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# AJAN

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# Nursing care of older patients in hospital: implications for clinical leadership

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## KEY WORDS

Older patients; clinical leadership; professional agency; nursing care; acute care units

## ABSTRACT

### **Objective**

This study investigated how nurses managed the care of acutely ill older patients in acute hospital settings.

### **Design**

Constructivist inquiry has been used that included multiple methods of data collection: interviews, observations and documentation of care.

### **Setting**

Participants were recruited from five acute medical and surgical units across two public hospitals.

### **Participants**

Twenty seven registered nurses caring for patients who were aged 65 years and older.

### **Results**

Three themes were identified from the data analysis: being informed about care; limiting care; and rationalising actions. Nurses articulated they understood that quality care was important, but care was limited and interventions were prioritised. The participants blamed health services, lack of clinical leadership, patients, other nurses, and themselves.

### **Conclusion**

These findings have implications for issues of professional agency and clinical leadership. While there is a need for good clinical leadership which is aligned with empowerment to exercise professional agency, speculation about how the dynamics within the units in this study developed and were maintained needs further consideration.

## INTRODUCTION

Policies of fiscal responsibility have permeated health care systems in many developed countries, resulting in reduced staff and resources (Sheward et al 2005). This economic philosophy has dominated the way health care services are provided and has led to higher value being placed on the promotion of economy, efficiency, and effectiveness (McCormack 2003) with the aim of reducing length of stay in hospitals (Duckett 2005). These strategies have resulted in a diminished emphasis on quality nursing care (Suhonen et al 2010; McVicar 2003).

Globally there are steady increases in the age of populations with the greatest increases in those aged 85 years or over (World Health Organisation [WHO] 2006). This has impacted on health resources as people in this age group who are hospitalised, require significantly more medical resources and quality nursing care than younger patients, and will need such care for a longer period of time (Australian Institute of Health & Welfare [AIHW] 2007). Older patients presenting with acute illnesses are more likely to have concomitant diseases and disabilities, and be at a higher risk of further functional decline. Their needs are complex and they require knowledgeable and competent nursing care (Graf 2006; Lumby and Waters 2005). If skilled nursing care is not provided, these older patients are more likely to be discharged with increased health problems and with a greater likelihood of not returning to their own homes (AIHW 2007). Thus, the quality of life for these older patients dramatically alters as they are forced towards often irretrievable physiological and psychological decline (Graf 2006; Hart et al 2002).

Acutely ill older patients in hospital require competent nursing care that is framed by humanistic and scientific knowledge (Parker 2006; Nelson and Gordon 2004). A 'technical approach' to care includes treatments or tasks which are generally related to the scientific medical model of curing and are monitored and managed by nurses (Griffiths and Crookes 2006). By comparison, a 'humanistic or holistic approach' to nursing includes care that

is related to the affective and functional needs of patients (Cormack et al 2007; Gottlieb and Gottlieb 2007; Taylor and Wros 2007). Nursing care that meets affective and functional needs is mainly initiated and supervised by nurses and is based on the assessment, decisions and implementation of caring actions, which protect helpless and/or immobile patients from complications and harm in hospital. Chang et al (2007) found that evidence based nursing practices framed by models of care that addressed functional needs, enhanced older patients' satisfaction, and health outcomes. This finding may reflect that with chronicity and frailty there is a higher need for quality nursing care and assistance during hospitalisation.

Nursing decisions made about the amount and type of care required by older patients in hospitals can be constrained by economic rationalist policies. For example, insufficient staffing results in a loss of quality care required by debilitated older patients and can lead to adverse events and even death. Kazanjian et al (2005) in their systematic review of nineteen studies found an association between one or more unfavourable attributes in the health system and higher patient mortality. This evidence indicated that the social and environmental attributes of hospital nursing practice have an effect on outcomes of care for patients. Organisational staffing practices were also found by Meyer et al (2009) to influence patient outcomes. A Belgian study by Diya et al (2010) investigated lower staffing levels and found that they were associated with higher mortality for elective cardiac surgery patients. Reducing levels of staff in hospital units may be a short-term economic solution that has long-term economic consequences. However, findings by Aiken et al (2008), Sales et al (2008) and Rafferty et al (2007) found that increased nurse staffing was found to be associated with better outcomes and decreased mortality risk for patients in hospital. Systematic reviews undertaken by Kane et al (2007) and Lankshear et al (2005) showed an association between increased registered nurse staffing and staff with a richer skill mix and lower levels of hospital related mortality and adverse patient events. Needleman et al (2006) noted



that hospitals may need to consider not only the 'business case' of increased costs for staffing but also the 'social case' in investing in additional nurse positions which are necessary for the quality caring of patients in order to reduce deaths, lengths-of-stay, and adverse patient outcomes.

Risks for patients in hospital were increased when nurses' work was influenced by task assigned actions, however, they were found to decrease when the institutional structures and management provided adequate nurse staffing and support for nurse-assessed quality of care (Aiken et al 2002). Ward managers may introduce task assignment when they do not have appropriate staffing numbers, as it is seen to be efficient. However, this practice can lead to fragmentation of care (Fagerberg and Kihlgren 2001; Shorr 2000) and to dissatisfaction (Bogat et al 2005). Neither of these practices fosters the use of critical thinking and professional judgment, necessary in maintaining the quality of care needed by dependent and older patients. Patient satisfaction was found to be higher in hospitals where the work environment was more beneficial to nurses' providing quality caring practices (Kutney-Lee et al 2009).

Given the current constraints upon hospitals and the increase in admissions of frail and older patients, this study focussed on this highly vulnerable group in the patient population. The aim of this study was to investigate how nurses managed the care of acutely ill older patients in hospital settings. Specifically the study explored: nurses' knowledge of what comprised competent care; the actual care that was being provided and how nurses perceived such care. This paper will consider the implications of the findings for professional agency and clinical leadership.

## METHOD

Constructivist inquiry (Guba and Lincoln 1994) was used to frame this study. The purposive sample consisted of 27 registered nurses who were working in two public hospitals and who had at least two to three years experience working in general hospital units and in caring for patients who were 65 years and older. Approval for the study was obtained from the hospital

human research ethics committee. Recruitment began by contacting nursing administration and nurse managers of the hospital units. Meetings were undertaken with nurses on the hospital units under investigation to explain the study and to provide information letters and gain written consent. On the day of data collection, nurse participants were asked to approach the older patient they were caring for and provide an information letter about the study and obtain verbal permission. Following verbal consent, the researcher would then visit the older patient, answer any questions and obtain written consent.

## DATA COLLECTION

Data collection consisted of observations, interviews, and documents (Erlandson et al 1993). The researcher mainly utilised an observational role in collecting data of the nurse-patient dyads; participation by the researcher would only occur if the nurse requested assistance with patient care. Observations were conducted close to the patient's bedside, over a two to three hour period. In addition to the observation of nurse-patient dyads, one to two hours was spent at the ward desk and other treatment areas observing staff interactions and work patterns. A partially constructed format was used to guide documentation of the observational process as the nurses' interacted with their older patients and with other staff on the ward. Interviews with nurse participants were guided by semi-structured questions and focused on the nursing care of older patients in the hospital context. A review of patients' records was undertaken if required, for clarification. These records are, according to Lincoln and Guba (1985), contextually rich sources of information because they are written in the workplace language and are legal documents.

In order to be confident that trustworthiness and rigour have been maintained, Lincoln and Guba's (1985) four criteria of credibility, transferability, dependability, and confirmability have been met. Techniques used to increase confidence in the credibility of the findings included: prolonged engagement, persistent observation, and

triangulation across the three methods of data collection; and use of peers to check on the inquiry process. Transferability is an aspect of trustworthiness, which in this study was concerned with providing a data base that made 'transferability judgments' possible for those wishing to use the findings. Dependability is concerned with the authenticity of the recorded data. This was achieved by the use of an inquiry audit. A nursing colleague experienced in research work performed an audit of the raw data and peer debriefing notes to verify accuracy of the analysis. Confirmability allowed for an audit to be made of the trustworthiness of the study by an examination of the inquiry context.

### DATA ANALYSIS

Preliminary data analysis was undertaken following transcription of both the observations and interviews. Issues or incidents were first highlighted, and then these incidents became 'units of information' that were used later in the analysis process to decide on the thematic categories (Lincoln and Guba 1985). Each line and paragraph was read and the occurring issue or idea was underlined and coded with a conceptual action label or theme which was then allocated to a category. Theoretical notes were taken about 'questions, thoughts, and descriptions' of what was happening during the analysis (Corbin 1986). Memos were also recorded about the recurring themes and also the meaning of these themes and their categories. The NVivo software programme (QSR International Pty Ltd., Doncaster, Victoria, Australia) was finally utilised to manage all the data and to continue coding and reworking of the themes and categories.

### RESULTS

The data presented is mainly from interviews, with some data included from observations and documents. All direct quotes from the interviews are presented as indented and italicised. Data from observations and documentation are indented, italicised and bolded in order to distinguish them within the text.

The data analysis resulted in three major themes that emerged as important in nurses' experiences and perceptions with regards to how they managed their care for older patients. These themes included: *being informed about care, limiting care, and rationalising actions*. The participants revealed that they were informed and knowledgeable about the care required for older patients, and understood the importance of providing quality care, but they felt the necessity to limit this care due to perceived time constraints in the busy hospital units and the need to complete technical or medical tasks as a priority. These nurses articulated their frustration and stress because they were not able to provide what they believed to be an expected standard of care in the economically constrained hospital settings. Participants rationalised their actions by blaming a range of situations and people for their decisions to limit care for older patients, such as the hospital and nursing administration, themselves and even the older patients.

#### Being informed about care

The theme, *being informed about care*, was reflected in the nurses' knowledge and understanding about the importance of providing quality caring and the value they placed on their therapeutic relationship with older patients. The nurses emphasised the importance of being informed about aspects of older patients' histories and in using ongoing critical assessment to detect changes in the patient's condition:

*[You need to know]... if they have a [physical] condition... like, say, if they are a diabetic, and they have a surgical procedure and the wound doesn't heal.*

*Looking for 'those sorts of cues that they [older patients] are going to give...if they are getting restless... if someone has a fall...you need to find out and to be informed... it can be anything...not eating properly or depression...there are just so many reasons...*

'Finding out' about the older patient's condition was seen as an essential part of the nurse participants'

practice. They showed this need to be informed in the way they discussed the importance of 'assessing the functional needs of the older patients before they went into further decline'. They talked about 'acknowledging and providing reassurance', through understanding the older patient's coping ability. Additionally, nurses articulated that it was important to keep their word, return to complete the care that older patients required, and to provide extra care. These strategies showed the professional value the nurses placed on developing a relationship that was patient-focused and therapeutic in nature:

*I think that's important, to have that contact with them [older patients] because they are still a person.*

*When I give the more basic [meets functional needs] care...then the happier the patient is... just like the caring things that you learn, such as pressure area care, mobility, independence - the things that I think nursing is about.*

During observations of nurses' interactions with older patients, some nurses demonstrated their knowledge and capability in being informed so they could provide care that was more focused on the person:

***The nurse asked the patient, 'have you had a back rub lately...have they turned you around? Do you mind if I look at you?' The nurse examines the patient's back and asks, 'are you sore?' the patient responds that her back is sore and the nurse replies, 'I will rub [wash and massage with cream] your back and feet.'***

However, it became evident in observations and through a review of some patient documentation that this standard of care was not the usual practice for all of the nurses.

### **Limiting care**

The second theme concerned the way nurses were *limiting care* by prioritising patients and substituting time needed for care of older patients for social time with other staff. The nurses disclosed they had to choose which patients to provide care for, and to reduce the amount of care for others. Shortage of staff, time limitations, personal preference, and the

work environment were raised as major problems that impacted on their ability to complete patient care, particularly for older patients:

*I think the challenge in nursing is that you... don't always have the time... we're rushed and we just don't have the funding to staff the beds... You don't have the time to adequately assess them.*

The nurses articulated that some older patients required more of their time and that this time was needed to complete other technical or routinely assigned tasks. There was a sense of resentment in the comments by some nurses about the additional burden that caring for the needs of older patients placed on them. "It's hard when you've got other patients [as well as the older patients] ... because it is mentally draining, it's not only physically draining." The nursing care needed to meet the functional needs of older patients was compromised:

*Time impacts on being able to give the care you want to give.*

The provision of care for the older patients was often interrupted by medical treatments or other technical tasks that were considered to be more urgent:

*I really didn't interact with him that much [an older patient]. I think I just cared mainly for the patient with the central line and I think that was it.*

Participants said they could not always return to complete the care needed by older patients because they had to prioritise their time:

*It's priority nursing - don't wash some patients if you can't do everything else, such as the medications and the orders.*

Sometimes nurses did not speak to, attend or respond to patients when they were in their rooms. Some nurses stated they felt caring for the older patients to be a 'chore' as it was 'hard physical work' that they did not enjoy:

*I don't enjoy looking after the aged and the incontinent patients, and I find that frustrating... It's a really heavy kind of nursing and you do*

*lots of lifting and it's not good for your back and health.*

Nurses were aware that staff were avoiding or distancing themselves from the older patients. Inconsistencies were found between what care the nurses knew should be provided and the actual care they implemented. One nurse explained:

*It's important not to ignore them like some [nurses] do.*

However this nurse did not come near the patient during the morning observation and when she did it was only for a short time and for a routine task:

***No-one interacted with the older patient during the morning observation, except to give him a medication. He sat on his own at his bedside.***

During this next observation, the nurse is not attending or relating to the particular functional needs of the older patient. She has woken the man, but did not offer to take him to the toilet and instead gave him his breakfast tray:

***This elderly man is confused and has been woken up and sat in the chair for his breakfast. The nurse has left the room. He stops eating... he then stands up looking agitated and indicates that he wants to urinate but does not know where to find the toilet. He is unsteady on his feet and holds onto the window sill.***

The patient records for this man showed that two days later he had to be sedated for agitation. The charts noted that he was 'getting upset' because he could not find the toilet. He had become increasingly agitated since that time. The staff during the observation had not attended to the cues the man had communicated - he was restless and upset when he wanted to urinate. A few days later it was reported by a nurse that he fell trying to get out of his bed to find the toilet and had cut his head. However, the medical officer had requested regular toileting.

***Nursing report. The patient climbed over bed rails to go to the toilet and had removed his IV. Patient was confused at times and agitated and very loud and unable to settle.***

Participants admitted that they used time accessible for patient care for social time at the desk. They expressed a need for this distraction to help them cope with their work and they discussed finding some 'relief from their stressful role' through social activities with other nurses, doctors and allied health practitioners: "we need some time for ourselves too." These social activities were confirmed by observation. Nurses were observed to complete the routine or formally required care such as medications, treatments and charting, and then return to the ward desk for this social interlude. In some instances their conversations were noisy, could be heard throughout the ward and could last as long as one hour.

### **Rationalising actions**

The third theme *rationalising actions*, reflected the process used by the nurses to find justifications for their care limiting behaviour. In finding reasons for their behaviour, the nurses allocated fault to the health care system, the hospital, nursing administrators, themselves, other nurses and the older patients. They felt that a lack of staff and resources prevented them from providing quality care:

*I can go to a hospital administration meeting ... and go back six months [later] and they're talking about the same thing. Nothing happens. It just drives me nuts. They [administrators] are worried about the budgets... overtime and all that sort of thing, and, you know... they [nurses] are not really doing the care... what they really want to do for a patient.*

Some of the nurses reported that they were perturbed by the perceived lack of interest of hospital and nursing administrators in the standard of nursing care in favour of improved patient throughput:

*There's too much attention on the supervising administration role in the hospital [not on the quality of patient care].*

*Well, the biggest problem is our lack of staff. That's just not allowing us to give the standard of care.*

Fault was allocated not only to administrators but also to the Nursing Unit Managers (NUMs). Many nurses

believed they lacked support at the ward level for implementing an expected standard of care:

*The NUM role used to be about the working, coordinating, delegating and managing. Whereas... the NUM is now no longer available on the floor [and] is not attuned to the needs... so there's been a real compromise in the quality of care that's given.*

Rationalising their actions was demonstrated through finding fault with not only themselves but also other nurses. Nursing colleagues were portrayed as being part of the problem on the units in relation to the lack of acceptable care for the older patients:

*I think, as nurses, there is an awful lot we can do... you do [need to] use... real nursing skills when you care for older people. I didn't feel that I was using those skills in acute care wards [units]... because we were so busy, and we were so restricted to dealing with what was happening there and then.*

It was evident from many of the observations conducted in this study that there was a range of care provided for older patients; some nurses were interested in the older people, while others were inattentive and demonstrated a lack of response, disrespect and even abuse. They admitted they were informed about the care required by vulnerable older patients and knew they were not practising competently, and they also understood that this lack of care could result in complications for the older patients; however, they felt personally unable to prevent these practices on the units:

*I just thought, God, we are just so bad. In the way we care for older people... I think that it is about giving good patient care because it is not just going in their rooms and emptying a catheter bag or taking someone to the toilet, but they [nurses on the ward] are just leaving them in there.*

Some nurse participants also blamed older patients for impeding their work:

*They [older patients] just totally throw out everybody's time-management.*

And not notifying them if they were having any health problems:

*But you've got to have the time to ask them if their heels are sore, most of the time they won't tell you. They just see you running backwards and forwards. Yes, how often do they tell you? I had someone last night that had chest pain. And I said, "Why didn't you tell me?" and he said, "I didn't want to tell you."*

Observed interactions confirmed that even when older patients attempted to let them know about the problems they were experiencing, using either verbal or nonverbal communication, which included complaints of 'chest pain, burning sacral area, hunger or the need to use the toilet', some of the nurses chose to use avoidance tactics to these overtures. Additionally, it was also demonstrated that when actual or potential problems had been reported in patients' records, and when care regimes were recommended in the care plans, this care was not always given during the shift.

In this study, nurses in hospital units caring for older patients, described an environment that valued rapid throughput and specific interventions while a holistic approach to care could be relegated to a lesser priority. Nurses were accountable for specific tasks but not for care that addressed the functional needs of older patients. Lack of satisfaction with this environment was evident in the abdication of professional responsibility and agency. Satisfaction was sought in social interaction as a distraction from what the nurses saw as under-valued work. A culture of rationalising their actions through blaming was evident, with nurses finding fault with every level of the system, from those who fund health care and administer it, to the patients themselves.

