other people's views

To show kindness and consideration towards others

Being patient and tolerant with people

To do the right thing by others

To treat people in a way that I would like to be treated

Value the worth of others

Be responsible for my actions/behaviour

#### **Nursing and nursing staff**

Respect the profession of nursing and value nurses' contribution to health care.

Believe that nurses make a difference and can positively affect the working lives of each other and patient outcomes.

Respect nurses' knowledge, expertise and their ability to manage complex health care systems.

Value the quality of nursing care provided.

#### **Ways of working**

Integral to changes in nursing practice is ensuring nurses are actively involved in decision making associated with the change.

Being transparent and promoting an open exchange of views and opinions.

Being inclusive and ensuring all staff have an opportunity for equal participation.

Being collaborative and tapping into the range of different skill sets and abilities among the staff to optimise achieving and sustaining the desired goals.

Supporting staff to work together and to learn from each other.

Believe in staff's potential and finding ways to help them reach this.

Foster innovation and help nurses develop a research base for their practice.

#### **Patients**

A right to receive the best possible nursing care.

Patients should respect the nurse's role in providing patient care and treat nurses in a respectful manner.

Patients should be treated respectfully by nursing staff .

Patient's privacy, dignity and confidence should be maintained by nursing staff.

## APPENDIX B

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### ***PILOT STUDY WARDS OVERVIEW OF SCM: ACUTE MEDICAL & AGED CARE***

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#### **Principles of Shared care model**

- Enables a learning culture
- Supports staff
- Provision of patient centred care
- Experienced nurse is paired with junior nurse
- Shift coordinator (SC) for am and pm shift is patient free
- Regular nursing rounds
- Board hand-over in morning shift
- Routine checking of all charts
- 

#### **Paired Combinations**

- Experienced RN & EN
- Experienced RN & RN graduate
- Experienced RN & EN graduate
- RN graduate & RN graduate
- RN graduate & EN graduate
- Casual and agency staff are paired with either an experienced RN or EN
- When pairs consist of 2 inexperienced staff then SC is responsible for assisting them prioritise care requirements. If SC is unable to assist the pair then the SC arranges for the SDN to assist the pair.

#### **Shared care Model**

- Roster pattern of 6/5/3 is unchanged.
- Four nurses are paired and allocated either 9 patients in the morning or 10 & 11 in the afternoon.
- One nurse in the morning is allocated the remaining 3 patients. Nurse is to assist shift coordinator (SC) as directed.
- SC on both shifts does not take any patients.
- Experienced nurse is paired with junior nurse:
  - Provides supervision & education
  - Prioritise patient care requirements
  - Works together to provide patient care requirements
  - Shares documentation & hand-over responsibilities

#### **Nursing Rounds**

- Assess patients' pain level & administer prescribed analgesic.
- Undertake vital signs if required.
- Administer prescribed scheduled medications.
- Offer toileting assistance.
- Assess patients' position and comfort.
- Attend to pressure area care as required.

- Make sure call bell is within reach.
- Put the bedside table next to bed or chair as applicable.
- Ask the patient if there is anything else they would like you to attend to prior to leaving the room.
- Let the patient know when you will be back in the room.

### **Nursing Rounds, Board Hand-over & Meal breaks**

**Morning shift:** 0715, 0845, 1145, 1245.

**Afternoon shift:** 1430, 1630 & 1930. The 1930 round to be extended to complete all care requirements prior to night staff commencing.

#### **Morning Board Hand-over**

All nursing and PCA staff at 10am meet with SC and ward clerk to provide patient update. Estimated time 5-10 mins.

#### **Tea & meal breaks**

Each nurse within the pair are required to attend breaks separately so that patients continue to be cared for.

**Morning shift:** Tea breaks: 1st tea: 0900, 2nd tea: 0930, SC 1015.

Lunch breaks: 1st lunch 1200, 2nd 1300, SC 1300.

**Afternoon shift:** Tea breaks: 1st tea: 1445, 2nd tea 1500.

Meal break: 1st meal 1700, 2nd meal 1800.

#### **Hand-over**

- SC responsible for ensuring computer hand-over sheet is current.
- Each staff member provides information for tape hand-over.
- Hand-over to consist of patient's name and changes in patient's condition using DAR format (all other information is provided on printed sheet). The exception is new patients where by patients name, diagnosis, intervention, & treatment plan is stated.

#### **Morning shift**

- Hand-over all staff 0700-0710 (5B SC allocates one nurse to work with night staff to assist patients get out of bed in preparation for breakfast)
- At 0710 check all charts with night staff
- Experienced nurse determines if specific priority care is required prior to commencing first nursing round.
- At 0715 with night staff commence first nursing round. Includes assisting patient with toilet needs, helping patients sit up or getting patients out of bed ready for breakfast.
- Assist patients with feeding as required.
- Paired nurses gather patient care plans and review patient care requirements
- Experienced nurse in a supportive and educational manner guides the prioritisation of all patient care requirements.
- Together both nurses work out their care plan for the shift. Both nurses then concentrate on the provision of care requirements by undertaking these together as much as is practicable.
- Second nursing round commences at 0845.

- One nurse goes to tea at 0900, and the other at 0930, while each other is at tea the remaining partner ensures all bells are answered and continues with patient care requirements.
- At 1000 both nurses attend ward board update.
- Both nurses together attend to patients hygiene & toileting needs such as bed baths, bedpans, & assisting to the toilet.
- Both nurses undertake various procedures together such as catheterisation, tracheostomy care, complex dressings, lying and standing BP, administration of insulin, blood products, intravenous infusions, & schedule 8 drugs.
- Both nurses undertake patient assessment together such as admission process, discharge planning, physical, cognitive, functional, integrated assessment score and Braden score.
- At 1145 both nurses undertake nursing round.
- At 12MD one nurse goes to lunch.
- At 1245 both nurses undertake nursing round.
- At 1300 remaining nurse goes to lunch.
- At 1330 both nurses check all charts and ensures documentation is current & medications are available for next shift.
- Attend education sessions as directed.

**Afternoon shift**

- At 1430 both nurses undertake nursing round
- At 1445 one of each pair goes to tea. If required morning staff continue nursing round.
- At 1500 remaining staff go to tea.
- At 1515 afternoon staff check all charts with morning staff to ensure they are complete.
- Both nurses then concentrate on the provision of care requirements by undertaking these together as much as is practicable.
- At 1630 both nurses undertake nursing round
- At 1700 one of each pair goes to dinner
- At 1800 remaining staff go to dinner.
- At 1930 both nurses undertake extended nursing round to complete all patient care requirements prior to night staff commencing.
- Complete nursing documentation.
- Ensure all charts are accurate and current.
- Ensure any night medications have been charted and medications are available for night staff.
- Each pair to check each other charts.
- Complete hand-over.

## APPENDIX C

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### ***PILOT WARDS PATIENT EXIT INTERVIEW***

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Hello, my name is Heather Kidd, I am a nurse working with the staff on this ward to assist them with reviewing the way nursing care is organised and how patients receive this care so that improvements in nursing care can be made.

It is very important that the patient and or their family or carer views are taken into consideration in order to ensure patient needs are understood and where possible can be incorporated into the improved model of nursing care.

The purpose of this interview is to find out what the important aspects of nursing care from your perspective are and how satisfied you were with the nursing care provided during this hospital stay.

Your participation is entirely voluntary and whether you participate or not will have no bearing on your management during this or any subsequent time you are in hospital.

Your responses are confidential. The interview takes about 15 mins to complete. It consists of me asking you a number of questions and writing down your answers. You can stop at any time and discontinue or carry on at another time before you are discharged from hospital.

#### **Demographic Information**

Firstly I would like to ask you some questions about you. This is so I can check that a range of patients and or their family or carers has been given the opportunity to express their views about the nursing care on wards 5A & 5B. This information cannot be used to identify you.

Indicate ward:

Indicate gender: Male Female

Indicate if: Patient Family member Carer

What is your relationship to the patient?

Parent

Son / Daughter

Husband / Wife / Partner

Brother / Sister

Grandparent

Other \_\_\_\_\_

Are you a paid carer? Yes No N/A

How old are you?

What date were you admitted to the hospital? (medical notes)

What date were you admitted to this ward? (medical notes)

Have you been on any other wards during this admission at RPH?

Record reason for admission (from medical notes)

Date of discharge.

**General nursing care questions**

What do you consider are the most important aspects of nursing care that you expect to receive, while in hospital?

(Each response is listed separately and patient, family or carer is asked to rate their level of satisfaction and indicate why they thought the care had not been provided).

How satisfied were you these aspects of nursing care?

Very Dissatisfied	Dissatisfied	Satisfied	Very satisfied
1	2	3	4

If these aspects were not provided or you were dissatisfied why do you think this was the case?

What do you consider are the most important aspects of nursing care that you expect to receive, while in hospital?

How satisfied were you these aspects of nursing care?

Very Dissatisfied	Dissatisfied	Satisfied	Very satisfied
1	2	3	4

If these aspects were not provided, or you were dissatisfied why do you think this was the case?

What do you consider are the most important aspects of nursing care that you expect to receive, while in hospital?

How satisfied were you these aspects of nursing care?

Very Dissatisfied	Dissatisfied	Satisfied	Very satisfied
1	2	3	4

If these aspects were not provided or you were dissatisfied why do you think this was the case?

**Specific nursing care questions**

What do you consider are important aspects of nursing care regarding your physical needs? (**prompt: such as your hygiene, & toileting**)

How satisfied were that your physical needs were met?

Very Dissatisfied	Dissatisfied	Satisfied	Very satisfied
1	2	3	4

If these aspects were not provided or you were dissatisfied why do you think this was the case?

What do you consider are important aspects of nursing care regarding your emotional needs? (**prompt: such as your feelings or helping you with concerns you may have**)

How satisfied were you that your emotional needs were met?

Very Dissatisfied	Dissatisfied	Satisfied	Very satisfied
1	2	3	4

If these aspects were not provided or you were dissatisfied why do you think this was the case?

**Specific nursing care questions**

What do you consider are important aspects of nursing care regarding your treatment?

How satisfied were you with your treatment?

Very Dissatisfied	Dissatisfied	Satisfied	Very satisfied
1	2	3	4

If these aspects were not provided or you were dissatisfied why do you think this was the case?

What do you consider are important aspects of nursing care regarding discharge planning?

How satisfied were you with your discharge planning?

Very Dissatisfied	Dissatisfied	Satisfied	Very satisfied
1	2	3	4

If these aspects were not provided or you were dissatisfied why do you think this was the case?

**Specific nursing care questions**

What do you consider are important aspects of nursing care regarding involving your family/carer with your progress **(if family member/carer then ask from their perspective)**

How satisfied were you with how your family/carer were involved with your care?

Very Dissatisfied	Dissatisfied	Satisfied	Very satisfied
1	2	3	4

If these aspects were not provided or you were dissatisfied why do you think this was the case?

What do you consider are important aspects of nursing care regarding keeping you informed of your progress and providing relevant patient information and education?

How satisfied were you these aspects of nursing care?

Very Dissatisfied	Dissatisfied	Satisfied	Very satisfied
1	2	3	4

If these aspects were not provided or you were dissatisfied why do you think this was the case?

**General care question**

How satisfied were you overall with the nursing staff while in hospital?

Very Dissatisfied	Dissatisfied	Satisfied	Very satisfied
1	2	3	4

How satisfied were you overall with the nursing care you received while in hospital?

Very Dissatisfied	Dissatisfied	Satisfied	Very satisfied
1	2	3	4

Are there any other comments you would like to make about your stay in hospital?

## APPENDIX D

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### MAIN STUDY WARDS

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<b>Divisions and speciality</b>	<b>Beds</b>
<b>Cancer/Neurosciences Division</b>	
Medical oncology	30
<b>Critical Care Division</b>	
Cardiology /Coronary Care Unit	32
<b>Medical Division</b>	
Geriatric evaluation and management	17
Short stay medical unit	32
Nephrology	21
Acute and chronic medical, gastroenterology and respiratory	21
Acute and chronic gastroenterology, respiratory and general medicine	16
General medicine, endocrinology and dermatology	30
Acute immunology and infectious diseases unit	10
Acute ambulatory unit	30
<b>Surgical Division</b>	
Orthopaedic /spinal	30
Orthopaedic and neurosurgery	30
Cardiothoracic and vascular surgery	30
General surgery	30
State major trauma unit	30
<b>Rehabilitation/Orthopaedic Division</b>	
Acquired brain injury rehabilitation unit	29
Neurology rehabilitation unit	27
Amputee, rheumatology and neck of femur rehabilitation unit & five isolation beds	32 + 5
Elective orthopaedics and high dependency unit	22 + 5
Post trauma orthopaedic	22
Spinal unit	40
<b>Total beds</b>	<b>571</b>

Excluded areas: Intensive care units, bone marrow transplant unit, day surgery unit, haemodialysis unit, satellite dialysis unit, burns unit, psychiatric ward, emergency department and theatres. (Plastic surgery/ophthalmology closed for renovation).

## APPENDIX E

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### ***MEDICAL DIVISION WARD EXAMPLE OF SCM GUIDELINES***

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#### **Principles of shared care model**

Enables a learning culture

Supports staff

Provision of patient centred care

Experienced nurse, (team leader) is paired with a less experienced nurse. The two nurses will be allocated a group of patients by the shift coordinator (SC) which they are both responsible for all care requirements.

Shift coordinator for am and pm shift is patient free

Regular nursing rounds

Routine checking of all charts

When pairs consist of 2 inexperienced staff then SC or SDN is responsible for assisting them prioritise care requirements.

#### **Paired combinations**

Experienced RN & RN graduate

Experienced RN & EN graduate

Experienced AEN & EN graduate

Experienced AEN & RN graduate

RN graduate & RN graduate

Casual and agency staffs are paired with either an experienced RN or EN who is working a full shift. Or if the casual is experienced can fill the role of team leader.

#### **Staff to patient allocation**

Roster pattern of 8/8/4 is unchanged. Nurses are paired and allocated in the morning and afternoon shift:

##### **East Wing: Team A**

9 patients to 2 nurses, rooms H I J K L M

**Team B:** 8 patients to 2 nurses, rooms N O P Q

##### **West wing: Team C**

Three nurses are allocated 13 patients

The **SC** is responsible for allocation, which is dependent on patient acuity, skill mix and continuity of care issues.

**SC** on both shifts does not take any patients.

#### **When the floor is short staffed by one nurse following pairing to occur:**

**3 nurses to east wing & 2 nurses to west wing.** One nurse fills the role of float nurse who is allocated specific duties by the SC such as observations, dressings, admissions, discharges, & escorts.

#### **Night shift:**

**West wing** 2 nurses are paired to work as a team responsible for 13 patients.

**East wing** 2 nurses who are paired to work as a team for 17 patients.

All night staff are to rotate weekly to both wings working with all staff.

**Experienced nurse is paired with junior nurse:**

- Acts as the team leader
- Provides supervision & education
- Prioritise patient care requirements
- Works together to provide patient care requirements
- Shares documentation & hand-over responsibilities
- Checks taped handover is accurate.
- Record on white board staff that are on short shifts or attending in-service.

**Nursing rounds**

Emphasis is undertaking observations and administering prescribed medication.

Assess patients' pain level & administer prescribed analgesic

Undertake vital signs if required

Administer prescribed scheduled medications

Offer toileting assistance

Assess patients' position and comfort

Attend to pressure area care as required

Make sure call bell is within reach

Put the bedside table next to bed or chair as applicable

Ask the patient if there is anything else they would like you to attend to prior to leaving the room

Let the patient know when you will be back in the room

**Nursing round times**

**Morning shift:** Following handover **0730**, prior to tea **0900** lunch breaks, **1145** and prior to handover **1245**.

**Afternoon shift:** Following handover **1400**, prior to evening meal break **1700** and at **1900** and **2100hrs**.

**Hand-over**

SC responsible for ensuring computer hand-over sheet is current.

Each staff member updates taped handover

Handover to SC can be undertaken in the following ways:

Team leader, in presence of less experienced partner

Less experienced partner, in presence of team leader

Hand-over to consist of patients' name and changes in patients' condition using DAR format (all other information is provided on printed sheet). The exception is new patients where by patients name, diagnosis, intervention, & treatment plan is stated.

Keep to 20 minutes.

**Tea & meal breaks:**

Each nurse within the pair is required to attend breaks separately so that patients continue to be cared for.

**Morning shift:** Tea breaks 15 minutes: 1st , 2nd & 3rd tea between **0915hrs** & **1000hrs**, SC at their discretion.

Lunch breaks: 30 minutes: 1st lunch **1200hrs**, 2nd **1230hrs** & 3rd **1300hrs**. SC at their discretion.

At **1245hrs** agency/casual staff to hand-over to partner. Nurse paired with agency or casual staff to go to lunch at **12MD**.

**Afternoon shift:** Tea breaks 15 minutes: all staff between **1430hrs** to **1500hrs**.

Meal breaks 30 minutes: 1st **1700hrs**, 2nd **1730hrs** & 3rd at **1800hrs**. SC at their discretion.

**PCA duties:** work with nurse to assist patients out of bed and get them ready for breakfast. Leave towels & bed linen for self-caring patients as directed by nurse. Commence bed making. Assist patients with meals such as preparing the table, opening packets & cutting food.

## APPENDIX F

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### **REHABILITATION/ORTHOPAEDIC DIVISION WARD EXAMPLE OF SCM GUIDELINES**

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#### **Principles of shared care model**

Enables a learning culture

Supports staff

Provision of patient centred care

Teams have a mixture of experienced & less experienced nurses.

Shift coordinator (SC) for am and pm shift is patient free

Staff development nurse (SDN) to be patient free to ensure provision of clinical supervision.

Regular nursing rounds

Routine checking & updating of all charts

When teams consist of inexperienced staff then SC or SDN is responsible for assisting them prioritise care requirements.

#### **Team combinations**

Nurses are divided into two teams to rooms A to J and K to Q. In the morning shift one team will consist of five nurses and one PCA while the other will consist of four nurses and one PCA. In the afternoon shift both teams will consist of four nurses & 1 PCA. The team leader will further divide the teams into pairs who will work together but take responsibility for specific patient's medication and documentation.

The nursing skill mix for each team ideally will consist of a CN or senior RN, RN, ASEN, EN and the team of five either another RN or EN. Each team will be led by a team leader and supported by SC & SDN. The most senior nurse takes the role of team leader. However, junior staff will be given the opportunity to learn the team leader role in a supported way. In addition, if casual or pool staff are experienced then they may fill the role of team leader.

#### **Role of team leader**

- Prioritises patient care requirements
- Provide supervision & education
- Works with team to provide patient care requirements
- Shares documentation & hand-over responsibilities

#### **Staffing**

Roster pattern of 10/9/5 is unchanged. Staffing numbers change depending on patient numbers and acuity levels.

In order to ensure patient continuity and staff having the opportunity to work with each other, staff will be allocated into two teams over a fortnight period. After which time there will be a staggered change of junior & senior staff among each team.

#### **Shift coordinator**

SC is patient free and is responsible for checking team combination each shift, which may change due to unplanned leave, skill mix and changes in patient acuity. SC will also be available to support the team leaders and teams, undertake wound checking, work on nursing practice standards and undertake the role of rehabilitation programme case manager.

**Night shift:** Two hourly nursing rounds are continued until 0200 then recommenced at 0600. Handover changed to be split among all night staff so that SC receives hand-over for all patients and each team receive hand-over for relevant patients.

**Weekends & Public holidays:** SCM principles continued.

### **Nursing rounds**

Provide continence care	Check and update all charts
Undertake leg measures as required	Attend to pressure area care as required
Replace TED stockings & wash legs as required	Put the bedside table next to bed or chair as applicable
Assess patients pain level & administer prescribed analgesic as required	Ask the patient if there is anything else they would like you to attend to prior to leaving the room
Undertake observations as required	Let the patient know when you will be back in the room
Assess patients' position and comfort	Make sure call bell is within reach

### **Nursing round times**

**Morning shift:** 0830, 1100 & 1330

**Afternoon shift:** 1600, 1800 & 2000

**Night shift:** 2300, 0200, 0400 & 0600

### **Hand-over**

Either the SC or a team member from each team delegated by the SC is responsible for updating and ensuring computer hand-over sheet is current as per ISOFT format for all patients.

**Night to morning shift:** SC hand-over to SC. Remaining two night staff handover to each team.

**Morning to afternoon shift:** SC hand-over to SC. Team leader from morning staff hand over to afternoon team during 1400 nursing round.

**Afternoon to night shift:** SC hand-over to all night staff.

Hand-over to consist of patients' name and changes in patients' condition using DAR format (all other information is provided on ISOFT printed sheet).

Agency/casual staff to hand-over to team leader prior to completing shift.

**Documentation** for integrated medical record to consist of focus charting for patient centred problem using the DAR format. General record can consist of "Patient care provided as per nursing care plan" provided care plan is up to date and staff record care plan after specific care requirements administered.

Team leader will determine who is doing which patient's medications and notes

### **Spreading workload across morning and afternoon shifts.**

Team leaders will determine any patient care requirements that can be undertaken in the afternoon.