## CONCLUSION

Clearly there were dynamics occurring in the way nursing care was conducted on the acute care hospital units in the study. There was clear evidence of a deficiency in professional agency as nurses failed to exercise responsibility in their clinical decisions and in the maintenance of a standard of nursing care.

There was also clear evidence of a lack of clinical leadership in the accounts of the nurse participants regarding their nursing practices, support by nursing unit managers, as well as in the observational data about their actions. While nurses rationalised their actions by blaming economic constraints and inadequate time management on poor patient care, it was clear that time constraints did not apply to time taken on the units for social interaction.

Two of the important issues that arise from this study are professional agency and clinical leadership. Professional agency was raised by participants concerned about the standard of care. Participants knew about the standard of care they should be providing but acknowledged that care was not of the standard expected (Australian Nursing and Midwifery Council [ANMC] 2006). However, they felt helpless to make changes in their practices and so displayed the helplessness of a disempowered group. When they did acknowledge their lack of nursing care for older patients, they quickly moved on to blame everyone in the system.

Giddens (1984 p.3) in his Structuration Theory, asserts that human beings are knowledgeable and purposive actors and that agency is not about intention to act but about the capability to actually 'perform the action'. He states that "to be a human being is to be a purposive agent, who both has reasons for his or her activities and is able, if asked, to elaborate discursively upon those reasons (including lying about them)." This implies that for the nurses to be professional agents they must not only know about safe and competent care, but must also show this standard of care in their actions. As professional agents, nurses in this study therefore had power as individuals, or the means of intentionally choosing to 'get things done'. They could choose to act competently or choose not to act. Through their reflective ability, they could have brought about some change, even at a ward level, by their own individual agency or by challenging other nurses. From their interviews, it appeared that the way nurses were practising on the units was seen by the collective of nurses to be the 'ordinary way of behaving' so there

was little reflection on their actions and little personal or collective responsibility demonstrated.

Clinical leadership was explicitly mentioned by the nurse participants, as missing on the hospital units. Clinical leadership has strong connections to the issue of professional agency. Participants saw NUMs as invisible and ineffective, not aware of the problems "on the floor". This finding resonates with those of Rouse (2009) who studied absentee and incompetent nurse leadership in intensive care units. Participants in Rouse's study indicated that in units where satisfaction with leadership was low, productivity and morale also tended to be low. The best predictor of productivity was supervisor communication and the best predictor of morale was leader mentoring.

The qualities of effective leadership in education was examined by Day et al (2001) who determined that the qualities of effective leadership reflected high standards of respect and interest in the development and well-being of staff and students. These leaders communicated clearly and were enthusiastic and committed. Most importantly they identified their role as working with people rather than an administrative role. Similarities were drawn by Joyce (2009) between the qualities of effective leadership identified by Day and those required by nurse leaders whose focus is the well-being of nurses and patients.

Clinical leadership has been identified as a concerning issue internationally. In Australia major inquiries into nursing, inspired by nursing shortages, have identified leadership as an issue that requires addressing (Davidson et al 2006). Significant findings from the Garling Report (2008 p.261) into acute care services in NSW public hospitals found that "more than 60% of the activities performed by nurse unit managers involve transactional, managerial and administrative tasks." This result indicates that such administrative activities remove NUMs from a "connectedness to patient care" and their clinical leadership role in managing quality caring practices within units. The Welsh Assembly Government also recognised the gap in clinical nursing leadership at the hospital unit level and the need to re-empower

nursing unit managers (Charge Nurses/Ward Sisters), to re-establish their "presence" and allow them to lead nursing teams in delivering excellent nursing care (Kennedy 2008). Similarly, Belgium (Dierckx et al 2008) and the Republic of Ireland (Lunn 2008) have recognised the need for clinical leadership development strategies that improve patient care.

A case study, undertaken in Belgium, of the effect of leadership development on the individual nurse leaders, the team and patient care was undertaken by Dierckx et al (2008). Of particular note was the increased responsibility that was delegated to the nursing team in relation to solving clinical problems and resolving conflicts with other team members. Nurses stated that by being given more responsibility they were empowered to apply knowledge and experience to clinical decisions, identify more opportunities for professional development, and become more creative in problem solving (p. 759). Moreover, they found that there were clear cut boundaries and a more structured working environment (p. 760). The study by Dierckx et al would appear to have relevance to the findings of this study where professional agency and clinical leadership were lacking. Findings by Armstrong et al (2009) also suggest that access to empowerment structures and a supportive hospital environment that acknowledges the importance of quality caring practices significantly influences patient safety.

While discussion can address the need for good clinical leadership and this is clearly linked with empowerment to exercise professional agency, speculation about how the dynamics within the units in this study developed and were maintained needs further consideration. In the absence of clinical leadership from nursing unit managers, other types of leadership will develop as this present study showed, in that there appeared to be strong reinforcement for specific behaviours, including socialising around the ward desk for extended periods of time with no sanction for such behaviour. There also was a lack of consequence to individuals on the units for the poor standards of nursing care practices that were being provided. Group dynamics are powerful

and social behaviour was sanctioned by the group, and involved not only nurses but other disciplines. However enjoyable this social interaction seemed, it clearly did not fulfil the need of the nurses for work satisfaction, nor the need of the patients for nursing care.

In such an environment, as the nursing practices in this study revealed, the most vulnerable people are patients whose greatest need is for nursing care. Davidson et al (2006 p.184) note that "Patients are admitted to acute care hospitals primarily for collaborative or independent nursing care" and this is no truer than for elderly patients. Leadership and professional agency is required to ensure that these interventions, reflecting good nursing care, are not marginalised and seen as disruptions to time management.

Health care organisations will continue to need to be able to demonstrate economy, efficiency and effectiveness. The effectiveness of organisations has been linked to effective leadership (Joyce 2009 p. 501). Joyce notes that "the increasing emphasis on fiscal accountability in global recessionary times places even greater emphasis on measuring organisational effectiveness." However, nurse leaders need also to ensure that measures of organisational effectiveness recognise outcomes that are congruent with the patient population they serve. Exercise of clinical leadership includes demonstration of the effectiveness of competent nursing care in reducing adverse outcomes and complications that impact in the long term on the cost of health care. Clinical nurse leaders need to link their knowledge of the requirements of patients, including nursing care, and to demonstrate the influence that nursing care has upon patient outcomes and organisational efficiencies. In addition, clinical nurse leaders need to maximise the use of critical thinking and professional judgement in their staff in the care of patients, and especially in the care of vulnerable older patients.

The strengths of this study lie in the extensive and in-depth data that were collected over considerable hours. Multiple methods of data collection allowed

for confirmation of findings and explanations from participants themselves. Limitations must be acknowledged in the number of participants, and participating organisations. While this limits generalisability of findings, the depth and detail of data allow for recognition of problems in other organisations.

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# End of life clinician family communication in ICU: a retrospective observational study implications for nursing

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## KEY WORDS

End of life, communication, family support

## ABSTRACT

### Objective

The objective of this study was to identify practice issues that influence end of life communication and care of patients and families in the intensive care unit (ICU).

### Design

This study used a retrospective observational approach utilising a medical record review.

### Setting

An Australian metropolitan mixed medical/surgical ICU.

### Subjects

There are two parts to this study. The first part related to all of the patients who died in the ICU in one calendar year, a total of 97. The second part of this study related to a random selection of 25% of these patients, a total of 24.

### Results

This study showed that death in the ICU was often anticipated, and that whilst communication between family and medical personnel was evident in the medical record, the involvement or occurrence of communication between the nurse and the family was not recorded, and that nurses were included in only 25% of formal family meetings.

### Conclusion

Whilst this study confirmed that death is often predicted for critically ill patients, and opportunities for communication with the family or next of kin assists to achieve consensus on end of life decisions, the involvement of nurses, as primary care-givers is not well represented in the medical record, thus undermining the importance of the nurses role in direct patient care that extends to the family in the ICU.

## INTRODUCTION

*George, a 66 year old male was admitted to the ICU following a cardiac arrest at a golf course with a 22 minute delay to return of circulation. He was intubated, ventilated and sedated, and admitted to the ICU following investigation and Intra-Aortic Balloon Pump (IABP) insertion to maintain his cardiac output and, thus keep him alive. Upon arrival in the ICU, his condition was critical.*

*Following admission to the ICU and development of a management plan, George's care was managed by his allocated nurse for the shift, and included invasive haemodynamic support and monitoring, various pharmacological therapies, management and manipulation of his ventilation status according to pre-determined parameters and arterial blood gas results. A naso-gastric tube was inserted to enable administration of parenteral medications and early feeding. Pressure area care, mouth care and hygiene were also performed. Haemodialysis was commenced to address anuria and hyperkalaemia. Neurological assessment suggested signs of neurological injury, necessitating further medical review and nursing management.*

*Over the course of the next 24 hours, his condition deteriorated, and George died peacefully.*

ICU are places where the sickest patients receive the most technologically sophisticated care (Hamric and Blackhall 2007), where the primary goals are to help patients survive acute threats to their lives while preserving and restoring quality to their lives (Truog et al 2008). Despite these goals, death is common in the ICU, with as many as one in five Americans dying while using ICU services (Angus et al 2004).

Many studies have reported on the quality of practices in end of life care delivered in the ICU (Azoulay et al 2009; Crighton et al 2008; Bloomer et al 2010), and in particular, end of life decision making, involving clinicians and the family (Gries et al 2008). NSW Health also released *Guidelines for end of life care and decision making* (2005) to assist in guiding clinicians in working with patients and families reaching for consensus in end of life

decisions. Reaching consensus in outcomes requires effective communication.

Insufficient and inadequate communication between ICU staff and family members is a common complaint and families rate communication with staff amongst their most important concerns (Carlet et al 2004), with high levels of anxiety and depression amongst family members of patients in the ICU (Pochard et al 2001). Commonly, care of the ICU patient extends to include the family, where the nurse is often their most visible source of support and education, through spending more time at the bedside than any other clinician (Hamric and Blackhall 2007). Family-centred care acknowledges that the patient is embedded within a social structure and web of relationships (Truog et al 2000), and as a result, the patient cannot be cared for in isolation from their family. This caring relationship that develops between nurse and family facilitates communication and enables the nurse to be privy to information about the social structure of the family, dynamics and value systems (Hamric and Blackhall 2007), all of which assists clinicians in determining care.

When the patient's condition is critical, Crighton et al (2008) endorse open communication with family as essential for clinicians to be able to direct the communication, enabling the family to transition from a curative focus, to end of life care. Interestingly, in the case study described by Crighton et al (2008), the family meeting included family members, physician, and palliative care behavioural psychologist, but not a nurse. This is despite the fact that the meeting occurred at the patient's bedside, suggesting that either the nurse's presence at this meeting was not recognised as significant/important and hence not mentioned, or that the nurse was not included in the family meeting.

The apparent lack of nurse involvement or significant presence in such family meetings may lead to conflict among clinicians. Recent studies (Hamric and Blackhall 2007; Ferrand et al 2003) report that conflict may occur between nurses and physicians regarding end of life care, in particular, concerns regarding quality of life and communication. A

family-centred approach (Truog et al 2008), ensures that the patient is considered in the context of their family structure, and ensures that a consensus in care decisions is achieved, minimising conflict (NSW Health 2005).

Whilst there is little argument that the nurse in ICU plays an integral role in caring and managing a critically ill patient and their care, as depicted in George's story, what is not evident from this story and similar ICU stories, is the hidden work undertaken by nurses, which is no less significant or important.

The concept of hidden work is not new, in fact caring exemplifies the hidden, and often unrecognised work of nurses that is core to the nursing role (Norman et al 2008). In the palliative care setting the nursing work associated with after death care in caring for the family as well as the deceased patient is regarded as hidden work (O'Connor et al 2005), often not acknowledged, and yet essential to care. In the case of ICU, nursing care can include so much more than just the management of therapies and associated technology, work that is often not acknowledged or recorded. By its omission, it undermines the importance of this work and its impact on the patient and their families.

The aim of this study was to identify practice issues that influence end of life communication and care of patients and families in the ICU.

## METHOD

Following ethical approval from the Human Research and Ethics Committee at the health service, two sets of data were collected:

demographic data was collected on all of the patients who died in one metropolitan mixed medical/surgical ICU over a 12 month period (n=97) including: length of entire hospital stay, length of stay in ICU, simplified acute physiological score (SAPS II) and acute physiology and chronic health evaluation (APACHE) II and III scores recorded in first 24 hours.

from this cohort, a random selection of 25% (n=24) were utilised for a retrospective medical record audit. Data collected included reason for admission, cause

of death (as documented on the Death Certificate), NFR status, date of NFR status, time from NFR status to death, next of kin as documented on the hospital admission sheet, next of kin as documented on the ICU nursing admission sheet, all medical and nursing entries relating to end of life/poor prognosis/palliative care decision making, number of meetings held with family, who family meetings were initiated by, who was present at the family meetings, presence of family at death, and evidence of palliative care referral or involvement.

## FINDINGS

From the sample population of 97, the length of entire hospital admission ranged from 1 to 318 days (average 9.7 days). The length of stay in ICU ranged from <1 day to 49 days (average 4.1 days). The mean SAPS II score was 65, the mean APACHE II score was 28, and the mean APACHE III score was 113.

From the randomly selected 25% of the sample population, which were used for a retrospective medical record audit, the following results were obtained. The length of stay in ICU ranged from <1 day to 62 days (average nine days). The mean SAPS II score was 63, the mean APACHE II score was 27, and the mean APACHE III score was 110.

Of this smaller population, 37.5% (n=9) were admitted for a respiratory diagnosis, 25% (n=6) for a cardiac diagnosis, 20.8% (n=5) for sepsis, 8.3% (n=2) postoperatively and another 8.3% (n=2) were admitted with a neurological diagnosis. At the time of death, 96% (n=23) of patients in this population were documented as NFR, and the NFR status was determined between 5 days and <1 day before death, with the average time between determination of NFR status and death being one day.

Next of kin (NOK) is recorded at admission to the hospital, and again upon admission to ICU. In this cohort, NOK as documented on admission to the hospital, and admission to the ICU was different in 25% (n=6) cases.

The researchers also searched for written entries regarding end of life/poor prognosis or other similar wording that would indicate or suggest

communication with family. Whilst very few entries were made by nursing staff in the medical record regarding communication with family about these issues, multiple entries were made by medical staff, including detail of who the conversation was with.

References to formal 'family meetings' were also recorded. The average number of family meetings was two (minimum one, maximum five). The medical record which reported five family meetings was for a patient whose stay lasted seven days. In this particular case, the patient had been hospitalised for 16 days prior to admission to ICU, his SAPS II, APACHE II and APACHE III score were 58, 24 and 87 respectively, and NFR status was determined within one day of admission to ICU. This case highlights that where death is seen as a likely outcome early in the admission, prompt and consistent communication with family facilitated appropriate care decisions, with both family and clinicians in agreement.

Nurse involvement in family meetings was also investigated. Nurses were involved in 25% (n=6) of family meetings. Although it was difficult to determine who initiated the family meetings, written entries about the initiation of a family meeting were made by a medical officer in 79% (n=19) of the cases, with no entries suggesting that a family meeting was initiated by a nurse.

Family members were present at the time of death in 66% (n=16) of cases, not present in 1% (n=2) of cases, and in the remaining six cases, the presence or lack thereof was not recorded at all. Family presence may be related to the time of death, as 25% (n=6) died between 0700hrs and 1500hrs, 46% (n=11) died between 1500hrs and 2300hrs and the remaining 29% (n=7) died between 2300hrs and 0700hrs. A referral to the palliative care consultant team was made in only one case, at six hours before death. There was no documentation about input from the palliative care team.

## DISCUSSION

Given the similarity of the measured predictors of mortality such as SAPS II and APACHE II and III scores between the entire sample population, and the

smaller randomly selected population, this suggests that the smaller randomly selected population are representative of the larger population in terms of acuity and severity of illness. The SAPS and APACHE scores confirmed that patients in both the larger sample of all deaths over a 12 month period, and the smaller population of 25%, were critically ill on admission to the ICU. These data are consistent with a previous study which found that the mean APACHE II and SAPS II scores of patients where life support was withdrawn or withheld was 27 and 59 respectively, and death was seldom unexpected (Bloomer et al 2010).

The high SAPS and APACHE scores are also consistent with the NFR status. This highlights that confirmation of NFR status is appropriate for the acuity and likelihood of death in this cohort. Furthermore, achieving agreement on NFR status requires communication and negotiation between family members and clinicians, until acceptance and unity is reached (Crighton et al 2008).

It is also important to note that despite the critical condition of these patients on admission, NFR status was determined late in the admission, with the medical records showing that NFR status was determined, on average, within one day of death. Despite their critical illness, there may have been factors that delayed the determination of NFR status, that are not apparent to this audit, such as awaiting family or allowing time for the family to comprehend what NFR meant for their loved one (Payne et al 2010), and prepare for death of their loved one.

This study also uncovered that between hospital admission and ICU admission, there had been a change in nominated NOK, from the spouse to another family member in 25% (n=6) cases. Spouses are considered to be the main source of information about the patient and as the best 'proxy decision maker', because individuals are more likely to have shared their wishes and values regarding serious illness with their spouse (Pochard et al 2005). The reasoning behind the change in NOK is not known or determinable. However literature describes the heavy burden that can be carried by the nominated

NOK, who is often asked to contribute to the decision making around care and palliation (Crighton et al 2008). Relatives can experience high levels of anxiety and depression whilst the patient is in ICU (Pochard et al 2001; Azoulay et al 2004), symptoms that can also impact upon family members satisfaction (Gries et al 2008; Carlet et al 2004) and feelings of support in relation to decision making. Whilst some studies support shared decision making between family and clinicians (Cook et al 2006), Azoulay et al (2004) reported that 53% of families in their study did not wish to share in decision making. Given the significant emotional burden it can place on the NOK to participate in decision making, it may be that an alternate family member was deemed more appropriate or capable for this role, in place of the true NOK.