#### **Tea & meal breaks:**

**Team leader** to determine tea breaks for nursing and morning PCA staff ensuring patients continue to be cared for.

**Morning shift: Tea breaks 15 minutes:** between 0930hrs & 1030hrs, SC at their discretion.

**Lunch breaks 30 minutes:** between 1200 and 1400hrs. SC at their discretion.

**Afternoon shift: Tea breaks 15 minutes:** between 1430 -1530

**Meal breaks 30 minutes:** between 1700hrs & 1900hrs. SC at their discretion.

## APPENDIX G

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### ***SURGICAL DIVISION WARD EXAMPLE OF SCM GUIDELINE***

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#### **Principles of shared care model**

Enables a learning culture

Supports staff

Provision of patient centred care

Experienced nurse is paired with less experienced nurse

Shift coordinator (SC) for am and pm shift is patient free

Staff development nurse is patient free

Regular nursing care rounds

Routine checking of all charts

#### **Paired combinations**

Experienced RN & RN graduate

Experienced RN & EN graduate

Experienced ASEN & EN graduate

Experienced ASEN & RN graduate

RN graduate & RN graduate of different rotations

If inexperienced casual and agency staffs are paired with either an experienced RN or EN who is working a full shift.

If experienced casual and agency staffs are paired with either a less experienced RN or EN who is working a full shift.

When pairs consist of 2 inexperienced staff then SC or SDN is responsible for assisting them prioritise care requirements.

#### **Staff to patient allocation**

Roster pattern of 9/9/6 during Monday to Friday and 9/9/5 at the weekend is unchanged.

Morning and afternoon shifts nurses will be paired to work together and be collectively responsible for allocated patients.

SC on both shifts does not take any patients.

#### **Role of experienced nurse when paired with less experienced nurse:**

- Role model
- Provides supervision & education
- Prioritise patient care requirements
- Works together and supports one another to provide patient care requirements
- Shares documentation & hand-over responsibilities

#### **Medical rounds**

In both the morning and afternoon shifts if SC unable to participate in medical rounds then one of each pair participates in medical rounds for their allocated patients. If this is not possible one of each pair asks the medical staff to inform them of patient changes prior to them leaving their rooms.

### **Nursing Rounds**

Assess patient's pain level and administer prescribed analgesic

Undertake vital signs if required

Offer toileting assistance

Assist patients' with their position and comfort

Attend to pressure area care as required

Make sure call bell is within reach

Put the bedside table next to bed or chair as applicable

Ask the patient if there is anything else they would like you to attend to prior to leaving the room

Let the patient know when you will be back in the room

### **Nursing round times**

**Morning shift:** None.

**Afternoon shift:** 1600 & 1930

**Night shift:** 2200, 0200 & 0600 (To be confirmed)

### **Hand-over**

**Morning shift:** Night SC prepares a taped handover for morning SC and deputy SC.

All other staff receive handover in pairs from night staff.

**Afternoon shift:** Morning SC hands over all patients to afternoon SC and deputy. All other staff receive handover at the bedside in pairs from the morning staff.

Handover to include checking charts, documentation, intravenous infusions, patient controlled analgesic pump settings, and oxygen and suction. During handover time management sheet is completed by one of the paired nurses.

**Night shift:** Afternoon SC prepares a taped handover of all patients for all night staff to listen to.

### **Tea & meal breaks:**

**Each nurse within the pair is required to attend breaks separately so that patients continue to be cared for.**

**Morning shift: Tea breaks:** between 0900 to 1000. SC at their discretion.

**Lunch breaks:** between 1200 to 1300. SC at their discretion. At 1245 agency/casual staff to hand-over to partner. Nurse paired with agency or casual staff to go to lunch at 12MD.

**Afternoon shift: Tea break:** 1445.

**Meal break:** between 1700 to 1800. SC at their discretion.

## APPENDIX H

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### **MEDICAL DIVISION'S WARD EXAMPLE OF SCM SHIFT APPLICATION**

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#### **Morning shift**

**0700 to 0720** hand-over all staff

**Team leader** nurse determines if specific priority care is required prior to commencing first nursing round. **Team leader** updates white board to indicate short shifts and in-service.

**At 0730 commence first nursing round**

**West wing team leader** determines how the team of 3 will work together. To begin with 2 nurses are paired to commence observations & medications, empty catheter bags, check IV fluids, & oxygen & suction equipment. The remaining nurse pairs with PCA to get patients out of bed, assists with toileting, preparation for breakfast and also assists with bed making & providing linen for self-caring patients. The team leader will then delegate other nursing duties such as IV AB.

**East wing each team leader** determines how the pair will work together to undertake observations, medications, empty catheter bags check IV fluids, & oxygen & suction equipment and get patients out of bed, assist with toileting and preparation for breakfast. The team leader arranges for PCA to assist as required.

During the **0730** nursing round the paired nurses review patient care plans to determine patient care requirements.

The team leader in a supportive and educational manner guides the prioritisation of all patient care requirements.

Together the team work out their care plan for the shift. The team then concentrate on the provision of care requirements by undertaking these together as much as is practicable. Priority to be given to: wet dressings, QID dressings & getting patients prepared for procedures.

**Prior to morning tea** commence second nursing round at **0900**.

Each team member arranges to go to tea separately between **0915 & 10am**. While each other is at tea the remaining partner (s) ensures all bells are answered and continues with patient care requirements.

Should remaining nurse (s) be unable to answer bells then other staff are to ensure call bell is promptly answered.

**Following morning tea** nursing care to be focused on undertaking priority care as per management plan. The team together attend to patients' hygiene & toileting needs such as bed baths, bedpans, & assisting to the toilet.

Where practicable and as a learning opportunity 2 nurses undertake various procedures together such as complex dressings, catheterisation, patient assessment such as admission process, discharge planning, physical, cognitive, functional, integrated assessment score and Braden score. Two nurses also together administer & check medications such as insulin, blood products, intravenous infusions, & schedule 8 drugs.

**Between 1130 and 12MD** each team member updates taped handover and hand over to shift coordinator using any of the following options:

- Team leader, in presence of less experienced partner

- Less experienced partner, in presence of team leader

**Prior to lunch** undertake a nursing round at **1145**.

At **12MD** one nurse goes to lunch. If working with agency/casual must lunch at 12MD.

At **1230** nurse goes to second lunch.

### **Morning Shift continued**

**1245** agency nurse hand-over to partner.

At **1245** remaining team member (s) undertake nursing round and assist patient into bed with assistance from PCA & completes FBC.

At **1300** remaining nurse goes to lunch.

**SC** to ensure all admissions are entered onto ISOFT.

Hand-over for afternoon staff **1300**.

At **1330** the team check all charts and ensures documentation is current & medications are available for next shift.

Attend education sessions as directed at **1400**.

**1400** attend education sessions as directed.

### **Afternoon shift**

At **1400** both nurses undertake nursing round. During round check all medication charts and FBC.

When nurses within each pair are starting **1400 or 1500** the nurse who started at **1300** to commence time management plan and check medication & FBC.

Ensure any night medications have been charted and medications are available for night staff.

At **1430** afternoon staff goes to tea. If required morning staff continue nursing round. The team then concentrate on the provision of care requirements by undertaking these together as much as is practicable

Team leader determines which time each nurse within the team go to dinner between **1700 and 1800**.

At **1930** the team undertakes extended nursing round to complete all patient care requirements prior to night staff commencing.

At **2100** final round to ensure all care given and medication and FBC completed.

**SC** to ensure all admissions are entered onto ISOFT.

**Documentation** to consist of charting by exception & contemporary care plan charting.

Each member of the pair to check each other charts.

Complete hand-over by one person providing tape update and the other verbal update to SC.

## APPENDIX I

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### **REHABILITATION/ORTHOPAEDIC WARD EXAMPLE OF SCM SHIFT APPLICATION**

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#### **Morning shift**

**0700 SC** checks team allocation.

**0700 night SC** night hand-over to AM SC, another night staff hand-over to team responsible for patients in rooms K to Q while another hand-over to team responsible for patients in rooms A to J. Day staff receive updated time management plans from night staff.

**0700 Nurse** assigned to special a patient assists night staff complete bowel management, patients hygiene and prepare patient for breakfast.

**0730 Team leaders** further divide teams into pairs to work together and allocates which nurse will be responsible for administering patients medications and writing patients notes. Team leader then determine if specific priority care and if a time management tool should be completed.

**0830 undertake first nursing round.** During this nursing round the teamed nurses review patient care plans & update time management plan for patient care requirements. The team leader in a supportive and educational manner guides the prioritisation of all patient care requirements.

**Each team** then concentrate on the provision of care requirements by undertaking these together as much as is practicable. Priority is given to, getting patients ready for physiotherapy & occupational therapy by 1000hrs, administering general nursing care, bowel and bladder management, administering medication, recording observations and wound management.

#### **1100 undertake a nursing round**

**Team leader** determines which time each nurse within the team go to morning tea between **0930 & 1030**, ensuring patient care continues to be covered.

While each team member is at tea the remaining nurse (s) ensures all bells are answered and continues with patient care requirements.

Should remaining nurse(s) be unable to answer bells then staff from the other team are to ensure call bells are promptly answered.

**Following morning tea** nursing care to be focused on undertaking priority care as per management plan. **Where practicable and as a learning opportunity 2 nurses undertake various procedures together such as** nurse therapies, rehabilitation programme coordinator duties, case patient assessment & continence management, patient turns, cognitive, functional & falls risk assessment, Braden score, checking of medications, discharge planning and complex dressings.

**1130 SC** provides update to and receives updates from team leaders for hand-over.

**1145 - 1200** either the **SC** or one of the team member delegated by the **SC** enters changes into ISOFT for hand-over

**Between 1145 and 1215** assist patients with lunch as required.

Team leader arranges for nursing and PCA staff to go lunch between **1200 to 1400**.

**Prior to end of shift** agency/casual nurse hand-over to **team leader** and checks all charts with a nursing team member.

**Prior to afternoon shift commencing** team leader updates patient requirements on the time management plan in preparation for afternoon staff.

## Appendix I: Rehabilitation/Orthopaedic SCM Application

<b>Nursing Rounds: 0830; 1100, &amp; 1330</b>	
Provide continence care Check & record fluid balance. Offer restricted fluids Undertake leg measures as required Replace TED stockings & wash legs as required Assess patients pain level & administer prescribed analgesic as required Undertake observations as required Assess patients' position and comfort	Check and update all charts Attend to pressure area care as required Put the bedside table next to bed or chair as applicable Ask the patient if there is anything else they would like you to attend to prior to leaving the room Let the patient know when you will be back in the room Make sure call bell is within reach

### **Afternoon shift**

SC checks team allocation.

**Staff commencing at 1300 report to team leaders of each team to determine where assistance is required. Priority is to be given to assisting with 1330 nursing round, 1400 medications and getting patients ready for 1400 physiotherapy and occupational therapies.**

**1330-1400 morning staff** completes documentation.

**1330 Hand-over & Nursing round:** SC to SC hand-over all patients. Staff in each team collects ISOFT hand-over sheet and while undertaking nursing round receives hand over from morning team leader. Available morning staff also assists with 1400 nursing round. Hand-over to include checking of all charts.

**During 1330 nursing round,** the afternoon staff review patient care plans to determine patient care requirements and complete time management care plan for the shift. The team leader in a supportive and educational manner guides the prioritisation of all patient care requirements.

**1430 –1530 Team leaders** allocate afternoon tea breaks.

#### **1600 Nursing round**

Following the nursing round each team concentrate on the provision of care requirements by undertaking these together as much as is practicable. Priority to be given to bowel & bladder management, complex dressings and general nursing care.