This audit also revealed that on average, there were two formal family meetings for patients in this cohort, often including multiple family members. Multiple meetings assist the family members to comprehend, and learn to accept a poor prognosis, and prepare for the death of their loved one (Morita et al 2004). It is important to note, that despite the nurses' provision of direct patient care and their traditional ICU role of 1:1 nursing, the nurse was only included in 25% of family meetings, even though they may have valuable information, and an alternate perspective derived from their role in delivering patient care, that could be of use in these meetings. NSW Health's *Guidelines for end-of-life care and decision making* (2005) promote that nurses play a significant role in providing clinical and social information about the patient and family, and should be included in a collaborative team, where each team member may bring different but valuable perspectives and information to the process.

Despite the importance of communication in end of life care, what is evident from this study, and George's case study, is that the role of the nurse, in particular in communication with family, is significantly underrepresented in the literature. Primary care for ICU patients is the responsibility of a suitably highly trained critical care registered nurse,

who works independently, prioritising care needs, managing bedside technology, and acting as the primary support and first source of information for the patient and their family, up to and after death (Payne et al 2009). Yet the nurse's role is not demonstrated in the medical record; the legal record of events and a major communication tool (Knowlton 2003). Given that the nurse is present during the patients' suffering, and spends more time at the patient's bedside than any other clinician, their perspective is essential to end of life discussions (Hamric and Blackhall 2007).

Carter reports that the focus on technology has overshadowed caring in the ICU (2008), with minimal recognition of psychological, social and other needs of the patient and their family (Parish et al 2006), thereby creating a situation where essential family-centred communication comes second, and is overlooked in medical record documentation. To overcome this imbalance, several studies have reported positive outcomes for end of life communication in the ICU. These studies support the involvement of nurses in end of life decision making by mandating their involvement in family meetings and multidisciplinary case reviews (Lilly et al 2003; Campbell and Guzman 2003). This creates an opportunity where nursing and medical perspectives can be shared with the perspectives of patients and their families to achieve a consensus (Hamric and Blackhall 2007).

The study revealed that family were present at the time of death in 66% of cases. As the primary carer, the nurse is also responsible for the welfare of the family, and care of the body after death until removal (O'Connor et al 2005), aspects of nursing care which are often not reported, and as a result are part of the hidden work of nursing (Norman et al 2008). The lack of documentation about care and communication with family after death contributes to this under-representation and incomplete recording of care events.

Communication with patients and family is not, however, just an element of nursing care over-ridden by technology. Nurses must also take responsibility for their role in communication, and primary care

providers. What is clear from this study is that if nurses were involved in communication with family, it is not documented, and as a result, becomes part of the hidden work of nursing (Norman et al 2008) that does not receive due recognition. Documentation of this important nursing role is essential if nurses wish to demonstrate their role in family communication and with other health professionals. This is essential if nurses are to abolish inaccurate and outdated stereotypes of nurses and their role in delivering quality nursing care (Armstrong 2005) devoid of any expertise or influence in communication and end of life decision making with patients and their families.

## LIMITATIONS

Whilst medical records can assist clinicians to evaluate and learn from the record of care delivered, they are equally inadequate in that there is no way of determining what care was provided and in what form, if it was not recorded in some way in the medical record. Similarly, whilst the sample size was small and randomly selected, the outcomes cannot be assumed to apply to any other sample group.

## CONCLUSION

Whilst this study showed that the risk of death in some ICU patients is often clearly predicted using well known prognostic indicators, and associated clinical assessment and expertise, clinicians could benefit from reflecting on end of life decision making and communication processes that are present in the ICU, and most importantly, the role of the nurse in these processes.

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# A quality improvement project to prevent, detect, and reduce delirium in an acute setting

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## KEY WORDS

delirium, acute care, rummage boxes

## ABSTRACT

### Objective

To implement a best practice approach to assessment, management and prevention of delirium in two acute medical wards.

### Design

Twelve month quality improvement project using local data to develop and implement local guidelines and tools.

### Setting

Two acute medical wards in a tertiary hospital.

### Subjects

Ward staff and stakeholders.

### Interventions

Delirium screening tool, local clinical pathway, educational program, standardised nursing care plan, practical resource 'rummage' boxes, and a carer information pamphlet.

### Main outcome measures

Ward audit, focus groups and staff perception survey.

### Results

Delirium was found in ten patients among a total of thirty participants (prevalence of 37%) but only half of these cases were diagnosed by the ward medical team. Confusion was noted by nursing staff in all cases of delirium. Almost all of the participants (29/30) had three or more risk factors for delirium and thus were at high risk.

Focus group participants were knowledgeable about delirium, but felt that resources and support were limited. Project tools used were acceptable to ward staff (participants of focus groups); however, substantial numbers of staff remained unaware of the project materials.

### Conclusion

A global approach to prevention in high risk hospital populations may be needed. Nursing staff are well placed to screen for delirium, however, sustaining change is challenging.

## INTRODUCTION

Delirium is characterised by rapid onset of an acute and fluctuating confusional state, and reduced ability to focus, maintain, and shift attention (Speed et al 2007). Given that delirium represents an acute change in cognition, information regarding the person's baseline cognitive function is essential. Delirium is common among hospitalised older people. This is thought to relate to interaction between underlying health conditions, and precipitating factors, which in most cases can be identified with careful assessment and investigation. Increasing older age, prior cognitive impairments, dementia, iatrogenic factors, visual impairment, poor mobility, and severe medical illness are important risk factors for delirium (ANZSGM 2005, DHS 2004, Speed et al 2007). The incidence varies depending on the setting and population; but rates of delirium on general medical wards are generally around 20%, including prevalent and incident delirium (Iseli et al 2007; Holden et al 2008).

Despite this, delirium remains poorly recognised, and up to 70% of cases may not be diagnosed (Khan et al 2009). This is likely to result in substantial adverse outcomes for older hospital patients, given that delirium is associated with higher rates of hospital acquired complications, prolonged hospital stay, higher rates of admission to residential care and increase in mortality. Under-recognition and mis-diagnosis may relate to the heterogeneous clinical presentations of delirium (i.e. people with hypoactive delirium may attract the attention of staff to a lesser extent than people with hyperactive delirium). Furthermore, the differential diagnosis between delirium and other causes of cognitive impairment (such as depression and dementia) may be difficult. Background chronic cognitive impairments (such as dementia) are risk factors for delirium. Thus delirium is frequently super-imposed on a pre-existing cognitive impairment. Staff may hold nihilistic or ageist attitudes, and mis-interpret acute alteration in cognition due to delirium as being due to cognitive decline which is chronic (Clinical Epidemiology and Health Service Evaluation Unit

2006). Given that the differential diagnosis of delirium is often complex, a reliable collateral history is essential to confirm whether the person's current presentation represents an acute change from their baseline state.

Prevention, early intervention, and management of delirium have clinical and cost benefits to the health system. Moreover the benefits in acute settings are: the reduced adverse events for older patients, shorter length of stay in acute care, reduced pressure on family and wider community support networks and, in particular, prevention of premature admission into residential aged care (Inouye et al 1999; Leslie et al 2005). Because of these benefits, early detection and reporting of acute changes in cognitive function are essential. Multiple management guidelines exist for the assessment of delirium outlining the evidence base and providing clinical practice guidance, such as use of screening tools on admission to acute care (Clinical Epidemiology and Health Service Evaluation Unit 2006). Resources for their implementation and evaluation are available, however translation of guidelines to practice is often difficult in busy clinical environments (Weinert and Mann 2008). Major barriers have been identified in translating research advances, such as preventative strategies of proven effectiveness for delirium and falls, into clinical practice and policy initiatives (Sharon et al 2007). These include time constraints, staff education, and rapid staff rotation. In this hospital as in most acute medical wards, staff time constraints, minimal additional resources and difficulty retaining experienced staff had been previously identified as recurring challenges. In this context, there is a risk that staff may view quality improvement as onerous, and avoid engaging in processes (such as regular screening of cognition to detect delirium) that may be viewed as adding to their already heavy workload. Thus the best way to translate clinical practice guidelines to sustainable improvements in clinical practice remains uncertain.

This study aimed to address this gap by first identifying ward based limitations to provision of best practice in delirium assessment, prevention and management,

and then introducing a sustainable clinical practice model that would drive improvements in care for older patients at risk of delirium. The focus of the project was on prevention, early detection, and care for people with acute changes in cognitive state due to delirium.

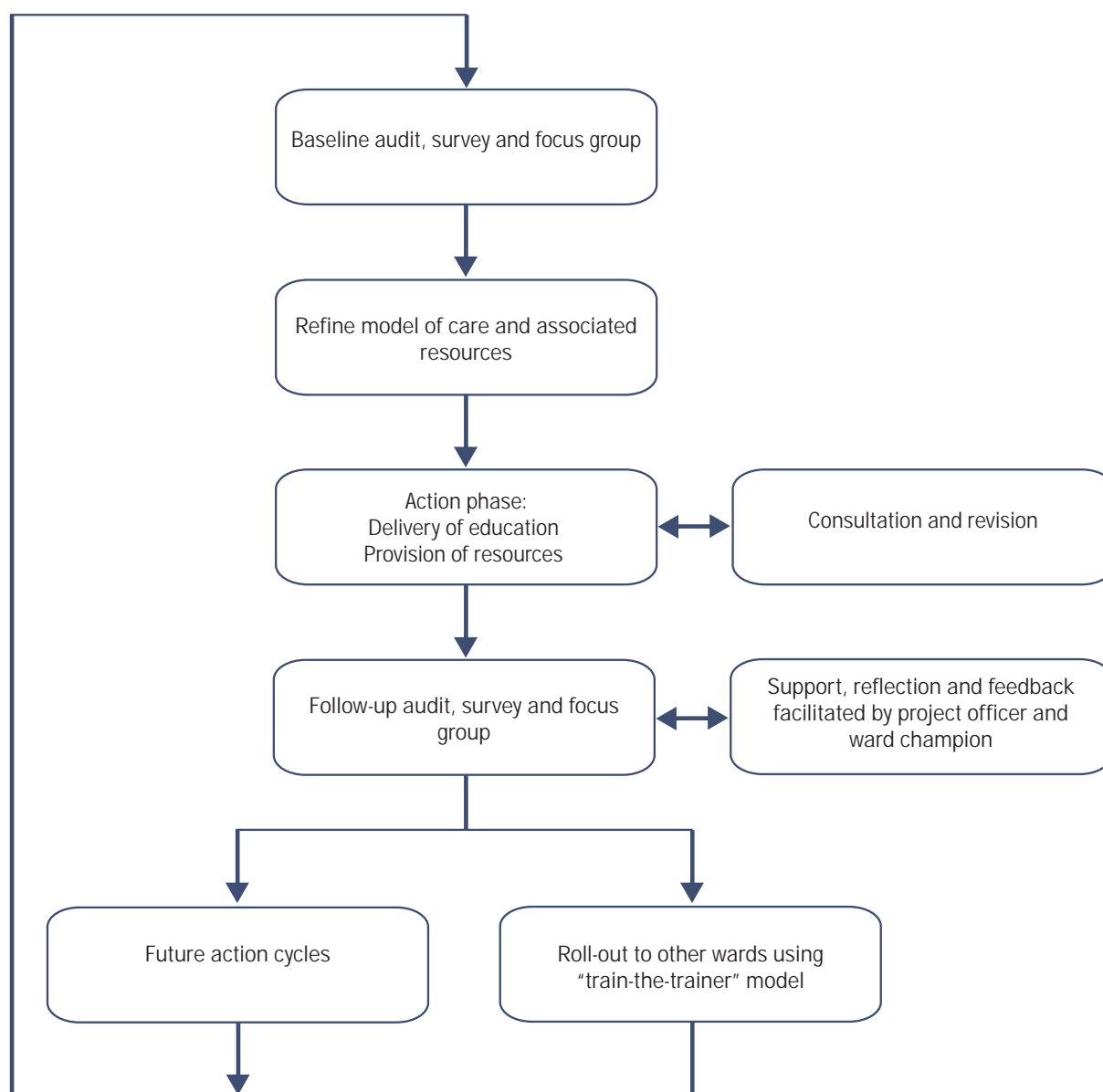
## METHOD

### Study design

A qualitative design, including focus groups and surveys, was used in this quality improvement study (figure 1). Elements of action research (Stringer

and Genat 2004) were also incorporated to allow the project team to 'see, reflect and act', designing the intervention in response to baseline focus groups and ward audit. This approach was used to facilitate relevance and ownership of the intervention and process, and therefore, effectiveness of the intervention. A baseline audit was conducted, including all patients in the target wards on one day. The project team then facilitated development of the intervention. The intervention phase occurred during six months in 2008 and a follow-up audit evaluated adherence of staff to project guidelines.

Figure 1: Overview of study design



### Settings and participants

Two general medical wards in a 679 bed tertiary hospital were targeted because of a high population of older patients and participated in the study. A project team was formed (including medical, nursing and allied health representatives) to oversee the twelve month project. Team members attended monthly meetings. A full time project officer was employed and a local champion, the ward Clinical Nurse Specialist, was identified. The clinical champion was considered vital to the success of the project. This role is normally assumed by a senior staff member who understands the overall mission of the organisation, is resourceful, and is well connected with members of the project team (Li et al 2009).

### Data Collection and Measurement tools

1. The Confusion Assessment Method (CAM) is a reliable, validated tool for diagnosis of delirium (Inouye et al 1990) and was used in this study.
2. A staff perception survey (SPS) designed with a multidisciplinary premise was distributed to ward nurses, doctors, physiotherapists, speech pathologists, pharmacists, dieticians and occupational therapists, pre and post interventions. The survey covered three domains; job satisfaction (Likert responses), knowledge relating to delirium care, and open comment. The survey responses were anonymous.
3. Demographic details of patients over the age of 65 years on participating wards including recording of admitting diagnosis, risk factors for delirium (history of a fall in the preceding six months, taking >three medication or an opiate, memory loss or confusion, uncorrected visual impairment, severe illness and problems hearing) were collected.
4. An audit tool recording use of assessments undertaken by ward staff, interventions and diagnoses of delirium/confusion was also implemented in this study.
5. Focus groups made up of key stakeholders from nursing, medicine, allied health disciplines and psychiatry were utilised. Facilitation of the

focus group utilised a delirium case study to serve as a discussion prompt. Participants were asked to consider tools which could be used in the intervention phase of the project. Two administrative staff attended focus groups to ensure detailed recording of notes.

6. Interrogation of hospital records data was undertaken to ascertain coded episodes of delirium.

### Interventions

The intervention was designed by reflecting on, and discussing information from the baseline audit and the identified best practice guidelines. Consensus was reached among the project team and the ward champion that the high risk population indicated a universal approach to improving delirium care, as any attempts to stratify risk would identify virtually the whole ward population as high risk. There was also consensus that the intervention should target nursing staff predominantly, given they were already identifying all people with delirium as being confused. There was agreement the baseline data indicated a perceived need for a delirium education program for staff, patient and carer information (e.g. an information leaflet), delirium resources which could be freely accessed by ward staff, resources to support behavioural interventions, and measures to improve the environment. These components were chosen to provide staff with the knowledge and tools required to implement delirium prevention strategies, and to detect and care for people with abrupt deterioration in their cognitive state due to delirium.

A model of care for older patients with delirium was drafted by the project officer and revised with input from team members, the ward champion and stakeholders. The model of care included a screening tool - the Abbreviated Mental Test - and a local clinical pathway regarding screening for confusion, assessment of confusion, care for people with delirium, and prevention strategies. The clinical pathway emphasised the need to screen all older people admitted to the wards for cognitive impairment. Identifying and reporting all findings of cognitive impairment, and further assessment

to clarify if an acute deterioration in cognition had occurred, were emphasised as mandatory. The intervention also incorporated educational materials, a standardised nursing care plan, practical resource rummage boxes, and a carer information pamphlet (education relating to steps for the prevention and signs and symptoms of delirium for carers) (Mooney and Shank 2007). A Pharmacological Treatment Pathway for Older People with Delirium was approved by the hospital's drug sub-committee following a period of formal review and consultation in which substantive feedback was received from psychiatry and pharmacy staff. The pathway recommended the use of low dose anti psychotic therapy for first line pharmacologic therapy, only after non-pharmacologic interventions were optimised (Milsen et al 2006).

The Delirium Education Program was designed to respond to the perceived needs of learners expressed in the baseline data collection. The program was drafted by the project officer with input from the project team and senior ward staff. Hospital-wide requirements for format and evaluation of education programs were met. The program included two face-to-face sessions covering delirium screening, diagnosis of abrupt changes in cognitive function, pharmacology and nursing interventions and management. The sessions included i) background (including presentation of a summary of the baseline data; ii) pre-test; iii) interactive discussion; and iv) post-test. The discussion was prompted by pre-prepared slides to ensure consistent coverage of key material. The draft Education Program was delivered to all nursing and allied health staff caring for patients on the target wards. Two sessions were delivered per week depending upon staff and roster availability.

Practical resource rummage boxes (28 litre storage boxes) contained tools which could be used by staff to engage patients at risk of delirium, and those experiencing hypoactive or mixed delirium without agitation or aggression. The contents of the boxes were compiled utilising suggestions from the nursing, allied health and medical staff. The rummage boxes contained laminated orientation cards and

whiteboard markers, a doll, large piece puzzles, bubble wrap, scrap books, laminated pictures, non-toxic crayons and playing cards (Mooney and Shank 2007). These items were chosen to assist staff in re-orienting people with delirium and engaging them in activities. Infection control requirements were met by including only materials that could be washed or were single use.

An orange box of information and resources was designed. This was a reference to the falls prevention 'green box' which has been widely distributed in Australian hospitals (ACSQHC 2009). The orange box contained laminated copies of resources and guidelines for best practice delirium care (including definitions, prevention, assessment, diagnosis and treatment), the nursing care plans addressing assessment, diagnosis, planning, implementation and evaluation (prompting staff to consider appropriate interventions), lesson plans, and electronic copies of the education program session materials.

### Data Analysis

Qualitative data (focus group notes) were transcribed. Transcripts were then summarised grouping similar themes. Quantitative audit data were summarised using descriptive statistics. All data gathered was de identified and entered onto a secure database by the project officer.

### Ethics

This quality improvement project was entered in the hospital's quality improvement register. As a quality improvement project with no experimental component, ethical approval was not required.