**1645** assist patients with evening meal as required.

**Team leader** determines which time each nurse within the team go to dinner between **1700 and 1900.**

SC determines time PCA goes to tea.

#### **1800 Nursing round**

**1945 SC** provides update to and receives updates from **team leaders** for hand-over.

**2000 Nursing round** During this round all charts are checked.

**2030** either the SC or a team member delegated by the SC enters changes into ISOFT for hand-over

**Prior to night shift commencing** team leader updates patient requirements on the time management plan in preparation for night staff.

**2100** staff complete nursing documentation

**2100 Hand-over:** SC to all night staff

## Appendix I: Rehabilitation/Orthopaedic SCM Application

<b>Nursing Rounds, 1330, 1600, 1800 &amp;</b>	<b>2000</b>
Provide continence care Check & record fluid balance Offer restricted fluids Undertake leg measures as required Replace TED stockings & wash legs as required Assess patients pain level & administer prescribed analgesic as required Undertake observations as required Assess patients' position and comfort	Check and update all charts Attend to pressure area care as required Put the bedside table next to bed or chair as applicable Ask the patient if there is anything else they would like you to attend to prior to leaving the room Let the patient know when you will be back in the room Make sure call bell is within reach

## APPENDIX J

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### ***SURGICAL DIVISION WARD EXAMPLE OF SCM SHIFT APPLICATION***

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#### **Morning shift**

**0700** SC allocates an experienced nurse to work with a less experienced nurse.

**0700 to 0720** Night SC prepares a taped handover for morning SC and deputy SC.

All other staff receive handover in pairs from night staff outside patients room.

**0720** Following handover experienced nurse determines if specific priority care is required prior to planning patient care.

While checking patients and oxygen and suction paired nurses check patient care plans and review patient care requirements. Experienced nurse in a supportive and educational manner guides the prioritisation of all patient care requirements. Team determine who will be responsible for participating in medical rounds. Together both nurses work out their care plan for the shift using a time management sheet. Both nurses then concentrate on the provision of care requirements by undertaking these together as much as is practicable.

Nursing care to be focused on preoperative preparation, postoperative management, assisting patients with toilet and hygiene needs, feeding as required, wound management, discharge planning and preparation for discharge.

**0900** one nurse goes to tea and the other at **0930**, while each other is at tea the remaining partner ensures all bells are answered and continues with patient care requirements.

**1130-1200** SC approaches all staff for patient updates.

**12MD** one nurse goes to lunch. If working with agency or casual nurse permanent staff member goes to lunch at 1200.

**1245** after completing care plans and patient notes agency nurse handovers to partner

**1230** remaining nurse goes to lunch. SC goes at their discretion

**1300** Morning SC hands over all patients to afternoon SC and deputy. Paired morning staff handover to paired afternoon staff at the bedside. Handover to include checking charts, documentation, intravenous infusions, patient controlled analgesic pump settings, and oxygen and suction. During handover time management sheet is completed by one of the paired nurses.

**1330 to 1400** both nurses complete all documentation

**1400** attend education sessions as directed.

#### **Afternoon shift**

**1300** SC allocates an experienced nurse to work with a less experienced nurse.

**1300 to 1320** Morning SC hands over all patients to afternoon SC and deputy.

Morning paired nurses handover to afternoon paired nurses at the bedside.

Handover to include checking charts, documentation, intravenous infusions, patient controlled analgesic pump settings, and oxygen and suction. During handover time management sheet is completed by one of the paired nurses.

**1320** Following handover experienced nurse determines if specific priority care is required prior to planning patient care.

Experienced nurse in a supportive and educational manner guides the prioritisation of all patient care requirements. Team determine who will be responsible for participating in medical rounds.

**1400** attend education sessions as directed.

**1430** afternoon staff goes to tea break.

**1500** both nurses then concentrate on the provision of care requirements by undertaking these together as much as is practicable. Nursing care to be focused on postoperative management, wound care, discharge planning and preparation.

**1600 paired nurses undertake a nursing round**

**1700** one of each pair goes to dinner.

**1730** remaining staff goes to dinner SC goes at their discretion.

**1930 paired nurses undertake a nursing round**

Ensure any night medications have been charted and medications are available for night staff.

**2030** Provide update of patient changes to SC.

**2045** Complete nursing documentation and check charts among pairs

## APPENDIX K

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**STAFF QUESTIONNAIRE PRE SCM IMPLEMENTATION**


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**Ward (insert ward) Model of Care and Staff Satisfaction Survey**

As part of the model of care work on ward (insert relevant wards) it is important there are meaningful evaluation measures for the current model so that they can be measured against the revised or new model of nursing care after a period of implementation. I am therefore seeking your participation to complete this survey, as your responses are an essential evaluation measure.

**Directions:** Your responses are confidential so please **do not write your name on the survey**. Please use a pen. For each statement mark the square that best represents your feelings. An area is provided after each section for any comments that you wish to make.

<b>Model of nursing care (MONC)</b>	<b>Strongly Disagree</b>	<b>Tend to Disagree</b>	<b>Tend to Agree</b>	<b>Strongly Agree</b>	<b>No opinion</b>
Tick the MONC used on ward ( <b>insert ward</b> ): <input type="checkbox"/> Patient allocation <input type="checkbox"/> Primary nursing <input type="checkbox"/> Team nursing <input type="checkbox"/> Other, please name:					
Overall, I am satisfied with the current MONC used on ward ( <b>insert ward</b> )	<input type="checkbox"/>				
The MONC ensures manageable workloads	<input type="checkbox"/>				
The MONC enables nursing care to be patient centred	<input type="checkbox"/>				
The MONC promotes a team approach to the provision of nursing care	<input type="checkbox"/>				
The MONC emphasis the provision of quality care	<input type="checkbox"/>				
Patients are treated with respect and dignity	<input type="checkbox"/>				
<b>Comments:</b>					
<b>Staff support</b>					
There is a culture of support for one another among nursing staff on ward ( <b>insert ward</b> )	<input type="checkbox"/>				
Nursing staff go out of their way to help and support each other	<input type="checkbox"/>				
Senior staff emphasise the importance of supporting one another	<input type="checkbox"/>				
There are good communication processes for me to receive constructive feedback	<input type="checkbox"/>				
I feel valued	<input type="checkbox"/>				
Staff treat one another with dignity and respect	<input type="checkbox"/>				
I am satisfied with the manner in which my supervisor handles complaints, grievances and problems	<input type="checkbox"/>				
<b>Comments:</b>					
<b>Recognition</b>					
Excellent performance is recognised on ward ( <b>insert ward</b> )	<input type="checkbox"/>				
Senior staff recognise my ideas or suggestions for improvement	<input type="checkbox"/>				
Senior staff encourage me to find better ways of doing things	<input type="checkbox"/>				
Promotions are handled fairly here	<input type="checkbox"/>				
The current performance appraisal system is fair	<input type="checkbox"/>				
I am satisfied with how my supervisor conducts my performance agreement	<input type="checkbox"/>				
My performance appraisals are usually done on time	<input type="checkbox"/>				

Appendix K: Staff Questionnaire Pre SCM

<b>Comments:</b>					
<b>Training / Education</b>					
I was satisfied with the orientation I received when I started on ward ( <b>insert ward</b> )	<input type="checkbox"/>				
I receive the training I need to perform my duties	<input type="checkbox"/>				
The preceptorship program works well	<input type="checkbox"/>				
Staff are encouraged to maintain competencies	<input type="checkbox"/>				
There is a good learning culture on ward ( <b>insert ward</b> )	<input type="checkbox"/>				
Staff work within their scope of practice	<input type="checkbox"/>				
Staff follow nursing practice standards	<input type="checkbox"/>				
There is good supervision to help me when required	<input type="checkbox"/>				
<b>Comments:</b>					
<b>Work Environment</b>					
I have the equipment I need to do my job well	<input type="checkbox"/>				
The physical conditions (light, heat space, appearance) in my work area are good	<input type="checkbox"/>				
The equipment I use is well maintained	<input type="checkbox"/>				
My work area is clean	<input type="checkbox"/>				
My work area is safe for staff and patients	<input type="checkbox"/>				
<b>Comments:</b>					
<b>Image</b>					
	<b>Strongly Disagree</b>	<b>Tend to Disagree</b>	<b>Tend to Agree</b>	<b>Strongly Agree</b>	<b>No opinion</b>
The overall quality of care on ward ( <b>insert ward</b> ) is excellent	<input type="checkbox"/>				
There are very high standards for performance here	<input type="checkbox"/>				
I would recommend ward ( <b>insert ward</b> ) to a friend as a good place to work	<input type="checkbox"/>				
Staff want to come and work here	<input type="checkbox"/>				
<b>Comments:</b>					
<b>Teamwork/Co-workers</b>					
There is good communication among the health care team	<input type="checkbox"/>				
Patients & their families are kept informed of patients progress	<input type="checkbox"/>				
Patient care by the health care team is timely	<input type="checkbox"/>				
There is good coordination of effort among the health care team	<input type="checkbox"/>				
When a problem needs solving, members of the health care team usually work together	<input type="checkbox"/>				
Discharge planning is well organised	<input type="checkbox"/>				
<b>Comments:</b>					
<b>Staffing</b>					
Ward ( <b>insert ward</b> ) has enough staff to provide quality care	<input type="checkbox"/>				
There is adequate staffing on wards ( <b>insert ward</b> )	<input type="checkbox"/>				

Appendix K: Staff Questionnaire Pre SCM

The amount of work I have to do is reasonable	<input type="checkbox"/>				
Staffing arrangements have not lowered performance in wards <b>(insert ward)</b>	<input type="checkbox"/>				
The reasons for the current staffing pattern on ward <b>(insert ward)</b> has been explained clearly to me	<input type="checkbox"/>				
The rostering is fair on ward <b>(insert ward)</b>	<input type="checkbox"/>				
<b>Comments:</b>					
<b>Participation</b>					
I have opportunities to influence policies and decisions that affect my work	<input type="checkbox"/>				
I am satisfied with my involvement in decision making	<input type="checkbox"/>				
<b>Comments:</b>					

<b>Demographics:</b>		
How long have you been working on ward <b>(insert ward)</b> .....	Male Female  Age : .....years	Length of time employed at RPH this episode .....years.  Have you been employed at RPH previously? YES / NO  Length of time employed in nursing: .....years
Which of the following best describes you? <input type="checkbox"/> Full time <input type="checkbox"/> Part time		
Which of the following best describes you? First year graduate Registered Nurse EN Other (please describe)		
Do you intend to leave ward <b>(insert ward)</b> in the next 12 months? YES / NO <input type="checkbox"/> Retiring <input type="checkbox"/> Resigning	If resigning, please list reason: <input type="checkbox"/> Travel <input type="checkbox"/> Family <input type="checkbox"/> New Career <input type="checkbox"/> Other:	

Please place your questionnaire in the box on ward **(insert ward)** located in the nurse's station by **(insert date)**

**THANK YOU FOR YOUR PARTICIPATION**  
**Heather Kidd**  
**Nursing Director**

**Should you have any concerns you wish to discuss regarding how this study is conducted please contact:**  
**Associate Professor Gavin Leslie, Chairperson RPH Nursing Research Review Committee 9224 8081.**

## APPENDIX L

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### **DEVELOPMENT OF STAFF QUESTIONNAIRE**

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The staff questionnaire was developed during the pilot study based on responses by 43 staff in facilitated reflective practice sessions. These sessions involved asking staff four questions: What is at the heart of your practice? If you were a new nurse what would you want to be assured of? If you were a patient on this ward what would you want to be assured of? and If you had a loved one being cared for, what would you want to be assured of? Discussion occurred around the extent to which staff responses to heart of practice and what a new nurse wanted to be assured actually occurred. Table one shows staff responses and extent to which they believed they occurred for the heart of practice and what as a new nurse they wanted to be assured of questions.