## FINDINGS

### Baseline Results

#### Audit

Thirty patients were included in the baseline audit. The group was high risk (with an average of 3.4 risk factors). Only one patient was 'low risk' (having less than three risk factors). One third of patients (n=10) were found, using the Confusion Assessment Method (CAM), to be suffering from delirium. Only half of these cases (n=5) were identified by the

medical team. Confusion was noted by nursing staff in twelve cases (including all of the 10 cases who had delirium). However data extracted by the medical records service identified only 0.17% of episodes of care in the previous twelve months as having a coded episode of delirium.

### **Staff Perception Survey (SPS)**

One hundred SPS questionnaires were distributed and 55 were returned. All disciplines recommended more effective communication (verbal and written) between members of the multidisciplinary team, and between the multidisciplinary team and families of patients. A need for more education of staff relating to all aspects of delirium was also consistently cited. The current ward equipment and environment (aesthetics) were perceived as not suitable for older people, with a recommendation to provide controlled walking areas to encourage regular and safe mobility (Department of Health 2008). Staff from all disciplines indicated that the number of older and acute cognitively impaired patients with confusion admitted under general medicine should be limited. Staff also often recommended greater involvement of families in care.

### **Focus Group**

Fifteen staff representing all major clinical disciplines participated in the baseline focus group. Staff cited a range of roles as important including core nursing functions such as personal care, monitoring, and administration of medications. They also recognised the need for holistic assessment (including assessment of baseline cognitive function) and prevention of functional decline by regular ambulation. Staff were sensitive to the need to maintain a calm environment, assess nutritional requirements, include family and/or carers in the planning of care, facilitate the patient's ability to communicate, orientate patients to their surroundings, pursue behavioural and non-pharmacological management interventions (e.g. to promote relaxation and sufficient sleep, which may be assisted by regular mobilisation, massage, encouraging wakefulness during the day), alleviate pain, and comprehensively plan discharge.

Thus the focus group discussion provided evidence that knowledge regarding care of a patient at risk of delirium, or with a diagnosis of delirium, was good. However staff did feel that resources (e.g. equipment) and support (e.g. hospital personnel) were poor. Participants reported a need for education especially in delirium related pharmacology and early recognition of delirium, including the risks, signs, and symptoms of delirium. Resources for behavioural management were highlighted as an area of need.

### **Evaluation of the Dementia Education Programme by participating staff**

Over the course of the project 40 people participated in session one and 41 in session two. Evaluations were very positive: with the large majority reporting that the session objectives (95%), standard of presentation (100%), and quality of information (100%) met or exceeded expectations. However, although knowledge responses improved, substantial room for improvement persisted. Correct answers increased from 23.3% in the pre-test to 50% after the education sessions.

### **Follow-up Results**

#### **Audit**

Thirty four patients were audited at follow up (three months post implementation). The prevalence of high risk patients (n=31; 86%) and of delirium (n=9; 25%) remained similar to the pre-intervention audit. Medical diagnosis of people with delirium was also similar (n=4; 44%), however use of the Mini Mental State Examination (MMSE) had increased (n=13, 36%, p=0.035). In addition, 34 randomly selected sets of patients' notes were audited over a four week period. Nurses noted confusion in 14 patients with doctors noting ten of the same patients as having confusion. However only four patients had an Abbreviated Mental Test.

applied by the nursing staff and five patients had the MMSE completed by medical staff. The standardised laminated nursing care plan for delirium prevention and care was located in all patients' files. All patients had between one and six prevention strategies implemented according to the care plan.

**Staff Perception Survey**

One hundred and nineteen follow up surveys were distributed, but the response rate for the follow up survey was only 21.8%. Overall, 63% of responses indicated they were unaware of the project tools referred to. Of respondents who had used the project tools, the majority (81%) responded they were effective/very effective.

**Focus Group**

Participants described the laminated bedside flow chart (with Abbreviated Mental Test, nursing care plan and prevention strategies), education sessions, and orange box (information and guideline) resources as very effective. However the majority of the participants were unaware of the patient/carer leaflet. Only about half of participants had used the practical resource boxes, but feedback from those who had used the rummage box endorsed it as very useful. Participants thought its utility could be further enhanced by providing an itemized list of contents, and also guidelines with suggestions for use of the items. Participants thought that electronic access to the project education program and tools would increase uptake.

**DISCUSSION**

The baseline audit confirmed clients on two acute care wards were almost universally at high risk of delirium. This may be generalisable to many acute care settings where older, frailer people are an increasing proportion of the inpatient population. In this context universal screening and implementation of ward based risk reduction strategies may often be indicated. The finding that nursing staff recognise patients with delirium as confused is consistent with the findings of other groups (Hare et al 2008), although it was not clear from our data to what extent these observations were recognised by the multi-disciplinary team. These data suggest that nursing staff should be a key target of educational interventions. The authors found the availability of local audit results to be very useful in engaging ward staff in the quality improvement process. It was possible to achieve a high degree of perceived

consensus regarding locally appropriate clinical pathways for delirium. This was contrary to concerns that staff may view regularly using standard tools to screen for delirium as adding to their work load and something they thus avoided.

The education program and resources provided were acceptable to the participants and perceived as useful. At baseline, survey open comments indicating a need to reduce or limit the number of confused patients admitted to the ward were notable. Similar comments were not provided in the follow-up survey, suggesting the project successfully improved staff confidence to care for acutely confused older people requiring admission. The project results seem to be generalisable to many acute hospitals. For example, there have been many requests for practical resource boxes from various areas of the hospital, and indeed other hospitals that became aware of the project. To achieve sustainability, practical resource rummage box contents have now been included as hospital stock items.

The hospital coding data were thought to indicate systemic problems with identification, recording or coding of delirium (rather than a true incidence of 0.17%). Thus monitoring coded episodes of delirium, attempting to detect falling incidence, was not undertaken. In contrast, this audit confirmed nurses recognise confusion. Furthermore, the survey and focus groups suggested nurses are well placed to implement prevention strategies, detect, and report early changes in cognitive function, and ameliorate delirium. While focus group volunteers had good knowledge levels and were enthusiastic regarding the project tools, knowledge among the broader ward staff (who participated in education sessions and completed pre-post session quizzes) seemed to be much lower. Although project tools tended to be endorsed as useful by focus group participants, followup audit confirmed that uptake was limited among the broader staff. At follow-up large numbers of staff remained unaware of the project materials. These results suggest a need for repeated action cycles of education and reflection by ward teams to achieve and sustain change. Senior ward staff

perceive high staff turnover as an important barrier to sustaining change, also emphasising the need for repeated action cycles.

Strengths of the project included the multiple sources of data, which make findings more reliable. For example, focus group and survey participation is likely to be affected by a volunteer bias, but interpretation of these results is aided by the audit which assessed actual practice. Another strength was adherence to hospital wide standards for development of educational programs and practice standards for nursing staff. This ensured the delirium education program was designed in a standard pedagogic framework and subjected to external evaluation. Limitations of the project were the short project time, preliminary nature of the work, and small sample size. For example, resources such as the practical resource rummage box warrant more detailed evaluation in their own right in larger, experimental samples.

## CONCLUSION

Delirium is common but under-recognised during acute hospital admission. In contrast, nursing staff do identify confused patients. Guidelines recommend clinical practice strategies to optimise prevention, early detection, and treatment of delirium, but there are barriers to their uptake. It is possible to engage ward teams in a quality improvement process, developing resources and providing education which is perceived by participants as useful. However sustaining change is difficult and is likely to require multiple action cycles.

Final revisions were made to project materials after the follow up audit, staff perception survey and focus group. In response to participant feedback the project resources were made available by the hospital intranet.

## RECOMMENDATIONS

Practitioners caring for acutely unwell older people should consider auditing their practice to determine the risk profile of clients. In high risk hospital populations a universal approach to delirium

screening and prevention may be justified. Local resources developed for this project such as rummage boxes are likely to also be useful in other sites. It is planned that the delirium education program will be repeated on a six monthly basis and delivered to all new staff in orientation by staff development nurses. Future work will implement the Delirium Education Program hospital-wide with a train-the-trainer day in which staff development nurses will be apprised of the education program, to enable its delivery on an ongoing basis. The education program will also be converted to a self learning format which can be accessed by the hospital intranet. The Nursing Practice Standard for Care of the Older Person with Delirium (based on best practice and evidence from the Delirium Project) will be implemented hospital wide. Ongoing education of junior medical staff will be provided at each orientation and the patient / carer information pamphlet is to be translated to other languages. The authors recommend other sites consider similar models to facilitate ongoing delivery and frequent reinforcement of education.

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# How useful is the expert practitioner role of the clinical nurse consultant to the generalist community nurse?

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## KEY WORDS

Clinical nurse specialist, community health nursing

## ABSTRACT

### Objective

The objective was to draw attention to the clinical component of the clinical nurse consultants' (CNC) role in the community.

### Design

Quasi-experimental research design that used descriptive statistics for data analysis.

### Setting

An urban community nursing organisation comprising six community nursing Centres within the northern part of a major Australian city.

### Subjects

A self selected sample of nine generalist community nurses (GCN) for a focus group. Information gained from this group informed the development of a questionnaire, which was sent to a convenience sample (n=125) of GCNs. Participation was voluntary and participants were not identified. Seventy eight questionnaires were returned within the specified time frame, providing a return rate of 62.4%.

### Results

Three main themes emerged:

- enabling the community nurses' role;
- accessing clinical knowledge\expert practitioner; and
- valuable resource.

The main reasons community nurses accessed CNCs were for clinical knowledge (73%) and problem solving (70%); the majority (82.9%) indicated visiting patient' homes with the CNCs was most useful.

### Conclusion

As the complexity of patients' needs at home increase, CNCs have taken on an integral clinical role within the organisation. The positive working relationship between the CNCs and GCNs presumably had enhanced patient outcomes and improved patient health status. A significant strength of the survey was the consistent responses in favour of CNCs working in the community with the GCNs. A limitation is that the response rate was small (n=78) and results cannot be generalised. Results of this survey could serve to inform future work force planning.

## INTRODUCTION

Management of illness in the home is the main focus of work of generalist community nurses (GCNs) employed by an organisation within the northern part of a major Australian city. Over the years, the complexity of patient care needs at home has increased with the introduction of innovative medical and nursing practices, for example peritoneal ports, pleural drainage, negative pressure wound closure systems and intravenous medications. It has also been recognised that an increasing number of patients living with cancer are requiring more complex care at home for longer periods (McKenzie et al 2007). Within the surveyed organisation, the clinical nurse specialist (CNS) positions are awarded on the basis of specialisation in community nursing generally, in contrast to community based CNSs in the United Kingdom (UK) who are specialists in a particular clinical field (McKenna et al 2003; Austin et al 2006). Therefore, in order to respond to the changes and challenges of providing high quality individualised patient care, the GCNs access Clinical Nurse Consultants (CNCs), who are the organisation's expert practitioners in the following areas: aged care and dementia, continence, oncology and palliative care, respiratory, spinal injuries, stomal therapy and wound management. The organisation is comprised of six Centres within the northern suburbs of a major Australian city. The Centres are geographically dispersed across 11 urban Local Government Areas within one New South Wales (NSW) Area Health Service. From January to December 2009, 7,756 patients received home nursing with a total of 127,612 hours of care provided.

Over ten years ago, a review of CNC positions within this organisation was undertaken (CNC Evaluation 1998). Since that time the CNCs have worked under a Performance Management Model. Under this model, individual CNCs negotiate an annual performance agreement, undertake six-monthly formal performance review and submit monthly reports to nurse management on work activities within five domains: clinical service and consultancy, clinical leadership, research, education and clinical service planning and management (NSW Department of Health Circular 2000/1).

It was apparent from the monthly reports that there are marked variances in levels of functioning within the domains. The majority of the CNCs' time is spent in one domain, that being clinical service and consultancy to GCNs, patients, their carers and other health professionals. In recognition of a focus on the CNC role within Area Health Services and acknowledging the increasing complexity of patient care needs in the home, a study was planned that would evaluate the GCNs' current experience of the CNC clinical role within their organisation.

## LITERATURE REVIEW

The role of the CNC in NSW can be aligned to that of the CNS in the United States of America and Queensland, Australia (Vaughan et al 2005) and the Advanced Practitioner in the United Kingdom (UK) (Abbot 2007; Carnwell 2003). Generally in the overseas literature, studies focus on defining the CNC role (Ball 2005) or scope of practice, either through personal experience (Jinks and Chalder 2007; Fairley and Closs 2006; Coster et al 2006), through other health professionals' perspective's (McIntosh and Tolson 2009; McSherry et al 2007; Skingley 2006) or through evaluation of patient experiences (Hekkink et al 2005), which is similar to the Australian literature (O'Connor 2007; Vaughan et al 2005). Within the Australian literature, the Report on Evaluation of Clinical Nurse/Midwifery Consultants Roles (Nursing and Midwifery Office 2007) is a comprehensive review. Despite its length, the report concluded that there were a number of aspects of the role that required further discussion.

In recent years there have been major policy changes in NSW Health which have impacted upon community health services (Kemp et al 2002). Restructuring, financial constraints and the limited availability of health professionals have been experienced, particularly in rural areas (Woodhouse 2009). Kemp et al (2005 p.307), identified that 'patients at home are increasingly receiving a shorter, more intensive clinically focussed service, then being discharged from care, rather than receiving a lower intensity, multiple problem, more holistic service over a longer period of time'. If NSW Health follows trends reported

in the UK, there will be an increasing emphasis on community based interventions and treatment of more people closer to home (Heath 2006). In addition, the shifting of tasks from hospital to community health care has been reported in a Norwegian study that found such a development led to considerable professional pressure on community health care service providers (Gjevjon and Helles 2010).

As community nurses' workloads increase with new and/or more complex work, the nurses may need to look for support from expert practitioners. Searching the Australian literature specifically on CNCs working with community nurses revealed limited results (Downie et al 2005; Jannings and Armitage 2001; Jannings and Maynard 1998).

## AIM

The aim of the study was to explore the perceptions and experiences of GCNs in relation to working with CNCs in the community setting. A questionnaire sought information from GCNs about their utilisation of the expert practitioners, reasons for use, difficulties experienced and their views of the CNC service.

## METHOD

A focus group was seen as an effective way of generating descriptive information. An expression of interest was distributed across the six Centres inviting GCNs to attend a focus group to discuss the CNC role for purposes of a forthcoming survey. Participants were assured their anonymity would be maintained through the use of an objective, external facilitator. This resulted in a self-selected sample of nine nurses who participated in a two hour focus group. Analysis of the facilitator's report informed the project team in formulating the ten point questionnaire. The self-administered questionnaire comprised both qualitative and quantitative questions.

Six GCNs undertook a pilot trial of the questionnaire. No problems with ambiguity or misunderstandings were noted; no changes were made.

A two week survey period was set and the surveys were distributed.

Quantitative data were collated, coded and analysed using the Statistical Package for the Social Sciences (SPSS 16.0). Frequency statistics were used to analyse survey responses.

Qualitative data analysis took the form of thematic analysis. Separately, the project team read the responses to become familiar with the data. The GCNs' own words were coded, similar meanings were labelled and codes were clustered into groups that shared similar themes. The team met to discuss the analysis and consensus was reached.

## Sample

Individually addressed questionnaires were posted to all eligible nurses (n=125), a convenience sample. Nursing Unit Managers (NUMs), acting NUMs, CNCs and any nurses on leave in the set period were excluded. A return addressed envelope and a cover sheet were attached to each questionnaire. The cover sheet explained the purpose of the study, who designed the questionnaire, that participation in the survey was voluntary and confidential and that participants responses would not be identifiable. A date was given for return of completed questionnaires.

## Ethics

The Chair of the local Area Health Service Human Research Ethics Committee reviewed the proposal and approved the study.

## FINDINGS

There was a 62.4% (n=78) response rate. Not all respondents answered every question. The unanswered (2.8%, n=22) questions were random, therefore the frequency results are presented with both the number and valid percentage of cases for each question.

## Quantitative findings

### **Designations of the GCNs:**

Sixty-one registered nurses (RN), nine CNSs and four endorsed enrolled nurses; four participants did not state their designation.

### **Accessing clinical and specialised / complex practice information:**

No nurse accessed from one source only, the highest percentage (92.3%) of GCNs accessed the CNCs - See table 1. As the GCNs' work changes, they may no longer be able to rely on existing knowledge and

experience. It would appear from the responses that GCNs are seeking out expert practitioners, talking to their peers and searching the electronic media for information to inform their own decision making in relation to patient treatment and care.

**Table 1: Source of information accessed by GCNs.**

Source	Number	% response	Source	Number	% response
CNC	72/78	92.3%	Intranet	19/78	24.4%
Other RNs	62/78	79.5%	Internet	17/78	21.8%
NUMs	56/78	71.8%	Preceptor	10/78	12.8%
CNS	49/78	68.2%	CIAP	9/78	11.5%
Community nursing service RN advisor	48/78	61.5%	Library	7/78	9%
GP	38/78	48.7%	Hospital team	4/78	5.1%
Nursing colleagues	29/78	37.2%			

### **GCN's views on CNC service:**

From responses received, 93.1% (n=67/74) of the nurses stated that the CNC service met their needs; seven stated that a problem had occurred when either the CNC had been on leave or that there had been too long a delay in CNC response. A problem of highly specialised nurses is that it may be hard to get the appropriate cover whilst on leave. Although sick leave is an unplanned absence, the nurses have managers who could be called upon for advice. Regarding annual leave, the CNC should ensure that Centre managers have their leave notification, contact names, and numbers of relieving CNCs if available.

### **Frequency of CNC usage:**

Consultation with CNCs ranged from 'a couple of times a year' to 'often daily'. The highest percentage (25.4%, n=18/71) accessed the CNCs four times per month. The mean was 7.5 times and median 4.0 times per month and demonstrated that the CNCs were well utilised.

### **Methods used to access a CNC:**

All GCNs had used more than one method - see table 2. Mobile phone was the most popular method (87.2%). It was noted that few nurses use email (2.6%) as most do not have email provided by the organisation.