The nursing staff were then asked during the week, to observe their ward with their answers to the patient questions in mind and see to what extent the existing ways of working supported their wishes. Table 2 and 3 show the responses to each of the patient questions and the staff findings following their observation. From these responses and in discussion with the nursing staff four themes emerged: nursing care, patient, environment and staff and these themes were used to select questions from the hospital's Nursing Satisfaction Survey which in turn consists of questions from the Employee Perspective Survey Tool. In addition, specific questions relating to the model of care was added in order to evaluate changes associated with the SCM.

Table 1 Nursing staff responses to "heart of practice" and 'as a new nurse what they wanted to be assured of' questions

<b>What is at the heart of your practice?</b>	<b>If you were a new nurse what would you want to be assured off?</b>
<ul style="list-style-type: none"> <li>• Provide quality care for patients</li> <li>• Get on well with colleagues</li> <li>• Respecting patient wishes/making sure they are fully informed</li> <li>• Do my best in whatever I do</li> <li>• Good communication with team and patients, staff members</li> <li>• Patient comfort/ensure patients have what they need</li> <li>• Patients happy with care</li> <li>• Highest level of care, making sure the little things are done like washing a patient's hair</li> <li>• Patient dignity</li> <li>• Educated staff/happy staff</li> <li>• Support for nurses so that they feel protected</li> </ul>	<ul style="list-style-type: none"> <li>• Support: clinical and emotional</li> <li>• Made to feel welcome: (to be shown where to put handbag &amp; to be shown the toilets/ tea room</li> <li>• Getting to know staff including PCAs &amp; ward clerk</li> <li>• Good communication</li> <li>• To know no question asked is a silly question</li> <li>• Friendly faces</li> <li>• Respect for one another</li> <li>• For staff to introduce themselves and to ask if you are okay</li> <li>• To be in a safe environment so that you feel secure</li> <li>• Learning opportunities</li> <li>• Be educated and to expand knowledge</li> </ul>

<b>What is at the heart of your practice?</b>	<b>If you were a new nurse what would you want to be assured off?</b>
<ul style="list-style-type: none"> <li>• Provide honest and professional care to patients to meet their needs.</li> <li>• Patient is happy and better at the end of the day</li> <li>• Look after staff so that they can look after the patients</li> <li>• Understand what patients and relatives are going through</li> <li>• Be a patient advocate</li> <li>• Patient education</li> <li>• To make a difference to patient and families and educate both staff and patients in order to provide good care.</li> <li>• Teamwork</li> </ul>	<ul style="list-style-type: none"> <li>• Know who to ask questions for specific types of information.</li> <li>• Ward routine.</li> <li>• Staff expectations regarding ward routines.</li> <li>• Ward specific procedure &amp; protocols</li> <li>• Know people you can go to for specific help and they have time to help.</li> <li>• To be accepted as a team member.</li> <li>• To be informed of the different nursing roles and who is responsible for what.</li> <li>• To be given a realistic workload and be helped if struggling</li> <li>• Mentoring and the provision of regular feedback</li> </ul>
<p><b>Extent these occurred</b> Nursing staff agreed they endeavoured to achieve these but felt due to busy workloads, inadequate staffing they weren't always able to.</p>	<p><b>Extent these occurred</b> Nursing staff commented they were achieved to some extent but not completely.</p>

Table 2 Nursing staff responses to patient care and what the care they observed

<b>If I were a patient in wards XX, what would I want to be assured of?</b>	<b>Staff responses to observing if their answers to the question: If I were a patient in wards XX, what would I want to be assured of? occurred.</b>
<ul style="list-style-type: none"> <li>• Safe care</li> <li>• Explanation about everything</li> <li>• Doctors coming to see patients</li> <li>• Respect</li> <li>• Privacy</li> <li>• Dignity</li> <li>• Comfort</li> <li>• Care carried out as ordered</li> <li>• Basic needs cared for: feeding/toilet hygiene</li> <li>• Communication: <ul style="list-style-type: none"> <li>• with nurses &amp; staff and be informed about treatment</li> <li>• family involved, be told what's going on</li> <li>• continuity of care</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Doctors don't see patients on LAD or over the weekend of an LAD. Registrar is on until 1pm LAD</li> <li>• Most of these happen most of the time</li> <li>• Majority are met but difficult when new graduates start as they don't have the experience to look after patients &amp; often there are 3 graduates on each day shift, so staff get stressed, things get done late &amp; mistakes are made.</li> <li>• Observed what colleagues were doing</li> <li>• Discharge planning doesn't get done very well</li> <li>• Poor planning/lack of communication by doctors to nursing staff</li> </ul>

<p><b>If I were a patient in wards XX, what would I want to be assured of?</b></p>	<p><b>Staff responses to observing if their answers to the question: If I were a patient in wards XX, what would I want to be assured of? occurred.</b></p>
<ul style="list-style-type: none"> <li>• dependants at home are being looked after</li> <li>• Listen to family to see patient needs</li> <li>• Caring &amp; understanding staff</li> <li>• Family and relatives feel welcomed</li> <li>• Quiet staff</li> <li>• Gentle care</li> <li>• Comfortable bed/mattress/ linen</li> <li>• Pressure area care</li> <li>• Respect for patient's culture &amp; religion</li> <li>• Timely treatment: planned &amp; not cancelled</li> <li>• Correct treatment</li> <li>• Going home</li> <li>• Quiet environment to rest in</li> <li>• Respect for dying patient needs &amp; family</li> <li>• Highest standard of care</li> <li>• Confidentiality</li> <li>• Clean ward</li> <li>• Skilled &amp; competent nurses</li> <li>• Pain-free</li> <li>• Discharge plan</li> <li>• Working equipment</li> <li>• Edible food</li> <li>• Adequate diet &amp; fluids</li> <li>• To be involved in my care</li> <li>• To feel at home: home away from home</li> <li>• Empathetic staff</li> <li>• Individualised care with multidisciplinary approach</li> <li>• Friendly welcoming staff who introduce themselves to patients</li> </ul>	<ul style="list-style-type: none"> <li>• Social worker giving patient &amp; family information about discharge time without first checking or communicating with staff</li> <li>• No control over edible food</li> <li>• Food not available for patient with special diet requirements eg diabetic</li> <li>• Storeroom needs to be locked as things keep going missing.</li> <li>• There isn't a quiet environment, staff such as Drs &amp; allied health want to see patients during rest time</li> <li>• Patient non-compliance with pressure area care</li> <li>• More staff are filling out forms to repair equipment</li> <li>• Family not involved by medical staff &amp; nurses have to sort things out &amp; bare front of families</li> <li>• Hard to sort out clinical issues as nurses following doctors orders</li> <li>• Doctors from the same team have different opinions</li> <li>• On a good day all of this happens</li> <li>• On a not so good day when we are very busy such as when one or more patients require intensive attention, and other factors such as doctors taking down dressing after it has been done its hard to provide these things</li> <li>• Privacy &amp; dignity don't happen due to geography of ward eg toileting on a ward behind a screen, information about patients shared /overheard by all patients in the same room.</li> <li>• Hard to make family &amp; relatives feel welcome when there are so many of them at times</li> <li>• Patients needs are not met, eg patient not shaved for days</li> <li>• External factors such as admissions at difficult times of the day</li> <li>• Difficult to catch up with work after a busy period</li> </ul>

<p><b>If I were a patient in wards XX, what would I want to be assured of?</b></p>	<p><b>Staff responses to observing if their answers to the question: If I were a patient in wards XX, what would I want to be assured of? occurred.</b></p>
	<ul style="list-style-type: none"> <li>• There is not a quiet environment to rest in, it's always noisy, staff, patients' activities</li> <li>• Difference in standard of care between hospital &amp; university trained nurses</li> <li>• Patients' families should bring in toiletries</li> <li>• New falls form <ul style="list-style-type: none"> <li>• so safety should be improved</li> <li>• spending time filling in more forms and away from the patient</li> </ul> </li> <li>• Strive for a lot of these but not always available</li> <li>• Doctors arrive on ward at different times last on DGM list so see pts later in the day, patient &amp; families get anxious</li> <li>• Noisy environment hard to be quiet</li> <li>• Discharge planning poor always last minute</li> <li>• Restraints should be implemented without Drs orders to reduce number of falls.</li> <li>• Family members of patients identified as being high risk should be given an information booklet explaining use of restraint is to prevent falls.</li> <li>• Try our best but don't meet every aspect.</li> <li>• Pressure area care isn't good as often busy looking after other patients &amp; PAC is secondary.</li> <li>• Rest period should be enforced unless special circumstances eg dying patient. Should have a permanent sign at reception informing staff &amp; families about the rest period.</li> <li>• Maximum of 3 visitors should be enforced</li> </ul>

Table 3 Nursing staff response to care of their loved one and their observations of patient care

If I had a loved one being cared for in wards XX, what would I want to be assured of?	Staff responses to observing if their answers to the question: If I had a loved one being cared for in wards XX, what would I want to be assured of? occurred.
<ul style="list-style-type: none"> <li>• Right diagnosis and treatment</li> <li>• Included in the loop</li> <li>• Let me know what's going on before it happens</li> <li>• Right in decision making</li> <li>• Everything as listed in question relating to myself being a patient on wards XX</li> <li>• Freedom of speech without repercussion</li> <li>• Pain management is appropriate</li> <li>• Right discharge planning:               <ul style="list-style-type: none"> <li>• involved &amp; informed</li> <li>• involvement from appropriate allied health staff</li> <li>• assessment of physical, emotional, mental needs while in hospital</li> <li>• discharged to wherever when proper planning is completed</li> </ul> </li> <li>• Right to die &amp; involvement of palliative care team</li> <li>• To be cared for by happy staff</li> <li>• Protection from hospital acquired illness/injury</li> <li>• Treated well by staff</li> <li>• Be kept informed of progress/procedures/treatment</li> <li>• Good diet/nutrition</li> <li>• Needs are met</li> <li>• Compassion/caring</li> <li>• Named nurse</li> <li>• Inexpensive TV &amp; phone</li> <li>• Ability to contact loved one</li> <li>• Safety: personal &amp; belongings</li> <li>• Individualised care</li> <li>• Opportunity to rest</li> <li>• Consulted about treatment, if appropriate</li> <li>• Opportunity to get some fresh air &amp; change of environment</li> <li>• Nurses act as patient advocate</li> <li>• Seek advice from junior to senior nurse</li> <li>• Family involved with care eg at meal times, sit with patient, to be established</li> </ul>	<ul style="list-style-type: none"> <li>• Communication with food supervisors problems as reported changes in patients diet are not occurring</li> <li>• Don't have time to take patients down stairs as patients need an escort</li> <li>• Family leaves when meal comes instead of staying to help</li> <li>• TV should be free for all patients</li> <li>• Not realistic to establish home routine in hospital</li> <li>• The other listed things are well done</li> <li>• Good to get patient feedback about issues/complaints while they are in hospital</li> <li>• Relatives may not inform staff about complaints, as they are concerned about any repercussions</li> <li>• Relatives on the whole are thrilled with care as shown by number of chocolates, cakes &amp; thank you cards.</li> <li>• Some relatives get a telly for patients to do something constructive</li> <li>• Mentality is that everything has to be done in the morning</li> <li>• Food is not so bad</li> <li>• Patients are not included in decision making until after the decision is made and then they are informed</li> <li>• Transit lounge should be used more</li> <li>• Need to raise the issue of NFR before major intervention occurs</li> <li>• Need to have respect for patient &amp; family wishes regarding management</li> <li>• A lot depends on the personality of the patients and families as to how the nurses will look after them</li> <li>• No fresh air</li> <li>• Need to name two nurses eg have 2 nurses looking after 8 patients sharing the work.</li> <li>• Patients often don't get any visitors</li> </ul>

<p><b>If I had a loved one being cared for in wards XX, what would I want to be assured of?</b></p>	<p><b>Staff responses to observing if their answers to the question: If I had a loved one being cared for in wards XX, what would I want to be assured of? occurred.</b></p>
<p>at admission or as patient condition changes</p> <ul style="list-style-type: none"> <li>• Special preferences such as diet, likes &amp; dislikes</li> <li>• Create a routine similar to at home eg shower second daily, or in the pm</li> <li>• More involvement with OT</li> </ul>	<ul style="list-style-type: none"> <li>• Patients' relatives not willing to help with patients ADL due to their complexity eg need to use a hoist</li> <li>• Rest hour should be protected</li> <li>• Should have kept room C for gym now have to go to X &amp; it doesn't happen</li> <li>• Discharge planning not done well, medical staff don't inform nursing staff of patient changes</li> <li>• Patients not suitable for transit lounge, provide sandwiches only</li> <li>• ED don't provide full hand-over eg patients arrive on ward needing a guard &amp; staff haven't been informed or patient not suitable for ward eg heart transplant patient presented with a headache &amp; sent to ward with MRSA &amp; number of carded patients.</li> </ul>

## APPENDIX M

### STAFF QUESTIONNAIRE 3 MONTHS POST SCM IMPLEMENTATION

#### Model of Care Staff Satisfaction Survey

It has been 3 months since ward (**insert ward**) implemented their revised or new model of nursing care. You may recall being advised that a staff survey would be repeated at 3 months as part of the evaluation measures. I am therefore seeking your participation to complete this survey. Results will be presented to the ward to assist staff with making further changes to the model of nursing care.

**Directions:** Your responses are confidential so please **do not write your name on the survey**. Please use a pen. For each statement mark the square that best represents your feelings. An area is provided after each section for any comments that you wish to make.

Model of nursing care (MONC)	Strongly Disagree	Tend to Disagree	Tend to Agree	Strongly Agree	No opinion
Please tick the relevant box: The MONC used on ( <b>insert ward</b> ) is : <input type="checkbox"/> Patient allocation <input type="checkbox"/> Primary nursing <input type="checkbox"/> Team nursing <input type="checkbox"/> Shared care model <input type="checkbox"/> Other, please name:					
Overall, I am satisfied with the current MONC used on ( <b>insert ward</b> ).	<input type="checkbox"/>				
The MONC ensures manageable workloads.	<input type="checkbox"/>				
The MONC enables nursing care to be patient centred.	<input type="checkbox"/>				
The MONC promotes a team approach to the provision of nursing care.	<input type="checkbox"/>				
The MONC emphasis the provision of quality care.	<input type="checkbox"/>				
Patients are treated with respect and dignity.	<input type="checkbox"/>				
<b>Comments:</b>					
<b>Staff support</b>					
The shift coordinator pairs an experienced nurse with a less experienced nurse each shift.	<input type="checkbox"/>				
Learning opportunities have increased by pairing an experienced nurse with a less experienced nurse.	<input type="checkbox"/>				
There is a culture of support for one another among nursing staff on wards.	<input type="checkbox"/>				
Work load is more manageable since pairing an experienced nurse with a less experienced nurse.	<input type="checkbox"/>				
<b>Comments:</b>					
<b>Nursing rounds</b>					
The nursing rounds have improved patient nursing care.	<input type="checkbox"/>				
The frequency of the nursing rounds needs to be reduced.	<input type="checkbox"/>				
The nursing rounds should be continued.	<input type="checkbox"/>				
<b>Comments:</b>					
<b>Practice development process used to develop MONC</b>					
The process was transparent.	<input type="checkbox"/>				

Appendix M: Staff Questionnaire 3 Months Post SCM

I had opportunities to participate in the process.	<input type="checkbox"/>				
The process promoted us to work together to address issues associated with the MONC.	<input type="checkbox"/>				
I would recommend this process for addressing other quality improvement initiatives.	<input type="checkbox"/>				
<b>Comments:</b>					

<b>Demographics:</b>		
How long have you been working on ward ( <b>insert ward</b> ) .....	Male Female Age :.....years	Length of time employed at RPH this episode:...years. Have you been employed at RPH previously? Y/N Length of time employed in nursing: .....years
Which of the following best describes you? <input type="checkbox"/> Full time <input type="checkbox"/> Part time		
Which of the following best describes you? First year graduate RN Enrolled Nurse Other		
Do you intend to leave ward ( <b>insert ward</b> ) in the next 12 months? YES / NO <input type="checkbox"/> Retiring <input type="checkbox"/> Resigning	If resigning, list reason: <input type="checkbox"/> Travel <input type="checkbox"/> Family <input type="checkbox"/> New Career <input type="checkbox"/> Other:	

Please place your questionnaire in the box on ward (**insert ward**) located in the staff room by (**insert date**).

**THANKYOU FOR YOUR PARTICIPATION**  
**Heather Kidd**  
**Nursing Director**

Should you have any concerns you wish to discuss regarding how this study is conducted please contact:  
Associate Professor Gavin Leslie, Chairperson RPH Nursing Research Review Committee 9224 8081.

## APPENDIX N

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### ***DEVELOPMENT OF PATIENT QUESTIONNAIRE***

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#### **Background**

As part of the development of the new model of nursing care on the two pilot acute medical and aged care wards, nursing staff were keen to find out patients' expectations of care so that the information could be used to inform the model of care. Given the diverse range of disease co-morbidities and the majority of patients being elderly it was agreed that the information would be best achieved through patient exit interviews.

#### **Exit Interview**

The researcher developed the questionnaire (Appendix B) and interviewed consenting patients on the day of discharge. The exit interviews consisted of a qualitative and quantitative component. Patients were asked to indicate what they considered are important aspects of nursing care that they expected to receive while in hospital and then indicate their level of satisfaction with that care. If the care was not provided or they were not satisfied with the level of care provided they were asked to indicate why they thought this was the case. The questions consisted of a general open question about nursing care, six specific questions relating to physical and emotional needs, treatment, discharge planning, involving family/carer with their progress, and patient information and education and two questions relating to their overall level of satisfaction with all care and nursing care provided. The interview concluded with a question asking patients to make any other comments they wished regarding their hospital stay.

#### **Sample characteristics**

A purposeful sample was used as the aim was to gather information regarding patients' expectations about their nursing care that could be used to inform the model of care. Sixteen patients and one family member were interviewed over a two month period. One patient's information was not included as the interview was not completed due to difficulties in communication between the interviewer and the patient.

The average age was 75 years ranging from 24 to 89 years of age. The average length of stay for patients was 11.5 days ranging from 1 to 52 days. Nine patients interviewed were on one ward and the remaining 6 and a patient's relative on the other ward. Table one shows the reasons for admission to hospital.

Table 1: Reasons for admission

Spontaneous pneumothorax	Acute renal failure
Endocarditis	Exacerbation of COAD
Anaemia for blood replacement	Atrial fibrillation and & hypoglycaemia
RTA	Hypovolaemia and diabetes
Dizziness for investigation	Heart failure and sepsis
Hypotension	Cancer lung
Pleural effusion	Chronic obstructive airways disease and urinary tract infection
Stroke	

Of the 15 patients interviewed, four had initially been admitted to other wards/units: two patients to the intensive care unit, one to the high dependency area and one to another medical ward. For these patients the interviewer asked the patients to comment only on the care provided on the current pilot wards.

### General nursing care question

**What do you consider are the most important aspects of nursing care that you expect to receive while in hospital?**

Box 1 provides a list of patient responses and, if dissatisfied with the care, their explanations why they thought care did not meet their expectations.

Box 1: Patients & family expected care and explanations for these not being met.

Give you the right drugs and not mix you up with another patient

Help me shower and help me manage my dry retching

No expectations take things as they come, to get well

Attend to requests quickly

Toileting, don't want to have to ring the bell to go to the toilet would prefer to unplug my drip and not have to wait for staff

To help me get better and look after me with respect. (Dissatisfied: Some nurses were better than others, but they didn't spend much time with me, maybe they were busy.)

Get the right treatment. If I ring the bell get a quick response. Message given to you if family/friend rings

Nurses should have a nice approach and manner

Good attention- medications to make me better

To be caring

Looking after me

To feel confident in nurses' ability

Get looked after

Look after my care

Courtesy of nurses

**Family member:** To be understanding and give feedback about care. (Dissatisfied: Nobody knows what the hell is happening)

In response to the question how satisfied were you with these aspects of care, seven patients reported they were very satisfied, six were satisfied and two were dissatisfied.

### **Specific Nursing Care questions**

**What do you consider are important aspects of nursing care regarding your physical needs?**

Box 2 provides a list of patient responses and, if dissatisfied with the care, their explanations why they thought care did not meet their expectations.

Box 2: Patients & family expected physical care and explanations for these not being met.

Able to attend own physical needs.

Help me get around. Help me shower.

Stitches in my back after a failed ICC attempt. Nurses should have done an overall examination, as I didn't know I had stitches until I looked in the mirror. Nurses should have known they were in.

Help with getting breakfast. Can't open cereal boxes. In the room by myself all day & I am very lonely. (Dissatisfied response: staff don't realise I need help. When I ask them they don't seem to want to help).