**Table 2: Method used to access CNC.**

Method of access	Number	% response
Mobile phone	68/78	87.2%
Face-to-face	66/78	84.6%
Landline phone	54/78	69.2%
Message book	48/78	38.5%
Fax	21/78	26.9%
Email	2/78	2.6%

### **Influence of CNC office location:**

Some CNCs have offices at Centres, whilst others are non-Centre based. 62.3% (n=48/77) of GCNs stated that location did not influence their decision to contact the CNC and 37.7% (n=29/77) stated that it did. These results were surprising as each nurse is issued a mobile phone and has both fax and landline at their Centre offices and nurses can utilise these freely. Expert practitioners being highly visible makes a difference (Haycock-Stuart et al 2010), although travelling distances across the six Centres makes that option difficult.

### **Reasons for utilising the CNCs:**

The main reasons the GCNs accessed the CNCs were for clinical knowledge (73%) and problem solving (70.5%) - see table 3. "Other" reasons included 'complex patient care' and 'for competency testing'.

**Table 3: Reasons for utilising the CNCs.**

Reason	Number	% response
Clinical knowledge	57/78	73%
Problem solving	55/78	70.5%
Support	44/78	56.4%
Education	32/78	41%
Other	15/78	19.2%

**Usefulness of CNC clinical service**

A five point Likert Scale format was used to identify usefulness of the CNC clinical service across five categories - see table 4.

**Table 4: Usefulness of CNC clinical service.**

	Very useful	Somewhat useful	Neutral	Somewhat not useful	Not useful
Joint visits	82.9%	9.2%	3.9%	1.3%	2.6%
Trouble shooting	81.6%	13.2%	5.3%	-	-
Informal education	73.0%	20.3%	4.1%	1.4%	1.4%
Clinical decision making	69.7%	22.4%	7.9%	-	-
Formal education	66.2%	18.9%	10.8%	2.7%	1.4%

The quantitative data was further informed by the qualitative data.

**Qualitative findings**

From the GCNs views of this CNC clinical service, three strong themes emerged:

- enabling the community nurses' role;
- accessing clinical knowledge/ expert practitioner; and
- valuable resource.

Studies from the UK (Burt et al 2005; McIlpatrick and Curran 1999) and Australia (McKenzie et al 2007; Kemp et al 2005; Smith 2000) reveal that the work of the community nurse can be particularly complex and wide ranging. Amongst other avenues the GCNs had turned to the CNCs to utilise their expertise to inform their own practice:

*'we can't be specialised in everything which is why the CNC is such a useful resource'.*

Community nurses work in isolation, unlike the availability of the ever present nursing team in the hospital setting. Supporting the community nurse role and enabling graduate nurses and nurses new to community nursing demonstrates the CNCs' positive impact:

Of the five categories, 82.9% of GCNs (n=63/78) identified joint visits as the most useful. Joint visits involve the CNC going to the patient's home with the GCN to provide answers to specific questions, enhance skills and develop the GCNs' expertise. CNCs were recognised as trouble shooters (81.6%) and once called in can make the most of the opportunity by providing informal education (Jannings and Armitage 2001).

*'when I first started, the opportunity to speak with them about decisions I've made gave me comfort to deal with other patients'; and*

*'as a new grad I was reliant on the CNC to provide safe and best practice. I believe the care I give would be compromised if there was not the role of CNC'.*

Two nurses stated that CNCs should have no direct patient contact, as this 'could undermine confidence' and 'CNCs should only be available for consultation back at the office'. The role of the CNC in collaboration with the community nurse is to support and work alongside. It should not be the intention of a CNC to take over or undermine the nurse's credibility in the eyes of their patient (Jannings and Armitage 2001; Jannings and Maynard 1998).

The majority of the respondents though, welcomed and benefited from the CNCs joint visits to patient's homes, the community nurses can also learn tacitly:

*'joint visits provide practical support and advice that RNs may not at certain stages be able to provide, you can learn a lot from seeing them interacting with the patients'.*

When the GCNs are confronted with practice issues and needing to make sound decisions about the care they give to their patients, support is paramount:

*'community nurses need to feel supported in their role, having a specialist nurse to speak to when issues arise enables an RN to manage a difficult role with greater professional knowledge and skill'; and*

*'with their support, the anxiety and frustration experienced when dealing with complex issues is much relieved'.*

As their work is changing, GCNs need to employ best practice which will lead to better health outcomes for their patients. The CNCs can keep them up to date and engage them in evidenced based nursing as is their remit:

*'they assist me to provide quality and skilled patient care, some of my patients would be in dire circumstances if it weren't for CNC input'.*

#### **Additional information**

A range of barriers to accessing CNCs were identified which require attention. One participant noted 'patient resistance', another 'inapproachability', and one stated that they had felt 'bullied in another area' on one occasion.

The wound CNC was given as an example many times as thought to be 'too busy so I don't bother (to call)', 'CNC not always available when required' and was 'not able to attend joint visits as soon as I want'. Four GCNs requested a second wound specialist nurse. If a CNC's perceived busy workload prevents referrals then strategic planning is required to manage the situation. If a GCN fails to contact the CNC, the effect is felt threefold - the quality of patient care may not be optimal, the GCN misses assistance in executing the nursing process and the CNC needs to be utilised if he/she is to perform effectively (Jannings and Maynard 1998).

One nurse stated - 'CNCs should be full time including weekends'.

One nurse stated that the stoma CNC should be employed full-time; while another was unaware the

organisation employed a part-time stoma therapist, highlighting the need for a listing of available CNCs.

#### **Strengths and Limitations**

The survey did not evaluate CNC contribution on patient outcome, although the positive working relationship between CNCs and GCNs presumably enhanced patient outcomes and improved patient health status. The strength of the survey was the consistent responses in favour of CNCs working in the community with the nurses, but this may have been as a result of the survey design. The limitation of the survey was that the response rate was less than ideal (n=78), and the results cannot be generalised because it pertained to a particular group of CNCs. However, the findings presented in the paper will add to the community CNC practice literature.

A further option available for study would be CNCs working as expert practitioners within community services without the domiciliary nursing focus.

#### **DISCUSSION**

Generalist nurses 'have a broad knowledge base, and so their ability to keep abreast of the latest evidence in all areas of relevant practices maybe curtailed' (McKenna et al 2003 p.538). From the responses received, it would appear that the community nurses were aware of their limitations and had identified a wide range of avenues available to access information; the majority identified the CNCs as most utilised and useful.

CNCs are readily available and able to attend visits to patients' homes with the GCNs to educate, support and problem solve as required. According to the comments received, CNCs' clinical credibility was well recognised. In the McKenna et al paper (2003), deskilling, role conflict and confusion between specialist and generalist nurses had been noted in community settings, such concerns were not identified in this survey.

The identified enabling functions of the CNCs support previous findings of specialist nurses supporting generalist nurses in the community (Austin et al 2006;

McKenna et al 2003, Jannings and Armitage 2001; Jannings and Maynard 1998). The community based CNCs are the clinical leaders in their specialised fields (Haycock Stuart et al 2010). Their effect in this study as clinical leaders influencing and nurturing other nurses' replicates findings elsewhere (Jinks and Chalder 2007).

A large volume of the workload of the CNCs in this survey is taken up by clinical demands. Lack of time would be the main constraint in preventing the CNCs from expanding their roles. This survey identified that the GCNs require the support of expert practitioners, therefore if the argument arises that CNCs should focus more on management, education and research (all part of their remit), then the community CNS role will need to expand to provide this specialty expertise, as is described within the literature (McKenna et al 2003; Austin et al 2006).

## CONCLUSION

The results are based on a self-reported survey which captures experiences and perceptions from a small number of GCNs. The results cannot be generalised. Overall the survey demonstrated that the organisation's expert practitioners, the CNCs, were well utilised, respected, and viewed as supportive, effective resource persons by the community nurses. The CNCs' clinical service and consultancy provided the community nurses with appropriate support to meet new and complex nursing care challenges. Potential areas for further study were indicated, including CNC influence on patient outcomes.

As the complexity of patients' needs at home increase, CNCs have taken on an integral clinical role within the organisation. In the present era of Area Health Service budget restraints, results of this survey could serve to inform service planning and the future community health nursing work force.

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# What we learnt recruiting prenatal mothers to an RCT addressing the prevention of overweight in early childhood?

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## KEY WORDS

Recruitment, health promotion, survey, overweight, prenatal, randomised control trial

## ABSTRACT

### Objective

To identify and explore the experiences of recruiting prenatal women into a randomised control trial which involves a family-focused early intervention program addressing the prevention of overweight and obesity over the first two years of life.

### Design

A number of open-ended brainstorming sessions allowed the research nurses to self reflect on their recruitment experiences. These sessions were used to explore factors that impacted on recruitment.

### Setting

Recruitment for the trial took place in the antenatal clinics of two hospitals in south west Sydney (NSW Australia) from March 2007 - March 2008 one of the most socially and economically disadvantaged areas of Sydney.

### Main Outcome measures

To gain insight into the issues surrounding recruitment of prenatal women and to identify the main themes that facilitated or impeded recruitment.

### Results

Findings suggested that recruitment to a randomised control trial in the prenatal period resulted in particular barriers. Three theme clusters were identified; engaging participants, content of informational material and organisational issues.

### Conclusion

Fostering stronger communication between research staff and clinical staff would have enabled easier identification of the target group and having access to the target population at earlier stages of pregnancy would have been beneficial.

### Recommendation

Having a rigorous recruitment plan, and evaluating recruitment strategies in future studies of this nature, would be central to understanding why prenatal women involve themselves in research trials. Obtaining the assistance of clinical and administration staff with recruitment strategies would also be strongly recommended.

## BACKGROUND

It is well documented that in nursing research it is difficult to recruit participants for randomised controlled trials. Many fail to achieve adequate sample sizes within the specified time frame and have to extend recruitment periods. (Newal et al 2009; Toohar et al 2008; Wilson and Rose 1998). This scheduling problem leads to budget problems, the possibility of inadequate sample sizes leading to low statistical power and extensions to the intervention phase of the program. (Toerien et al 2009; Toohar et al 2008; McDonald et al 2006; Watson and Torgerson 2006) Healthy Beginnings, (Wen et al 2007) a randomised control trial (RCT) conducted in south west Sydney was no exception. The time required for recruitment was estimated as six months based on a pilot study, which had to be extended a further six months.

The Healthy Beginnings Trial (HBT), funded by the National Health and Medical Research Council (NHMRC #393112) involves a family-focused early intervention program addressing the prevention of overweight and obesity in early childhood. The study aims to explore the effectiveness of trained nurses delivering an intensive, home-based program for first time mothers of newborn babies, focusing on child and family eating patterns, television viewing, opportunities for physical activity and anthropometric measures. The HBT has been carried out in the most socially and economically disadvantaged areas of Sydney.

This paper explores what was learnt from the recruitment phase of the HBT.

### The HBT recruitment

Recruitment for the trial took place in the antenatal clinics of two hospitals in south west Sydney (NSW Australia) from March 2007 - March 2008. Ethics approval was obtained from the Ethics Committee of Sydney South West Area Health Service. Prior to recruitment, Principal Investigators held meetings with Directors and Nurse Unit Managers where study aims and the recruitment process were discussed. Research nurses employed to undertake

the intervention phase of the program commenced recruitment of participants for the first two months and were then joined by research assistants.

Face to face recruiting was selected for this RCT as it was considered the most effective way of explaining the program, building rapport with the potential participants and getting informed consent. Informed consent must be voluntary, and participants must have adequate information to make a decision on whether to take part or not, and be aware of the implications of participating. (NHMRC 2007) The aim of the informed consent procedure was to ensure a mutual understanding of what was involved, the benefits and mutual expectations.

First-time mothers were approached in antenatal clinics, informed of the project, and asked if they would like to participate. All aspects of the program were explained and women received an information sheet outlining the study and ethical components. There was an opportunity to ask questions, participants were made aware the program was voluntary, they could drop out at anytime and all information was treated confidentially. If they agreed to take part, a consent form was signed for participation in the study for a two year period, home visits, randomisation, data collection and intervention. Posters and flyers were also used to promote the project and assist in recruitment.

Following the first six months of recruitment the number of participants was half the target number, and the project directors decided to extend the recruitment phase for a further six months. Following the first two months of recruitment additional strategies were introduced including recruitment from smaller outreach clinics, posters in waiting rooms of pathology and ultrasound departments and discussions with the Division of General Practice to assist with recruitment through doctor's surgeries.

### Method of this study

As the HBT did not intend to directly evaluate recruitment methods or reasons participants declined to be involved, a descriptive approach was used to explore what was learnt from the recruitment

phase of the HBT. Open ended reflection sessions led by Principal Investigators were held with the research nurses. Open-ended brainstorming sessions, where the research nurses self-reflect on their recruitment experiences, were used to explore factors that facilitated or impeded recruitment. Once a long list of factors, issues, and specific cases was developed, recurrent themes were generated. There were three recurrent themes that emerged including engaging participants, content of informational material and organisational issues.

### **Engaging Participants**

Recruiters found face to face recruiting challenging for two key reasons. Firstly the RCT needed first time mothers and it was difficult to identify this population as the waiting area catered for a number of different clinics. All women in the clinic waiting area were approached, which as well as being a slow process, led to some people being asked if they were pregnant with their first child when they were there for another reason. It was also difficult to remember who had been previously approached, which meant that some mothers who had already declined to be involved were asked to participate again.

Secondly the diverse, cultural, educational and socio-economic backgrounds of potential participants at the clinic proved time consuming as each part of the program was explained in different ways to different people to ensure understanding. Potential participants were also wary of the length of the study, being involved with research and anticipated future constraints with their employment.

### **Material/Content**

Although the information sheet was written as simply as possible, a number of mothers found it confusing and difficult to understand. A flyer giving basic information and showing pictures of the gifts was put up around the clinics. This was used in conjunction with the information sheet and assisted with understanding the study.

### **Organisational Issues**

Initial recruitment took place in busy outpatient clinics of two hospitals in Sydney south west. The number of waiting rooms varied and often multiple

clinics were running consecutively. This became difficult in approaching potential participants as recruiting staff could not always assume all women were expecting a baby, particularly as there was no access to medical files.

The environment of the clinics varied in comfort, layout and atmosphere. Maintaining privacy was an issue as the project was discussed with the potential client in the waiting area within close proximity to other people.

Although staff were aware of the HBT RCT and permission had been given to recruit from the antenatal clinics, the demanding nature of the clinics in hospital settings and the lack of time for clinic staff to assist with something outside of their primary role had a negative impact on recruitment.

## **DISCUSSION**

### **Engaging Participants**

Once a potential participant was identified as being part of the target group for the RCT a number of factors impacted on successful recruitment. Special considerations involving pregnant women in studies were taken into account. They may feel a protective duty to their baby and decline to participate, while others consider the baby's father in all decisions involving the pregnancy (Mohanna and Tunna 1999). Cultural practices can also influence participation (Gul and Ali 2010). A number of women from culturally and linguistically diverse backgrounds that were approached by the research nurses were told by their partners they could not participate. If the partner was not in attendance they often asked if they could return the consent by mail after discussing the program at home, and discussion with the partner or the change in context when back at home tended to reduce participation from this subgroup.

Potential participants came from diverse backgrounds so face to face recruiting enabled the approach to be adapted to individual respondents. This was important when explaining a Randomised Control Trial. Although potential participants may understand research they do not always understand the need for randomisation, (Tooher et al 2008) therefore it

was important for recruiting staff to mention that both groups would assist the mother in raising their first child.

Client attitudes were also a challenge to recruitment. A sceptical belief in research (Tooher et al 2008; Gates et al 2004) along with the negative representation by the media plays a role and will often increase the difficulty of recruitment to a research project. Recruiters felt a number of women with a negative attitude towards participation displayed distrust in research and the workings of the health service in general.

The lack of interest in the dynamics of the study and time management issues can also contribute to potential study participants disinterest (Gul and Ali 2010). This was no different for Healthy Beginnings where potential participants were asked to be part of the study for two to two and a half years. The recruiters stated refusals included issues with busy lives, people couldn't be bothered with research, or they were going back to work soon after baby's birth.

The Sydney south west area includes a number of suburbs with socioeconomic disadvantage and although recruiters were unaware of each potential participant's demographic, a number of refusals could have been related to factors impacting on this as evidence suggests age, income and education and higher rates of refusal are found in participants with low income, low education and health awareness (Gul and Ali 2010).

#### **Material/Content**

An information sheet for participants outlining the study and ethical requirements is a necessary component for recruiting to Randomised Control Trials. It is given to the mothers so they are aware of the ethical requirements of the project. Readability of the information, educational levels of the participants and previous experiences with the health service can all play a role in signing a consent (Steinke 2004). As the geographical area and socioeconomic backgrounds of the participants was so diverse the research nurses found the terminology difficult

for some potential participants to understand and therefore not very useful. The use of colourful flyers, samples of the gifts and resources may have been more beneficial at the recruitment stage.

#### **Organisational Issues**

Diverse outpatient clinics made identification of antenatal clients difficult; this alongside identifying the target population of first time antenatal mothers was a major difficulty for recruitment staff. Access to clinical records would have been beneficial for a number of reasons including identification of the target population and placement of an information flyer for the potential participant. Knowing the number of clients for each clinic may also have enabled the recruiter to better manage their time.

For some potential clients discussing the RCT in a crowded waiting area was an issue as it was difficult to maintain privacy. In a number of cases the response of the participant appeared to have an effect on those around them. If they responded favourably the recruiter found others would respond this way. It also had the same effect if there was a negative response. One recruiter felt the best way around this was to speak to all the people in the waiting room about the program and then approach people individually. While other recruiters felt a small room or private space may have assisted with recruitment.

Although staff were aware of the RCT and permission had been given to recruit from the antenatal clinics the demanding nature of the clinics in hospital settings and the lack of time for clinical staff to assist with something outside of their primary role had no impact on recruitment. Support for recruitment in smaller outlying clinics was more encouraging. These clinics were less busy and staff would identify first time mothers. Recruiting staff were able to approach the correct target group, use their name and this often led to a successful outcome.

#### **CONCLUSION**

Clearly clinician's perception of the study, busy work schedules and understaffing (Gates et al 2004) impacted on assistance with recruiting. Although Principal Investigators engaged Directors and Nurse

Unit managers prior to the commencement of the study ongoing updates and discussions regarding recruitment would have been beneficial with staff working in the recruitment areas. As well as providing an insight into the challenges faced by staff it would have provided an opportunity to foster stronger communication between research staff and clinical staff.

Accessing the target population when they book into the hospital would have enabled all first time prenatal clients to be identified. Gaining the support of administration staff at the hospital of delivery to give all first time mothers an information package about the study would have assisted the recruiters in the antenatal clinics. This strategy may also have worked with the Division of General Practice. Although the Division of General Practice for one area was approached with assistance to recruit from GP surgeries this was done later in the recruitment phase and had very little impact on recruitment numbers.

## RECOMMENDATION

It is hard to say that changes to recruitment would have influenced the time frame to recruit adequate numbers into this trial. Future studies of this nature should evaluate recruitment strategies as this is an important aspect of any trial. A more rigorous recruitment plan may have identified issues prior to the commencement of the study.

A key recommendation for further studies in this area would be to obtain the assistance of clinical and administration staff with recruitment strategies. It may take a shift in the thinking of clinicians and administration to incorporate assistance with research into their schedules and this change may need to be made at a higher organisational level.

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# Living with chronic obstructive pulmonary disease: a qualitative study

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## KEY WORDS

Chronic obstructive pulmonary disease, qualitative study.

## ABSTRACT

### Objective

The purpose of this study is to explore the experience of living with chronic obstructive pulmonary disease, with the aim of gaining an understanding of how the disease affects the patients' lives.

### Design

This study is a phenomenological study.

### Setting

The study was conducted in Atatürk University chest service.

### Subjects

The study consisted of 14 participants who had, had chronic obstructive pulmonary disease (COPD) for at least one year. The participants ranged from 55-81 years of age.

### Results

Breathlessness was identified as the most troublesome symptom leading to panic and fear. Participants also described a feeling of frustration and loss of social activity. This also resulted in loss of roles and led to emotional trauma.

### Conclusion

This study provided valuable insights into how patients view the overall impact and their subsequent degree of coping with COPD from day to day.

## INTRODUCTION

COPD is a chronic, complex, and incurable condition. It may result in declining pulmonary function, decreasing physical ability and loss of health related quality of life accompanied by symptoms such as anxiety, depression, fear, and fatigue. It is a major cause of morbidity and mortality and is currently ranked as the fourth leading cause of death in the world (Pauwels et al 2000; Downs and Appel 2007). Prevalence rates are estimated to be 24 million people in America, 2.7 million people in Germany, 300,000 people in Australian, 200,000 people in New Zealand, three million people in the United Kingdom, 1.5 million people in Spain and 2.6 million people each in Italy and France (Stang et al 2000, <http://www.goldcopd.org/Guidelineitem.asp?I1=2andI2=1andIntId=989>). These prevalence rates are thought to underestimate the true prevalence of COPD as many people are not diagnosed with the condition until they become symptomatic (Cross 2005; GOLD 2006).

Several problems are encountered when defining COPD. The first relates to the term chronic obstructive pulmonary disease because this is not truly a disease but a constellation of diseases. According to the Global Initiative for Chronic Obstructive Lung Disease (GOLD) program, COPD is defined as a disease characterized by airflow limitation that is not fully reversible (Pauwels et al 2001). The airflow limitation is usually progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases. Traditionally, COPD has been divided into several pathophysiologic entities, each sharing the common physiologic features of airflow obstruction and abnormal inflammatory response. These groups include chronic bronchitis, emphysema, asthma, and bronchiectasis (McCorry et al 2001). The GOLD program standardizes the term COPD by incorporating each entity into the diagnosis of COPD. Additionally, clinicians may experience difficulty in differentiating COPD from asthma, particularly the syndrome of poorly reversible airway obstruction in older patients with chronic asthma (D'Alonzo 2004).

COPD is as a result of a wide variety of environmental, behavioural, and genetic conditions. Approximately 85-90% of all cases of COPD arise from cigarette smoking, with the remaining 10-15% arising from passive smoking, occupational exposure, air pollution, genetic disturbances, progressive and possibly hyper responsive airways (Tzortzaki et al 2005; Downs and Appel 2007). It is considered to be a chronic and not fully reversible disease; thus, treatment is aimed at providing symptom control, supportive care and assistance in disease self-management. The goal of treatment is not to cure the disease, rather, it is to palliate symptoms, maintain physical functioning, and prevent further disability, as well as to decrease unplanned hospital visits and, thus improve health related quality of life (Bourbeau et al 2003; Monninkhof et al 2004; Linnell 2005; Chen et al 2008).

COPD patients must cope with psychosocial changes and functional limitations. The devastating effect of COPD can include a lack of control over daily life activities, restrictions on recreational and social activities, and encounter early retirement, financial stress, role alterations, disruptions in family life, altered self-image, loss of independence, and decreased self-esteem (Kinsman et al 1983; McSweeney et al 1982; Pirgatanio et al 1984; Schier et al 1990; Smeltzer and Bare, 2000; Weillitz and Sciver, 1996; Williams and Bury, 1989).

The aim of this study was to explore the experiences of patients with COPD in order to gain an understanding of how the disease had affected them and the ways in which they integrated the illness into their lives in Turkey.

## METHOD

A qualitative and descriptive design was adopted. In-depth interviews were used to collect the data.

### Design

This study is a phenomenological study. Data were collected in 2008. The first author conducted semi-structured and face-to-face interviews. The interview questions focused on the effect of COPD on everyday activities and relationships, the



emotional feelings associated with the disease and the participants' experiences with dyspnoea. The interviews were conducted in a University chest service. Each interview took between 20-40 minutes and was tape-recorded. After the interviews, the tapes were transcribed by the first author. Interview tapes and transcripts were de-identified in order to ensure participant confidentiality.

### Data analysis

Data were transcribed and analysed using the seven steps outlined in Colaizzi's (1978) method:

1. Reading the transcripts to develop an understanding of what the participants meant;
2. Extracting significant phrases and statements that are meaningful to the experience of living with COPD;
3. Formulating meanings for each significant phrase and statement;
4. Organising the meanings from each interview into themes;
5. Validating themes by comparing them with the participants' original descriptions and incorporating them into the original text;
6. Developing an exhaustive description of the themes; and
7. Verifying with participants that the researchers' conclusions were in agreement with their descriptions.

### Setting and sample

The sample consisted of 14 participants who had had been formally diagnosed COPD for at least one year. According to the GOLD (2009) classification of COPD (table 1), three participants were in the mild stage, seven in the moderate stage, three in the severe stage and one in the very severe stage.

Three women and eleven men participated in the study. All of the participants were taking bronchodilators, mucomyst and antibiotics. The age range of participants was 55-81 years old with a mean of 67 years. Twelve of the participants were married, two were widowed. All had informal support from their families and friends.

**Table 1: Spirometric classification of chronic obstructive pulmonary disease.**

Severity	Characterised by airflow limitation
Mild	FEV <sub>1</sub> /FVC <0.70, FEV <sub>1</sub> 80% predicted
Moderate	FEV <sub>1</sub> /FVC <0.70, 50% FEV <sub>1</sub> <80% predicted
Severe	FEV <sub>1</sub> /FVC <0.70, 30% FEV <sub>1</sub> <50% predicted
Very severe	FEV <sub>1</sub> /FVC <0.70, FEV <sub>1</sub> <30% predicted or FEV <sub>1</sub> <50% predicted plus chronic respiratory failure

FEV<sub>1</sub>, forced expiratory volume in 1 second; FVC, forced vital capacity (GOLD 2009).

### FINDINGS

The participants gave vivid descriptions of their lives with COPD and how the illness influenced every aspect of their daily activities. Three themes were identified: symptoms control, functional disabilities, emotional trauma.

#### Symptoms Control

The symptoms which all study participants complained about most were: dyspnoea, coughing, and phlegm. Dyspnoea causes patients with COPD to experience intense fear, change in priorities, increase in the addiction status and intense anxiety.

Patient no 3: *The worst thing is, probably, not being able to breathe. When I'm unable to breathe, I think I will definitely die.*

Patient no 12: *I postpone everything to prevent gasping for breath. Housework, cooking, going out...*

Patient no 5: *When I'm out of breath, I think I will die at that moment. It is very difficult to experience this continuously. Before, I used to force myself too much and panic. This caused me to be more out of breath.*

Patient no 8: *To avoid gasping while I am doing housework, I try doing the work without bending down to the floor as much as possible.*

Patient no 14: *They taught me lip breathing (pursed lip breathing) in order to breathe more easily. I am using these (pursed lip breathing and diaphragm breathing). But I don't think they are useful.*

Patient no 13: *I can't possibly tell how inhaler drugs comfort me. They didn't use to work at all when I first used them, or I was not using them correctly but now, I never leave without them.*

Patient no 4: *I am always coughing. I am using antitussives but my cough doesn't stop.*

Patient no 12: *Sometimes I expectorate while coughing. It's awful to cough continuously and expectorate in public. I'm making everyone sick. I'm aware of this. My wife and daughters got used to this but expectorating in front of my relatives and neighbours embarrasses me.*

Most of the patients who participated in this study (nine patients) had an unplanned admission to the hospital for an exacerbation of their COPD symptoms, with a hospitalisation period of one to three months.

It was determined the patients tried to use drugs regularly and learned pursed lip breathing and effective coughing techniques mostly with their personal experiences. However, it was found they did not exercise and used diaphragm, pursed lipped breathing.

Patient no 4: *It appears that I was not using my breathing drugs (inhaler drugs) correctly. I used to inhale its (drugs) but no air would come in. I learned how to use them later. I am not literate, so, they explained it to me at the hospital.*

Patient no 1: *I am trying to breathe by pursing my lips. I was given a booklet at the hospital. I had learned from that booklet. However, I don't know anything else to relieve my breath.*

Patient no 7: *Never mind about the drugs my friend, they are not working. Who can tell these (effective breathing techniques) would work...*

### **Functional disabilities**

COPD patients stated they experienced a loss of function and as a result, their life-styles changed and life standards decreased. They expressed the difficulties of being dependent on somebody else.

Patient no 6: *I can manage none of my works. I'm always asking for help from my spouse. She is also*

*elderly. They are difficult for her as well. There is nobody else at home with us...*

Patient no 4: *I can't manage long walks. Especially when I climb uphill, my breathe gasps. If the weather is fine or if I'm going somewhere near or downhill, I walk. Even my five year old grandchild walks faster than me, and says "Come on grandpa, how slowly you're walking".*

Patient no 13: *Winter months last long here. That's why I always have to stay at home. Our house is stove-heated. Living in a stove-heated place is not good for my disease. I know this. I am financially incapable of moving to a centrally heated place. Thus, I always feel unwell and stay in hospital in winter.*

Most of the patients complained about not being able to fulfil their roles and their changed roles.

Patient no 11: *Sometimes even cooking at home happens to be difficult. The steam and scent of the meal irritate me when I put two or three pans of meal on the fire and start cooking. Therefore I sometimes ask for my daughter's help for cooking.*

Patient no 8: *Even taking a bath alone at home becomes difficult. I am having difficulty when I raise my hands up to wash my hair. I rapidly wash up and get out of the bathroom. Sometimes my daughter washes me. The steam in the bathroom irritates me. Therefore, I always leave the bathroom door open. Or I become out of breath.*

Patient no 1: *I used to run a tea shop. I was earning some money though it was a small amount. Then, after I caught this disease, I became unable to run it. There was a lot of smoking in the tea-shop. I was always coughing and becoming out of breath. My doctor had told me that already. For this reason, I sublet my shop. We moved in my son's house. Now, my son is looking after us.*

### **Emotional trauma**

Most of the patients feel uncomfortable about being dependent on their relatives because of the symptoms of COPD. They also stated they could not be in crowded places and so they postpone their social lives.

Patient no 11: *I am fed up with asking for help from others. I am continuously asking for help from my spouse, my daughter, my son, even from my grandchild. Though they are my very close relatives, I feel myself miserable. They (the relatives) do not mind helping me. But I guess, after some time, I'm going to be a burden on them.*

Patient no 3: *All of my friends are retired, like me, and we usually come together in a coffee house. I used to enjoy chatting, drinking tea, and smoking together with them. After I caught this disease, I kept going there for some time. However, after a while, I could not stay in there (the coffee house) for there were lots of people smoking. My friends are still gathering in the coffee house. They used to come to visit me often in the beginning, but they are not coming any more. I was so upset about this at the beginning, but then I got used to the loneliness.*

Patient no 2: *Being dependent on somebody used to make me upset in the beginning. Sometimes, although I was forcing myself to the limits not to ask for help, I was trying to manage my own work. But now, both me and people around me got accustomed to this disease.*

Patient no 12: *We have a very big family. We always used to see my relatives, but I can't visit them now, like I used to before, I can't get into crowded places. What should I do, I can't help it...*

## DISCUSSION

The findings of this study suggest living with COPD is a complex and dynamic experience. The impact of dyspnoea was significant and invaded almost every aspect of participants' lives. Participants made changes in activities due to shortness of breath, and this is similar to findings in other studies (Jonsdottir 1998; Russell 1998; O'Neill 2002; Cicutto et al 2004).

The phrase 'living with COPD' may be synonymous with living with dyspnoea, particularly during the severe stage of the disease. Many participants described them as frightening experiences, which were associated with fear of choking, suffocation,

and death. Successful techniques for dyspnoea management in this study and others (O'Neill 2002; Cicutto et al 2004) included using inhalers and concentrating on breathing slowly and not panicking. Participants adopted strategies that they had tested by trial and error. This involved pacing activities and learning to conserve energy and adapt daily tasks such as sitting down to complete tasks in the kitchen, washing, and dressing.

Chronic illness places considerable burden on patients, spouses and other family members. Because of the illness, roles within the family alter which may cause difficulties and affect the harmony of relationships within the family. These changing roles and circumstances may result in miscommunication within the family or even conflict (Rabinowitz and Florian 1992). In this study most participants felt their family and friends understood their condition and limitations. Leidy and Haase (1999) characterised some of their participants with COPD as struggling to maintain a sense of personal integrity, with feelings of decreasing effectiveness and connectedness with others. The importance of sufficient formal and informal resources, particularly in support from family and friends, to manage COPD has also been noted by others (Cicutto et al 2004).

Emotions ranging from irritation to depression were found in the study. Williams (1993) also noted feelings of frustration and depression were common among those with COPD. Kara and Mirici (2004) also found reactions to COPD included depression. Although depression was not mentioned frequently in this present investigation, some participants described a feeling of 'down' or 'low'. Moreover, the emotional ups and downs they described were frequently associated with their physical ups and downs. Themes that included both physical and emotional aspects of COPD were identified in several other qualitative studies (O'Neill 2002; Robinson 2005). Feeling poor emotionally was frequently linked to feeling poor physically, with each contributing to the other. This suggests living with COPD is characterised by the interaction between physical and psychological factors.

## STUDY LIMITATIONS

The sample size for this study was small but, because this was a qualitative study, it provided rich data and a culturally sensitive perspective on COPD embedded in Turkish culture. However, theme saturation was achieved and the usefulness of the data is a more important concern than the generalisability of the findings.

## CONCLUSION

The use of phenomenology as a research methodology fulfilled the aim of gaining a greater understanding of the experience of living with COPD. It provided valuable insights into how patients viewed the overall impact and their subsequent degree of coping with COPD in daily life. Undoubtedly, this condition has detrimental effects on participants' daily lives and cause disability. Actively listening to patient's individual accounts is a very important process in developing the services for patients with COPD. Further consideration of the themes discussed in this study may help healthcare professionals to increase their field of knowledge about their patients and add breadth and depth to their body of knowledge on this subject. This increased understanding will enable professionals to select strategies that will enhance patient care and their management and promote the best quality of life possible within the limits set by individual capabilities.

When dyspnoea occurs, patients with COPD will first choose to rest and reduce activity. However, as the disease progresses, the patient will experience dyspnoea at rest. This will cause the patient to become increasingly immobile, resulting in decreased ability to exercise, social isolation and lowered mood states (GOLD 2006). To reduce the frequency and severity of breathlessness, healthcare professionals should teach patients, as soon as possible, controlled breathing, self-medication adjustment and interacting appropriately with healthcare providers (Gosselink 2003; Maher and Hemming 2005).

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# Behind barriers: patients' perceptions of source isolation for Methicillin resistant *Staphylococcus aureus* (MRSA)

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## KEY WORDS

MRSA, isolation, qualitative research, acute care

## ABSTRACT

### Objective

To explore the lived experience of patients in MRSA isolation in an acute care hospital in New Zealand.

### Design

Interpretive phenomenology.

### Setting

Acute care hospital in New Zealand.

### Participants

A purposive sample of ten adult patients with MRSA infection and under isolation precautions for more than three days.

### Results

The majority of participants found some positive aspect of being accommodated in a single room; however, the overall experience of MRSA isolation was viewed as a negative one. 'Being MRSA positive', 'Being with others'; and 'Living within four walls' were the major themes associated with participants' experience. The central characterisation of their experience, 'Behind barriers', suggested that for these patients MRSA isolation imposes barriers to the expression of own identity and normal interpersonal relationships, and impacts on the delivery of quality care.

### Conclusion

Source isolation for MRSA influences the quality of care and in particular the opportunity for emotional support. Consideration must be given to the design of the isolation environs and staff must be equipped with adequate infection control knowledge to ameliorate and inform patients and their families of the effects of isolation.

## INTRODUCTION

Preventing healthcare-associated infections is a major focus of contemporary quality and safety in healthcare. The transmission of healthcare associated infections such as Methicillin-resistant *Staphylococcus aureus* (MRSA) is a global problem (Woodford and Livermore 2009). The complications of MRSA infection, including increased morbidity and mortality, increased healthcare costs, and prolonged hospitalisation are well documented. Consequently, efforts must be made by health professionals to limit the spread of MRSA (Humphreys 2007).

The prevention and control of MRSA requires Standard and Transmission-based Precautions, including hand hygiene, use of personal protective equipment such as gloves and gowns, surveillance, antibiotic stewardship and appropriate contact precautions (NHMRC 2010; Coia et al 2006). Patients are accommodated in single rooms or cohorted in multi-bed rooms with other MRSA-colonised patients and restrictions are placed on the access and egress. These practices are key elements of the practice of source isolation and are essential in the control and prevention of MRSA (Clock et al 2009; Bissett 2005; van Gemert-Pijnen et al 2005).