Exercises poor circulation in feet so wriggle toes. Didn't tell nurses, didn't want to complain.

Help me with showering and help me walk into the toilet when I ring the bell.

Keep me comfortable.

Help me with my hygiene and provide good nutritious food.

Help me walk into the shower to stop me falling. Need to use a walking stick but I am frightened of falling.

Look after my catheter, I didn't want to wet the bed.

Hygiene, and pain relief

Help me with showering and shaving

Help me with my hygiene

Nurses walking with me

Help with toileting

**Family member:** Nurses to be conscientious

In response to the question how satisfied were you your physical needs were met, eight patients reported they were very satisfied, six were satisfied and one was very dissatisfied.

**What do you consider are important aspects of nursing care regarding your emotional needs such as your feelings or concerns you may have?**

Box 3 provides a list of patient responses and, if dissatisfied with the care, their explanations why they thought care did not meet their expectations.

Box 3 Patients & family expected emotional care and explanations for these not being met.

Caring nurses

None specific

Met by family

Caring touch

Daughter & sister visit daily. No complaints.

Been lonely. Asked nurses for help but didn't get much. Hate being stuck in this room, no one to talk to, nurses spend hardly any time with me. (**Dissatisfied response:** maybe they don't care)

Like to be able to confide with the nurses

Difficulty being understood

Didn't have any

Nothing in particular

Keep me happy and stop me from worrying

Didn't have any

Supportive & caring

Contact my family

Don't complain

**Family member:** Patient has a speech impairment, so it's frustrating as had difficulty communicating with staff. Patient doesn't know why he has been admitted.

In response to the question how satisfied were you your emotional needs were met, five patients reported they were very satisfied, seven were satisfied and one very dissatisfied.

**What do you consider are important aspects of nursing care regarding your treatment?**

Box 4 provides a list of patient responses and, if dissatisfied with the care, their explanations why they thought care did not meet their expectations.

Box 4 Patients & family expected treatment and explanations for these not being met.

Right medications & make me comfortable

Organise my care and follow Drs instructions

Regularity of things: punctuality, doing things on time. Had dressings which were 3 days overdue being changed. Had several lines get infected, were dressed weekly, nurses should have responded after first infection and done the dressings more regularly.

Help me to get better

Finding out what's wrong with me. Procedures are not very nice but explained very wel.

To look after me and help me get better

Get a response to questions

Make sure everything is done

Make sure I get everything I need so that I get better

Explain what my tablets are for

Treat me with respect. Help me a little bit. Some are better than others. (Dissatisfied: don't know, some nurses are different personalities.

Ensure that everything is done

Seen so many Drs but they are very good

Pain treatment

Help me breathe better

**Family member:** They treat what they can see, it's an ongoing problem.

In response to the question how satisfied were you with the treatment you received, six patients reported they were very satisfied, nine were satisfied and one was dissatisfied.

**What do you consider are important aspects of nursing care regarding discharge planning?**

Box 5 provides a list of patient responses and, if dissatisfied with the care, their explanations why they thought care did not meet their expectations.

Box 5 Patients & family expected discharge planning and explanations for these not being met.

Pills to take home.

Waiting for a specialist so I can get home. Have never seen the medical team leader. Feel like it involves around the doctors and not nurses.

Need help to get to radiation treatment while sister is on holiday. May not be able to go home until the evening. Already have equipment at home.

Concerned about going home as my daughter sometimes has to help her daughter so she will be 2-3 hrs away from me. Waiting all day for medications.

Get told when I will be discharged.

Get everything ready for me to go home.

Told today about CAP. Going into a hostel, won't be returning to my flat. Don't know what's happening. I am very concerned. (reason: maybe they don't know what is going on).

Live alone since my husband died one month ago. Need to get someone to help me with showering at home. Used to have meals on wheels but don't know if these will be continued.

Get me ready to go to Bentley hospital.

No arrangements have been made, lack of communication (reason: don't know).

Arrange support services if I need them, I need to see a chiroprapist.

Sort out home care. Have contacted the social worker myself, as the nurse was busy.

Make sure I have tablets to take home.

Nurses have done everything, have picked up my medication.

Expected staff to arrange all the things I needed to fly home. I didn't expect to have to organise so much myself between RPH Drs, insurance Drs & airline. Had to organise a wheelchair. Staff did arrange for my scans & x-rays to be put onto a CD for me to give to Dr in South Africa and drugs have been arranged. (Dissatisfied: don't know, maybe it's not the hospitals responsibility).

**Family member:** Arrange monitoring for home. Was last in hospital 12 months ago, he will need home care. Been no planning; arrived on ward & told patient may be going home. (Dissatisfied: thought he was going home then he started dry retching so now need to speak with Drs before he can go home).

In response to the question how satisfied were you with your discharge planning, four patients reported they were very satisfied, eight were satisfied, two were dissatisfied and another two were very dissatisfied.

**What do you consider are important aspects of care regarding involving your family/carer with your progress?**

Box 6 provides a list of patient responses and, if dissatisfied with the care, their explanations why they thought care did not meet their expectations.

Box 6 Patients & family expected family/carer involvement and explanations for these not being met.

Family needs to know everything that is going on.

Mums an RN so information passed on to mum. Doctors were vague, nurses fine.

Independent will inform family myself. See daughter & sister daily.

Not serious enough to need to involve family.

Keep my daughter informed with what's happening to me.

Keep my daughter in law (name) informed. I asked the nurses to keep her up to date.

I get my carer to ask the nursing staff so that she knows what's happening. Carer is concerned about my mental health.

Mother included in meetings with medical staff.

Don't have any family. Have a friend but don't expect her to be bothered.

Keep family informed.

Keep my wife informed if I can't.

Keep family informed and contact Dr when required.

Keep me informed about progress.

Keep my daughter informed.

Keep family informed

**Family member:** To know what's going on. Know what to look out for when he is at home (Dissatisfied: needs to be a liaison between hospital, patient & home care).

In response to the question how satisfied were you with how your family were involved in your care, four patients reported they were very satisfied, 11 were satisfied and one was dissatisfied.

**What do you consider are important aspects of nursing care regarding keeping you informed of your progress and providing relevant patient information and education?**

Box 7 provides a list of patient responses and, if dissatisfied with the care, their explanations why they thought care did not meet their expectations.

Box 7 Patients & family expected patient information/education and explanations for these not being met.

Answer questions. Provide diet advice.

Be informed about dressings and infections. To have questions answered.

Knowing what they are going to do.

Want to be informed about my BP & oxygen levels.

Didn't ask for any information

Didn't ask for any information from the nursing staff but the Drs told me what was wrong with me.

Drs give me information. I didn't really understand so asked Drs to clarify. Haven't asked nurses for information.

Simple clear explanation about my diabetes.

Tell me everything that is going on and explain to me & my daughter.

Don't know what to do if same thing happens again, no information given.(reason maybe they don't know what's wrong with me).

Keep informed about progress.

Medications what they are for.

Kept up to date all the time, very well informed.

It's happened to me before so I know what I needed so didn't ask for any information.

I might be old & visually impaired but I am not stupid. The nurse put on this arm band (blue) and I already have one on this arm & didn't tell me why. I want to know why it's on. (Dissatisfied: because I am old & visually impaired).

**Family member:** Been given no education. Need to know how to manage if patient collapses at home. I asked the nurse who said I should contact the consultants social worker. (Dissatisfied: want to get patients out of hospital as quickly as possible).

In response to the question how satisfied were you with the provision of information/education, five patients reported they were very satisfied, eight were satisfied and three were dissatisfied.

In response to the question how satisfied were you overall with your care while in hospital, seven patients reported they were very satisfied, eight were satisfied and one was very dissatisfied.

In response to the question how satisfied were you overall with the nursing care you received while in hospital eight patients reported they were very satisfied and the remaining eight were satisfied.

**Are there any other comments you would like to make about your stay in hospital?**

Box 9 shows list of patients' general comments.

Stuck in a room with a disgusting patient couldn't sleep, I asked to be moved for weeks before finally moved.

Annoyed by other patients in the room calling the nurse instead of ringing the bell. Night light on in corridor during the night so need a sleeping tablet to sleep. Wakened by night admissions.

Should have a patient area outside.

Some nurses are better than others.

Have been spoilt, the girls have looked after me.

Nursing side good but follow up & liaison with families doesn't exist.

There are a couple of dogs, grumpy nurses.

Night staff work harder than day staff.

Staff have plenty of time to spend with everyone. Staff were really good. More food than I could eat.

Didn't like 2 nurses, one was incompetent the other very loud & irritating. The others generally were good. Was in a 4 bed room with horrible noisy patients, asked to be moved, now in a single room.

Nice atmosphere, feel secure, like the music in the corridor.

## **Discussion**

All questions were answered with the exception of a total of five patients choosing not to respond to one or both of the following questions: physical needs (n=2) and emotional needs (n=3). For all questions, of the 15 patients and one family member, the minimum number indicating they were satisfied was six (37.5%) and the maximum 11 (68.75%) while the minimum number of four (25%) and maximum eight (50%) reported they were very satisfied.

Of the survey participants, 51 % reported they were satisfied while 39% reported they were very satisfied. Thus when combining responses for both levels of satisfaction the overall level of being satisfied and very satisfied was 90%.

For all questions, of the 15 patients and one family member, the minimum number indicating they were very dissatisfied was one and the maximum two while the minimum number of one and maximum number of three reported they were dissatisfied. Areas reported as very dissatisfied consisted of their physical needs (n=1patient), emotional needs (n=1patient), discharge planning (n=2: 1 patient and 1 family member) and overall care while in hospital (n=1pt).

The highest area of dissatisfaction was discharge planning where two patients indicated they were very dissatisfied and one patient and one family member indicated they were dissatisfied with the discharge planning provided.

Areas reported as dissatisfied consisted of general nursing care n=2:1 patient and 1 family member, treatment, n=1 patient, discharge planning n=2: 1 patient and 1 family member, involvement in care n= 1 family member and the provision of information and education n=3: 2 patients and 1 family member.

When combining responses for both levels of dissatisfaction the overall level of either being dissatisfied or very dissatisfied was 10%.

## **Use of findings for study patient satisfaction survey**

The patient exit interview showed that their expectations were being met at a high level and areas for improvement consisted of discharge planning and the provision of patient information and education. Consequently questions related to these deficits, together with general nursing care, were selected from the Western Australia Department of Health 2006-07 Patient Evaluation of Health Service Questionnaire.

## APPENDIX O

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### **PATIENT SATISFACTION SURVEY**

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#### A TERTIARY HOSPITAL SATISFACTION WITH CHANGES TO NURSING CARE SURVEY

Hello, my name is \_\_\_\_\_ and I am calling from a tertiary hospital. Could I please speak with **[NAME OF PATIENT]**

We are currently reviewing the way that we provide nursing care. We are keen to know how you feel about the nursing care you recently received while in ward ( ).