Although essential, the use of source isolation and contact precautions for MRSA infection is problematic and can have unintended consequences, particularly for the patient's psychological welfare. A range of negative psychological and physiological effects as a consequence of source isolation have been reported, including psychological stress (Denton 1986), abnormal sensations and symptoms (Kennedy and Hamilton 1997), loneliness, anger, neglect, abandonment, boredom and stigmatisation (Knowles 1993, Rees et al 2000, Ward 2000). Recently, Coia and colleagues have argued that although transmission-based precautions (including source isolation) are necessary for preventing the transmission of MRSA, "the patient's medical and psychological welfare should not be compromised by unnecessarily restrictive infection control practices" (2006 p.S26).

HCWs have a professional duty of care to the individual patient to address not only their physical needs but also any psycho-social problems arising from their MRSA isolation. To date there is limited research that examines the experience of isolation with respect to MRSA.

### Study Aim

This study explored the lived experience of MRSA isolation in hospitalised patients in an acute care setting of a large New Zealand hospital, and the meaning those patients made of those experiences.

### Methodology

Qualitative research methods are useful for gaining an insider's view of a human experience—understanding a phenomenon from the patient's point of view (Morse and Field 1996). Phenomenological inquiry is concerned with interpreting experience in the context of a person's life-world. The study adopted an interpretive phenomenological approach, informed by the philosophical hermeneutic tenets of Heidegger (1927/1962). Human research ethics approvals were obtained from Griffith University and the participating hospital.

### Participants and Setting

A purposive sample of ten adults (see table 1) under isolation and contact precautions for MRSA infection for three days or more from various wards in a large acute care hospital in the North Island of New Zealand were recruited to the study. Clinical nurse managers identified and recruited potential participants

### Data Collection

Data were collected using individual, semi-structured interviews that were on average 30 minutes long. A funneling interview technique (Grbich 1999) was used such that the interviews began by asking each participant to describe the experience of being in MRSA isolation. Narrower questions were used to guide the interview to keep the focus on the main themes of the topic, or to elicit more information from the participant as required. An example of this type question used was, 'what were your feelings when staff wore gowns and gloves to provide care?' The audio-taped interviews were transcribed verbatim and verified by participants.

Table 1: Participants demographic information.

Participant	Gender / Age	Reason for Admission	Type of Ward	Isolation History	
				Previous	Current
(Anne)	F / 74	Cellulitis	Orthopedic surgery	Yes	14 days
(Barbara)	F / 69	Cellulitis	General surgery	Yes	17 days
(Charles)	M / 78	Non-healing leg ulcer	Vascular surgery	Yes	3 days
(Diane)	F / 46	Malignancy	Oncology	No	5 days
(Eileen)	F / 66	Renal failure	Outpatient dialysis unit	Yes	3 x a week
(Fred)	M / 78	Bowel investigations	Medical	No	7 days
(George)	M / 49	35% burns	Plastic surgery	No	6 days
(Harry)	M / 49	Cellulitis, anal abscess	Medical	Yes	3 days
(Ivan)	M / 54	Septicemia, leukemia	Hematology	Yes	7 days
(Joan)	F / 72	CVA	Rehabilitation	No	21 days

### Data Analysis

Data analysis was guided by the approach suggested by van Manen (1997). Initially, each interview was individually analysed for meaningful words, phrases and sentences and a brief summary was made of each one. Common meanings that were linked were then grouped into themes. Themes were checked with members for credibility and trustworthiness.

### Findings

For the participants in this study, the experience of MRSA isolation was associated with barriers to their care in hospital, termed being 'Behind Barriers', which comprised three key themes. These themes - 'Being MRSA positive', 'Being with Others', and 'Living within four walls' and their related subthemes are illustrated in table 2.

Table 2: Themes and sub themes of the lived experience of being in MRSA isolation.

Themes	Sub-themes
Being MRSA positive	Stigma Emotional effects Knowledge
Being with others	Socialising Concern for others Staff relations
Living within four walls	Imprisonment A room with a view

### Theme 1: Being MRSA positive

Participants in this study had a strong identity of 'Being MRSA positive', which encapsulates important issues relating to stigma.

### Stigma

A prominent feature of the identity 'Being MRSA positive' was stigmatisation. For some stigmatisation was caused by specific isolation practices, such as the use of gowns and gloves worn by staff caring for them. As Harry described:

*"It feels like that you are contaminated... To see them dressed in protective gear, you feel downgraded."*

Such practices led to the participants feeling infectious or contagious, and several used the word 'leper' when describing themselves. Inter-connected with this stigmatisation were the emotional effects of the isolation practice.

### Emotional effects

Participants associated being in isolation because they were MRSA positive with a variety of emotions including fear, anger, frustration and guilt.

*"...Well when I first heard about it I thought, oh no, not something else, you know. I have had enough to put up with." (Ivan)*

*"I am thinking .... if there was care taken initially, maybe I wouldn't have MRSA because after all I did pick it up here and I feel a little bit hard done by." (George)*

However, some participants, namely those who were older and with a previous experience with MRSA, were more accepting of their situation, bringing with them a fore-structure of understanding that helped them cope with being MRSA positive.



*"Oh well, I said, if it's got to be, it's got to be... This is something you got to put up with I suppose."  
(Ivan)*

Some participants expressed concerns about being MRSA positive and what that meant for the future.

*"Well, what worries me is that I've had MRSA... do I have to be isolated every time I come into hospital because I have it?" (Anne)*

These experiences reflect the connection between the emotional effects of being MRSA positive and the participants' knowledge and understanding of MRSA.

### **Knowledge**

Participants expressed a desire to understand their MRSA situation and valued accurate information that enhanced their knowledge, thus helping them to cope with their situation. George benefited from the explanations for his MRSA situation:

*"Well it eased that anxiety that I had to start with"*

Fundamental to the participants' experience of Being MRSA positive was their knowledge and understanding of infection control precautions. For them, the knowledge they possessed was obtained, either through previous hospitalisation or from their contemporary experience. Contributing to the patients' worry and apprehension were the discrepancies they reported in the knowledge and practices of health care professionals.

*".. When I see the inconsistencies in the procedures, I realised that they [nurses] probably don't have enough information or the confidence [to explain]." (Eileen)*

Thus, for the participants in this study, 'Being MRSA Positive' was influenced by, and had consequences for relationships they had with their healthcare workers, family and friends.

### **Theme 2: Being with others**

The second key theme related to how source isolation influenced the participants' ability to socialise, the concern they had for others and their relationships with staff.

### **Socialising**

For some participants, the restriction in access and egress that is required of MRSA isolation greatly reduced or modified opportunities for socialising and interacting with other patients.

*"But I truly don't like being in a room like this, I like being with people...I do like the company... just someone else in the room. (Anne)*

Although it reduced their opportunity to socialise, source isolation afforded patients privacy and solace, which many participants were used to and valued. For these participants, having a single room helped them to cope as it gave them their own space. Essential to maintaining this solace was however, their ability to communicate with others. Access to a telephone helped participants to maintain contact with the outside world. Visits from friends and family helped them to feel less isolated and helped to pass the time. The importance of this contact with others was demonstrated when participants' family and friends would not visit for fear of catching MRSA, leading to feelings of hurt and abandonment. Harry described the actions of his sisters after they were told about his MRSA:

*"They won't even come in the room...they are afraid of catching something. They don't want to understand, they just don't want to catch anything."*

Harry's remarks exemplified concerns expressed by some participants about how their socializing with others may lead to the spread of infection and the concerns they held for others.

### **Concern for others**

Most participants believed that their isolation for MRSA was necessary to protect others. For example, Charles remarked that:

*"... its only common sense that if you have got something that you can pass on, which can cause say half a dozen more to get sick, ... to be on your own till its cured."*

Accordingly, participants believed that the personal protective equipment (PPE) should be worn to protect others. They experienced concern about spreading MRSA to other patients, family, and friends,

particularly when they observed inconsistencies in the use of PPE. Some participants declined or rejected physical contact, such as a hug or kiss because they feared spreading MRSA. Diane described her uncertainty of how to greet her friends:

*“...when they come in they want to give me a kiss or a hug... I would say ‘No, no you can’t touch me cause I might be contaminated or contagious’... and I wasn’t sure how much of that they could do.”*

MRSA isolation also influenced participants’ relationships with staff.

### **Staff relations**

For some participants MRSA isolation adversely affected their relationships with health professionals. For example, Charles noticed that some doctors avoided shaking his hand when they greeted him. In addition, participants commonly reported that the use of PPE created a barrier to interaction with health professionals. As Eileen described:

*“...sometimes the doctors would come and open the door a crack and talk to me through the crack in the door, rather than having to put on the apron, and mask and gloves... I would have preferred them to have come in and had their discussion.”*

Participants viewed this influence of MRSA on the social practices of health professionals negatively. They also reported the quality of care they received to be compromised because of their isolation. Anne was refused a hair cut from the visiting hairdresser, and George was not offered a mid-morning hot drink. Eileen reported being denied an important chiropody treatment because of her MRSA status.

These events added to the emotional burden of the experience of source isolation, which was compounded by their physical surroundings.

### **Theme 3: Living within four walls**

For the participants in this study, the physical environment was a key feature of their experience of isolation. The life world of participants mainly existed within the confines of their own room, and their MRSA experience was influenced by their perceptions of

confinement and the physical attributes of their room.

### **Imprisonment**

Although most participants understood the reasons for their isolation, they viewed it as a confinement and were conscious of the restrictions placed on their access and egress. Anne described being “closed up in one room” and “shut away”, while George talked about being “stuck in your little room and kept away from people”. Participants also expressed frustration that being restricted to their room limited their independence. Having to ask for a drink or to be taken to the shower affected what little control they felt they had over their life in hospital.

### **A room with a view**

With only a small living space, the physical attributes of the isolation room and its environs became important. Some participants felt less isolated if they were able to have a door open, hear and see other people in the corridor, or have background noise such as a radio. In addition to the telephone and visitors, one of the ways that participants kept in touch with the outside world was to look out of the window; thus having a view outside was important as it made participants feel less isolated. Some participants, in particular, felt better when they were able to see the sun. Charles commented that:

*“If you have got something to look at and the sun is shining, that is 100% great... If you have got a view it does not do anyone any harm on their own.”*

## **DISCUSSION**

There is a general understanding in the literature that colonisation or infection with MRSA is a negative experience. The findings of this study are generally consistent with others who credit anxiety, anger, frustration and fear as psychological consequences of MRSA isolation (Catalano 2003; Tarzi et al 2001; Kennedy and Hamilton 1997).

This study reveals the importance of recognising the patient in MRSA isolation as an individual, and minimising feelings of stigmatisation they may experience. Despite uniform policies and procedures

for the care of a patient in MRSA isolation, each person's care requirements and emotional needs must be recognised and opportunities provided to give emotional support.

The social isolation and stigma associated with isolation may be aggravated by the use of personal protective equipment. Although participants understood the importance for PPE, they still found that its use increased their fear and sense of stigma, a finding that concurs with other research (Criddle and Potter 2006; Robertson et al 2004; Madeo 2001; Newton et al 2001; Knowles 1993).

A number of researchers indicated that healthcare professionals may regard a patient in source isolation differently from others (Cassidy 2006; Gill et al 2006; Madeo 2001; Gammon 1998; Oldman 1998; Knowles 1993). In these studies, nursing and medical staff admitted to spending less time with patients in MRSA source isolation and expressed concerns about acquiring MRSA from them. Placing patients in isolation may expose them to less medical care or access to associated treatment, a higher risk of medical error and dissatisfaction with the quality of their care (Pike and Mclean 2002; Rees et al 2000; Stajduhar et al 2000; Kennedy and Hamilton 1997). An adequate knowledge of MRSA transmission may alleviate unnecessary fears felt by healthcare professionals of personal danger and ensure that MRSA positive patients receive appropriate and individualised care (Makoni 2002; Erlen and Jones 1999).

A lack of or incorrect information can be a significant contributing factor to the negative experiences of patients in MRSA isolation (Hamour et al 2003; Madeo 2001; Ward 2000). The findings in this study reveal that patients have different levels of knowledge and comprehension of MRSA but value information as a means of coping with their experience.

Source isolation for MRSA impacts on the quality of relationships. The study findings confirm the importance of visitors in reducing the negative effects of MRSA isolation (Madeo 2001; Ward 2000; Bennett 1983). Providing MRSA information for family and visitors may reduce their ill-informed fear of becoming

infected and improve the socialisation (Criddle and Potter 2006; Gill et al 2006). Ensuring patients have access to a telephone as a means of communication with the outside world may help ameliorate feelings of confinement, a finding also common to other research (Rees et al 2000; Stajduhar et al 2000; Ward 2000; Oldman 1998).

Although many participants enjoyed the experience of privacy and quietness of a single room, the restriction of their access and egress influenced their experience of care. Having a view outside, being able to see the sun, hearing noise, and having the means to pass the time reduced boredom and mitigated feelings of confinement. Research literature confirms that patients in isolation who are provided with a room with a window may experience less feelings of confinement (Ward 2000; Campbell 1999; Kennedy and Hamilton 1997; Oldman 1998; Bennett 1983). Therefore, the design of healthcare facilities should give due consideration to the inclusion of windows wherever possible.

If staff recognise the negative emotions associated with being MRSA positive, they can better understand the behaviours of patients in isolation (Mayho 1999; Denton 1986) and provide ways to improve the experience such as reading activities, television and listening to the radio (Duff 2002). Providing patients in isolation with opportunities of independence and a sense of control over their care may help them cope and make the experience more positive, a finding reported in other research (Newton et al 2001; Gammon 1998; Knowles 1993).

## CONCLUSION

Although the majority of participants found some positive aspect of being accommodated in a single room, the overall experience of MRSA isolation was negative. The central characterisation of their experience, 'Behind barriers', indicates that for these patients MRSA isolation imposes barriers to the expression of own identity and normal interpersonal relationships, as well as the delivery of quality care. In particular being in source isolation impacts on the provision of emotional care. Nurses and other

healthcare professionals must look for ways to improve the experience of patients' in MRSA isolation and in particular to the perception of stigmatisation as a result of being in MRSA isolation.

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# The effectiveness of a follow up program on blood pressure and cardiovascular risk factors for hypertensive patients

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## KEY WORDS

hypertension, cardiovascular risk factors, follow-up, nursing

## ABSTRACT

### Objective

The purpose of this study was to evaluate the effectiveness of a follow-up program on blood pressure and cardiovascular risk factors in hypertensive patients.

### Design

A time series (one group pretest-posttest) quasi-experimental study was used.

### Setting

This study was conducted at the Hypertension, Obesity and Diabetes Center of a State Hospital in Turkey.

### Subjects

Forty five (45) hypertensive patients were recruited.

### Intervention

An education program was implemented with hypertensive patients whereby patients were monitored at each month for a total of six times following an initial appointment. Follow-up by nurses included checking weight and blood pressure (BP), reviewing of diaries, education, counseling or referrals to other disciplines.

### Measurement

Patients' BP and cardiovascular risk factors were assessed at the baseline and six months later. The findings were then compared to evaluate the effects of intervention on the patient's BP and cardiovascular risk factors.

### Results

After intervention there was a significant decrease between the mean systolic BP and diastolic BP when compared with the baseline. BMI was decreased from  $29.6 \pm 3 \text{ kg/m}^2$  to  $29.3 \pm 3 \text{ kg/m}^2$  ( $p=0.033$ ). Total cholesterol did not change. Triglycerides decreased. However, LDL-cholesterol increased and HDL-cholesterol decreased.

### Conclusion

To manage hypertension and to reduce cardiovascular risk factors, a program is needed and should be implemented which includes antihypertensive treatment options, lifestyle changes and lipid-lowering drug therapy. The long term effects of such a program should be monitored while implementing.

## INTRODUCTION

High BP is one of the major risk factors for coronary heart disease and the most important risk factor for cerebrovascular disease (Chobanian et al 2003). In Turkey, hypertension prevails in one-third of adults. For those aged between 40-69 years the current prevalence of hypertension reaches one-half of subjects, 43% in men and 56% in women (Onat 2001). The control of hypertension and prevention of the age-related increase in BP remain major public health priorities (Apel et al 2003).

Significant progress has been made in increasing the awareness, detection, treatment and control of hypertension; however it has been reported that approximately 30% of adults are unaware of their hypertension (Chobanian et al 2003). Only half of affected patients receive treatment and just half of these achieve a BP rating of <140/90 mmHg (Oakeshott et al 2003). The goals of managing hypertensive patients are to improve their quality of life and prevent complications, thereby decreasing morbidity and mortality.

Cardiovascular risk factors which lead to coronary artery disease are quite common in hypertensive patients. Some studies have found significant associations between hypertension and low HDL cholesterol, increased LDL cholesterol, hypertriglyceridaemia (Stern et al 2000) obesity and impaired glucose tolerance (Borde-Perry et al 2002; Silaste et al 2000). Data support the clinical management of multiple risk factors as well as the achievement of BP control (Kastarinen et al 2000). Moreover, the presence of multiple risk factors is often implicated in the increased coronary morbidity and mortality observed in effectively treated hypertensive's (Stern et al 2000).

The guidelines for prevention, detection, evaluation, and treatment of high BP have been emphasised the reduction of the BP and cardiovascular risk factors which lead to hypertension (Chobanian et al 2003; Turkish Cardiology Society 2000). Pharmacologic and nonpharmacologic treatments for patients with hypertension are effective in lowering the BP of many

people who follow the recommendations and may also reduce other risk factors for cardiovascular disease (Chobanian et al 2003). However, patients' non-compliance with their medical treatment is one of the problems of controlling hypertension (Li et al 2008; Aminoff and Kjellgren 2001). Adherence to therapeutic regimens is becoming a significantly important step in the campaign to control high BP (Chen et al 2009; Li et al 2008). Furthermore, there is still an enormous task in promoting non-pharmacological treatment (Silaste et al 2000).