We would be very grateful if you would participate in this short survey. You don't have to do the survey of course but we hope that you will. It should only take a few minutes and it will help us improve our services to patients. I can assure all information given will remain confidential. The answers from all people interviewed will be gathered together and presented in a report. No individual answers will be passed on. Your participation is voluntary and you can withdraw at any time.

Should you have any concerns you wish to discuss regarding how this study is conducted please contact: Associate Professor Gavin Leslie, Chairperson RPH Nursing Research Review Committee 9224 8081.

**If person agrees to participate, continue. If person doesn't wish to participate, thank and terminate the call.**

Being in hospital can be an unsettling experience. Consideration of you personal as well as clinical needs is an important part of hospital care. Please let me know how often the following needs were met, choosing from Never, Sometimes, Usually or Always. If any question doesn't seem to apply, just say doesn't apply.

	Always	Usually	Sometimes	Never	No Opinion	Doesn't Apply
1. I felt that the nurses knew what they were doing when they were treating me.	4	3	2	1	8	9
2. I felt confidence in the nurses.	4	3	2	1	8	9
3. The nurses had enough time for me when I needed it.	4	3	2	1	8	9
4. The nurses treated me as an individual.	4	3	2	1	8	9
5. I felt that I could ask the nurses for information if I felt anxious about something.	4	3	2	1	8	9
6. The nurses treated me with politeness and consideration.	4	3	2	1	8	9
7. The nurses checked on me regularly to make sure that I was okay.	4	3	2	1	8	9

Appendix O: Patient Satisfaction Survey

	Always	Usually	Sometimes	Never	No Opinion	Doesn't Apply
<b>8. I received enough assistance with showering, bathing, mouth care or going to the toilet.</b>	4	3	2	1	8	9
<b>9. The nurses responded quickly to my request for pain relief.</b>	4	3	2	1	8	9
	Always	Usually	Sometimes	Never	No Opinion	Doesn't Apply
<b>10. The nurses told me about the care or treatment that they were about to give me.</b>	4	3	2	1	8	9
<b>11. The nurses kept me informed about my progress.</b>	4	3	2	1	8	9
<b>12. The nurses answered my questions and responded to my concerns.</b>	4	3	2	1	8	9
<b>13. The nurses gave information about your progress to your family/partner</b>	4	3	2	1	8	9
<b>14. The nurses gave me enough support and reassurance.</b>	4	3	2	1	8	9

Now I am going to ask you some questions about how you were discharged from hospital. Please rate the following choosing from Poor Adequate, Good, Excellent. if any question doesn't seem to apply, just say doesn't apply.

	Poor	Adequate	Good	Excellent	No Opinion	Doesn't Apply
<b>15. The length of time that you stayed in hospital.</b>						
<b>16. The planning of your discharge with your family/partner.</b>	1	2	3	4	8	9
<b>17. The information given to you about new medications you were being given.</b>	1	2	3	4	8	9
<b>18. The information given to me about how to manage your condition/recovery when you got home.</b>	1	2	3	4	8	9
<b>19. The information given to you about what to do if my condition/recovery got worse.</b>	1	2	3	4	8	9
<b>20. The way arrangements for any necessary home services were made prior to your discharge.</b>	1	2	3	4	8	9

Appendix O: Patient Satisfaction Survey

	Poor	Adequate	Good	Excellent	No Opinion	Doesn't Apply
21. The nursing care that you received during this admission.	1	2	3	4	8	9

**Do you have any further comments or suggestions?**

Finally I would like to ask you a few questions about yourself. It will help us to understand more about how to target our services to best meet your needs.

**Note: You should be able to determine gender without asking.**

What was your age last birthday? \_\_\_\_How long did you stay in hospital for this admission? \_\_\_\_

**What were you admitted to hospital for?**

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**How many other admissions to this hospital have you had \_\_\_\_\_**

Are you of Aboriginal or Torres Strait Islander origin?

**(Single Response)**

0 No

1 Yes, Aboriginal only

2 Yes, TSI only

3 Yes, both Aboriginal and TSI

998 Unsure/Don't know/Can't remember/Unsure/Can't Remember

999 Refused

What is your marital status?

**(Read Options. Single Response)**

**1. Married or living with a partner**

**2. Widowed**

**3. Divorced or separated**

**4. Never Married**

**998 Unsure/Don't Know/Can't Remember**

**999 Refused**

What is the highest education qualification that you have completed?

**(Single Response. Interviewer note: Prompt if necessary)**

**1. Never attended school**

**2. Currently still at school**

**3. Year 8 or below**

**4. Year 9 or equivalent**

**5. Year 10 or equivalent**

**6. Year 11 or equivalent**

**7. Year 12 or equivalent (matriculation/leaving)**

**8. Bachelor degree or higher**

**9. Diploma or certificate taking more than 12 months full time**

**10. Diploma or certificate taking less than 12 months full time**

**11. Trade / apprenticeship**

**998 Unsure/Don't know/Can't remember**

**999 Refused**

Which ONE of the following best describes your current employment status? Are you:

**(Single Response. Read options)**

1. Employed full-time

2. Employed part-time

3. Unemployed

4. Engaged in home duties

5. Retired

6. Unable to work

- 7. A student
- 8. Other
- 998 Unsure/Don't know/Can't remember
- 999 Refused

**THANK YOU VERY MUCH FOR YOUR TIME AND COOPERATION**

## APPENDIX P

**CURTIN UNIVERSITY ETHICS APPROVAL**

## memorandum

<b>To</b>	Professor Robin Watts Nursing and Midwifery
<b>From</b>	A/Professor Stephan Millett, Chairperson, Human Research Ethics Committee
<b>Subject</b>	Protocol Approval HR 137/2008
<b>Date</b>	24 October 2008
<b>Copy</b>	Heather Kidd Nursing and Midwifery Graduate Studies Officer, Faculty of Health Sciences



Office of Research and Development

Human Research Ethics Committee

TELEPHONE 9266 2784

FACSIMILE 9266 3793

EMAIL hrec@curtin.edu.au

Thank you for your application submitted to the Human Research Ethics Committee (HREC) for the project titled "The development, implementation and evaluation of a shared care model of nursing care for hospital in-patients using a practice development approach". Your application has been reviewed by the HREC and is **approved** subject to the conditions detailed below:

1. Please advise the Curtin HREC where and how the patient details will be stored during the telephone interview phase. If all calls are to be made from the hospital there is little problem with the security of this information, but if the calls are made from outside the hospital there must be a secure method for storing and transporting personal information - e.g. password protected hard drive.
2. Advise the telephone interviewees that personal identifiers will be removed from their responses at the end of the interview.
3. Please correct the title of Appendix C
4. Please store a back-up copy of data in a secure storage area at a Curtin Campus

**You are authorised to commence your research as stated in your proposal when a response is received and approved by the Executive Officer**

**Please note the following:**

- The approval number for your project is HR 137/2008. Please quote this number in any future correspondence.
- Approval of this project is for a period of twelve months **23-10-2008 to 24-10-2009**. To renew this approval a completed Form B must be submitted before the expiry date **24-10-2009**.
- If you are a Higher Degree by Research student, data collection must not begin before your Application for Candidacy is approved by your Divisional Graduate Studies Committee.
- The following standard statement **must** be included in the information sheet to participants:  
*This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number HR 137/2008). If needed, verification of approval can be obtained either by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University of Technology, GPO Box U1987, Perth, 6845 or by telephoning 9266 2784 or by emailing hrec@curtin.edu.au.*
- It is the policy of the HREC to conduct random audits on a percentage of approved projects. These audits may be conducted at any time after the project starts. In cases where the HREC considers that there may be a risk of adverse events, or where participants may be especially vulnerable, the HREC may request the chief investigator to provide an outcomes report, including information on follow-up of participants.

Regards,

  
A/Professor Stephan Millett  
Chair Human Research Ethics Committee

## APPENDIX Q

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### ***PATIENT POSTAL COVER LETTER***

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Name of Study Hospital

Date

Dear [Insert Patients name]

I am contacting you as you have recently been discharged from [insert name of study hospital]. I would like to invite you to participate in a nursing study looking at what effect the way nursing care is provided has on patients and nurses working environment. As part of the study we are keen to know how you feel about the nursing care you recently received while in ward [insert ward]. A number of questions regarding the nursing care you received have been compiled in the survey enclosed with this letter. We would be very grateful if you would complete the survey and return it using the stamped addressed envelope. Please don't feel you have to complete this survey, it's entirely voluntary.

If you do decide to complete the survey, this means you are consenting to have the information you provide, combined with other patients information used in a hospital report and also published in a journal article. I can assure you, your information will not be identifiable. If you decide, after returning the survey, that you would like to withdraw your information from the study, please contact us on [insert phone number].

Thank you for considering this invitation.

Yours Sincerely

[Name of researcher]

## APPENDIX R

**SYNTHESIS OF STRATEGIES**

<b>Problem experienced</b>	<b>Strategies from nurses reflection</b>	<b>Theory generation</b>
Increased pressure on team leader/experienced nurse	Each nurse to demonstrate accountability for practice Incorporate other resources: SC, CNS, SDN Develop a team colour coded weekly roster, allocating the same patients to each team throughout the week so as to enable continuity of care between shifts and team learning to work together.	Professional practice Promotion of continuity of care while enhancing team development
Managing more patients care requirements	Optimise skill mix: SC to obtain knowledge of staff skill mix & incorporate junior staff with SC, SDN, CNS Meet after handover to work out how to help: prioritise care, share workloads, learn from each other's expertise	Understanding staff abilities Helpful ways of working
Learning to educate and support staff	Planned supervision of clinical procedures, assistance with patient assessment & management of deterioration in patients' condition. Inform team of learning deficits so that these can be considered & addressed when planning patient care Development and demonstration of scenarios	Integrating teaching & learning in nursing practice
Communication difficulties	Defining effective communication and agreeing to communicate with each other in this way Development of TMP and conditions for their use	Effective communication among teams
Managing documentation when working in teams	Cease recording care on nursing care plans prior to providing care. Care plans only signed after care provided. Change to recording care with initials so that both staff can sign care plan Any team member can record : <i>All care as per nursing care plan</i> with the exception when a patient's condition changes and DAR used by nurse responsible for managing the change in the patient's condition.	Adapting to documentation constraints and meeting policy requirements.
Non compliance with SCM	Incorporate elements of patient allocation: primary responsibility for patients but assist with overall work while educating and supporting staff	Overcoming staff resistance while maintaining Executive aim
Nursing rounds: too frequent and unnecessary	Reduce frequency & change components Cease at 3/12 (N=4) 17 continued Cease at 12/12 (N=6) 11 continued	Staff empowerment to influence change
Bedside handover: uncertain how to do this & concerned with maintaining confidentiality	More education by researcher, SDN & CNS Demonstration & supervision by researcher, SDN & CNS Development of own handover sheet Development of standard approach Development of patient and visitor information sheet Sensitive information provided outside patients' rooms Cease (N=1) 7 of 8 continued at 12 months.	Nursing led bedside handover