Hypertensive patients should be educated and monitored at the beginning of the treatment to achieve better compliance (Chobanian et al 2003). Patients meet physicians or nurses at follow-up appointments over a long period of time (Aminoff and Kjellgren 2001). Primary goals of this follow-up are to reduce the cardiovascular risk factors associated with high BP, to encourage patient compliance with the medical treatment and to control BP (Chobanian et al 2003; Aminoff and Kjellgren 2001).

Nurses play a critical role in caring for people with cardiovascular disease and nurse coordinated programs have been shown to improve clinical outcomes (Park et al 2010; Irmak and Fesci 2010). Practice nurses conduct interventions such as education, assessment, consultation, and regular follow up for cardiovascular disease management or reduction of cardiac risk factors. Some systematic reviews provide evidence for the efficacy of the practice nurse-led clinics and general practice nurse interventions in reducing cardiac risk factors in healthy adults, as well as those with established disease or known cardiac risk factors. The use of the practice nurse-led clinics is particularly supported for blood pressure management, cholesterol reduction, dietary modification, and increasing physical activity (Halcomb et al 2007; Page et al 2005). Further, it has been shown in several studies on hypertensive patients that the programs which include assessment, education, and follow-up increase the compliance with the treatment (Aminoff and Kjellgren 2001). When, BP is brought under

control (Mohammadi et al 2006; New et al 2003; Clark et al 2000), mean total cholesterol decreases (Osterbrink and Münzinger 2005) and physical activity increases (Drevenhorn et al 2007).

Recognised roles of nurses need to be further developed regarding hypertension management and cardiovascular risk reduction in hypertensive patients. There are several studies in western countries evaluating BP control of hypertensive patients with programs including education and follow-up (McClellan and Craxton 2008; Drevenhorn et al 2007; Osterbrink and Münzinger 2005; Clark et al 2000). However, in these countries, there was a little reported evidence concerning the effects of interventions carried out solely by nurses on both BP and cardiovascular risk factors (especially cholesterol) in the hypertensive population. In Turkey, diagnosis, treatment, and follow-up on hypertensive patients is generally done by physicians. Nurses have not taken an active role in the care of hypertensive patients. In addition, there are no studies conducted by nurses on the application and evaluation of the results of a program constituting assessment, education and follow-up.

The purpose of this study was to examine the effectiveness of a follow-up program including multiple nursing interventions such as assessment, intensive education, counselling on BP and cardiovascular risk factors of hypertensive patients.

## METHODS

### Design

This study was conducted at the Hypertension, Obesity and Diabetes Centre of Mugla State Hospital in Turkey. A time series (one group pretest-posttest) quasi-experimental design was used (Polit and Hungler 1999).

### Sample

For the test of difference between two means, an effect size of 0.60, with a power of 0.80 and alpha level 0.05, the sample size needed was 44 subjects (Polit and Hungler 1999). However, 45 consecutive patients were recruited in this study. The data were collected from September 2005 and May 2006.

Inclusion criteria required patients had to be taking one or more antihypertensive agents, the main diagnosis was hypertension and they had to be living in the city of Mugla. Patients with these criteria were recruited automatically without any further selection process.

The participants were informed about the purpose of the study and were assured their identities and responses to the questionnaire were confidential. In addition, informed consent was obtained from those patients who had agreed to participate in the study. Obtaining written permission from the state hospital administrators, patients with hypertension and attending The Hypertension, Obesity and Diabetes Centre were referred to researchers by a physician after clinical examination. After an initial appointment patients were followed up at the hospital by the researchers for six months at one-month intervals.

### Intervention and follow-up

Before intervention, an education program was developed by the researchers. Its purpose and goal was to assist patients to control hypertension and to reduce their risk of cardiovascular disease. This program was based on the basic national (Turkish Cardiology Society 2000) and international guidelines (Chobanian et al 2003) and other literature (Apel et al 2003; Morgan and Capuzzi 2003; Suter et al 2002; Padwal et al 2001). The program consisted of three sessions which was outlined as the topic of hypertension, the risk factors (20 min), the lifestyle changes (30min) including dietary approaches to stop hypertension (DASH), smoking, physical activity, and medication (20 min).

The causes and complications of hypertension were addressed in the first session of the education program. The second session covered lifestyle changes. The importance of the consumption of fruits, vegetables, and low-fat dairy products with a reduced content of saturated and total fat was emphasised and the reduction of salt, sweets, and sugar-laden beverages was recommended in the DASH diet. Moreover, consumption of alcohol was restricted, and the importance of weight control was also emphasised. Other topics were covered including

the benefits of regular aerobic exercise, physical activity such as cycling, brisk walking, or swimming (at least 30 min per day) and the effects of smoking on hypertension and cardiovascular disease. In the third session the effects and side effects of different groups of medications were also discussed.

The intervention was done with three researchers. At the start of the study the patients' current medication was documented, and their BP and cardiovascular risk factors were assessed. Then, individualised education sessions on the patient's recommended treatment were given. When the education program was completed, the purpose of the visits was explained, and goals for their pharmacologic and non-pharmacologic treatment were discussed. Patients were asked to work towards the goals for healthy eating abiding by the DASH diet, smoking cessation, increased exercise and regularly taking their medications.

Over a six-month period, participants kept diaries of food, exercise, and medications. Food diaries were used to record all food patients consumed in a week (seven-day food records). Exercise diaries were used to assess type, intensity, duration, and frequency of exercise performed weekly, and medication diaries were used to record dose and frequency of medications taken daily.

At each follow-up session, diaries and advised goals were reviewed and, if necessary, education and reinforcement of diet, exercise, medication, and smoking adjustment recommendations were continued. BP and weight measurements were taken. If target BP levels had not been achieved, patients were referred to their physician for medication adjustments (nurses do not have prescribing authority in Turkey). Those patients who did not comply with the recommended diet regimen and whose weight was uncontrolled were referred to their dietician, and appropriate recommendations were given. Patients who were referred to the dietician and the physician were followed up with implementation of the given suggestion. All follow-up sessions lasted 20 to 25 minutes. After six months the patients BP and cardiovascular risk factors

were reassessed at the Hypertension, Obesity, and Diabetes Centre. Physicians were requested to assess pharmacological management of the patients whose LDL-cholesterol had increased after a six month intervention.

### Measurements

The BP measurement protocol was similar to used in previous studies (Woodward et al 2006; Apel et al 2003). A calibrated mercury sphygmomanometer was used to measure BP while the individual was seated and resting five minutes with the arm held at heart level. The first measurements were taken in both arms; unless there was a significant difference, the right arm was used for subsequent measurements. The mean of two consecutive measurements taken at two-minute intervals was recorded.

Weight was measured using a calibrated scale, and height was measured using a wall-mounted stadiometer. Lipid value measurements were taken after a 12-hour fast.

### Analytic Strategy

The Paired-Samples T Test was used to test quantitative data and McNemar's Test was used to test categorical data. Comparisons of repeated BP measurements were assessed by repeated measurement analysis of variance. Statistical significance was taken as  $p < 0.05$ .

## RESULTS

### Demographics

The mean age of patients ( $\pm$ SD) was 51.0 (9.9) years, 64.4 % were women, 53.3 % had graduated from primary school and 84.4 % were married. Duration of hypertension ( $\pm$ SD) was 4.3 (4.9) years. Before intervention, 64.4 % of patients were taking one and 35.6 % were taking two antihypertensive drugs. After intervention, there was no change in these percentages. In addition, only 7.1 % were taking lipid-lowering drugs.

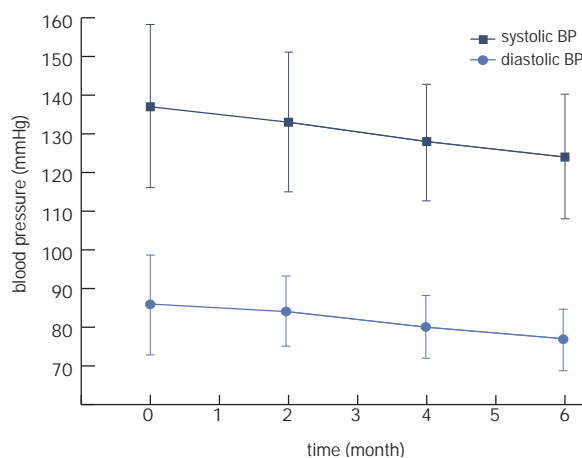
### Blood pressure

The measured value of mean systolic BP before intervention was  $137 \pm 21$  mmHg; after intervention



it decreased to  $124 \pm 16$  mmHg ( $p < 0.001$ ). There was a decrease in the mean diastolic BP from  $86 \pm 13$  mmHg to  $77 \pm 8$  mmHg ( $p < 0.001$ ). At the baseline the proportion of patients with controlled BP  $< 140/90$  mmHg was 46.7%; after intervention it had increased to 73.3% ( $p = 0.002$ ) (table 1). BP was measured monthly for six months, but the measurements in the graph were taken at a two-month interval. At the baseline in the 2<sup>nd</sup>, 4<sup>th</sup> and 6<sup>th</sup> months the mean systolic BP readings were  $137 \pm 21$ ,  $133 \pm 18$ ,  $128 \pm 15$  and  $124 \pm 16$  mmHg, respectively ( $F = 11.07$ ,  $df = 3$ ,  $p < 0.001$ ). The mean diastolic BP readings were  $86 \pm 13$ ,  $84 \pm 9$ ,  $80 \pm 8$  and  $77 \pm 8$  mmHg, respectively ( $F = 11.70$ ,  $df = 3$ ,  $p < 0.001$ ) (figure 1).

**Figure 1: Change of systolic and diastolic blood pressures before and after intervention during a six month follow up.**



**Table 1: Blood pressure and cardiovascular risk factors, at the baseline and after six months.**

Variable	Baseline	After six months	t	p
Systolic blood pressure (mmHg)	137.55 ± 21.73	124.33 ± 16.29	5.50	0.000
Diastolic blood pressure (mmHg)	86.77 ± 13.23	77.88 ± 8.88	4.96	0.000
Blood pressure $< 140/90$ (mmHg)	21 (46.7%)	33 (73.3%)		0.002
Body mass index (kg/m <sup>2</sup> )	29.69 ± 3.84	29.33 ± 3.87	2.19	0.033
Total cholesterol (mg/dl)	205.88 ± 40.17	208.00 ± 46.43	2.97	0.687
HDL-cholesterol (mg/dl)	50.08 ± 6.57	46.77 ± 10.44	2.58	0.013
LDL-cholesterol (mg/dl)	119.02 ± 42.91	133.93 ± 41.39	-2.47	0.017
Triglycerides (mg/dl)	181.40 ± 121.77	131.60 ± 75.42	2.97	0.005

### BMI and blood lipids

At the baseline, the body mass index (BMI) was  $29.6 \pm 3$  kg/m<sup>2</sup>. After intervention the BMI had decreased to  $29.3 \pm 3$  kg/m<sup>2</sup> ( $p = 0.033$ ). 44.4% of patients were overweight (BMI, 25-29.9) and 44.4% were obese (BMI,  $\geq 30$ ). It was noted total cholesterol did not change ( $p = 0.687$ ) after intervention when compared to the baseline. Triglycerides decreased ( $p = 0.005$ ). However, LDL-cholesterol increased ( $p = 0.017$ ) and HDL-cholesterol decreased ( $p = 0.013$ ) (table 1).

### DISCUSSION

A six month follow-up program including multiple nursing interventions such as patient-centred education, assessment, counselling, regular follow-up and referrals to the other disciplines was applied to 45 patients diagnosed with hypertension.

Results of this program showed a significant decrease in the mean systolic and diastolic BP and decrease in BMI, however, only triglycerides decreased in lipid values. There was no significant difference in total cholesterol; surprisingly, LDL-cholesterol increased but HDL-cholesterol decreased.

The means of systolic and diastolic BP had decreased. The proportion of patients with controlled BP  $< 140/90$  mmHg had increased significantly. Besides focusing on complying with lifestyle changes and drug therapy, patients who were unable to reach the target BP levels were referred to their physician for medication adjustments directed at further reducing blood pressure. The benefits of multifactorial intervention to control BP were convincingly demonstrated in studies with (Mohammadi et al 2006; New et al 2003) and without a control group (Drevenhorn et al 2007; Woodward et al 2006; Clark et al 2000).

Controlled hypertension reduces total mortality, cardiovascular mortality, stroke, and heart failure events (Chobanian et al 2003).

The BMI of the patients decreased significantly in contrast to Woodward et al (2006) and Jehn et al (2006) whose studies indicated no significant changes in BMI. The decrease in BMI can be explained by follow-up with patients within a shorter interval of one month. But patients should be monitored and followed up continuously in order to maintain weight loss. The weight loss led to a decrease in BP since there was a positive relation between body weight and BP (Chobanian et al 2003).

There was a meaningful decrease in triglycerides. There was no significant difference in total cholesterol. Surprisingly, LDL-cholesterol increased and HDL-cholesterol decreased. The association of hypertension with low HDL cholesterol and increased LDL cholesterol, hypertriglyceridaemia, has been shown by Stern et al (2000). The studies conducted by Drevenhorn et al (2007) and Mohammadi et al (2006) showed cholesterol; HDL-cholesterol and LDL cholesterol were not significantly improved. At the baseline, 37.7% of the patients' LDL cholesterol was 130mg/dl and 15.5% was 160mg/dl. However, only 7.1% of patients were using lipid-lowering medication. This may have contributed to the unimproved blood lipids because dietary adjustments alone could not lower LDL-cholesterol levels to less than 130mg/DL in many individuals (Denke and Grundy 1990). Lipid-lowering drugs usually decrease LDL and total cholesterol levels more effectively than does diet (Garber et al 1996). Another possibility to be considered was serum cholesterol which has been reported to be higher in winter than in summer (Burtis and Ashwood 1998). Moreover there may be seasonal changes in nutritional habits. Generally, in the city of Mugla food preparation habits use a great deal of olive oil in the cooking of vegetables, but the foods which are high in cholesterol and saturated fat such as red meat and sausage are usually roasted and eaten more often in winter time. In examining the food diaries of the patients, it was noted that the consumption of vegetables, fruits and legumes

increased. But it was also note worthy that intake of foods such as red meat had increased, so patients were advised to limit certain meat products.

It has been reported a large proportion of patients with high BP have a significant plasma cholesterol abnormality in that 67.9% of the hypertensive patients without coronary artery disease and 88.4% of the hypertensive patients with coronary artery disease had hypercholesterolaemia (Stern et al 2000). Especially in patients with hypercholesterolaemia, cholesterol levels should be decreased (Kastarinen et al 2000). More effective ways to manage hypercholesterolemia in hypertensive patients by non-pharmacological means are needed. Furthermore, for patients with the highest level of risk, improvements in their treatment using pharmacological means are also needed (Kastarnen et al 2000).

#### **Limitations**

The use of a control group design and the lack of a control group is the limitation of this study.

#### **CONCLUSION**

Subsequent to a follow-up program there were meaningful changes in the mean readings for systolic and diastolic BP. Concerning cardiovascular risk factors, the BMI had significantly decreased. There was no expected improvement in lipid values except triglycerides.

The main goals in the treatment of hypertensive patients should be to reduce the cardiovascular risk, which is especially high in patients who also have lipid abnormalities, and to bring the hypertension under control. Nurses can play a very important role in hypertension management and cardiovascular risk reduction, and this role needs to be further developed and recognised. To manage hypertension and reduce the cardiovascular risk factors, a program is needed and should be implemented to include antihypertensive treatment options, lifestyle changes and lipid-lowering drug therapy. In addition, further research is needed to determine the long-term effects of such a program.

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# Is it me? Or is there something in the water? Client decision making in nursing

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## KEY WORDS

Client, decision making, chronic care, rural, nursing.

## ABSTRACT

### Objective

This paper aims to retrospectively explore client decision making via two case studies prompting us as nurses to reflect on the factors that lead to this. Clients do not always act in 'their own best interests' as 'defined by health professionals'. Our response and understanding of this is key if we are to support and devise strategies encouraging more appropriate decisions and improved outcomes.

### Setting

Sole nurse practitioner in community health practice in isolated rural Australia.

### Primary Argument

In the rush of daily chronic care caseload management, factors affecting client decision making are often overlooked. Client decisions around care often result in poor outcomes for isolated rural clients. Improved client outcomes can be gained if nurses, (aware of these decision making factors), are able to assist clients to overcome their decision making barriers.

### Conclusion

In rural nursing practice client decision making is multifactorial. By reflecting on clients decisions and addressing barriers in this context, short term and long term strategies can be implemented to improve the decision making process resulting in improved outcomes for isolated rural clients.

## INTRODUCTION

Chronic care is in the process of becoming a central feature of primary care and in the rural Australian context is also on the increase (Dennis et al 2008; Couper 2007). With an epidemic of chronic disease, increasing comorbidities, coupled with seemingly poor decision making and client non-adherence poor health outcomes are seen. Following up on clients who have not been able to take personal responsibility for aspects of their own health care, nurses debriefing sessions and case reviews have frequently resulted with the reflection of rural health professionals and this nurse practitioner (NP) asking 'Is it me? Or is there something in the water?'

The literature abounds both internationally and in Australia that there is an increase of clients within the community living with chronic illness (Dennis et al 2008). Chronic illnesses are defined as 'health problems that require ongoing management over a period of years or decades...and are not self limiting' including hypertension, diabetes, chronic obstructive airways diseases and cardiovascular diseases (Couper 2007). Those clients with chronic illness living in rural Australia suffer the added burden of poor access to health practitioners, services and programs that may assist them to self care reducing their choice of action and is reflected in their decision making (Dennis et al 2008; Woolf et al 2005; FitzGerald et al 2001).

NP's in community health and rural primary health care settings are scarce in number, with only 20% of the approximately 143 Australian NPs practising outside the metropolitan areas (Gardner et al 2009). A large percentage of the rural NP client load includes management of chronic care clients. For the NP the lack of resources, fewer services, low staffing levels and resistance from existing rural general practitioners (GP) can result in difficulties establishing collaborative care and maintaining client centred care (FitzGerald 2001; Wagner 2000; Couper 2007). Additionally for this NP, blurring of area health service

boundaries across two area health services increases the difficulty of collaboration, management care planning, and timely communication. Understanding decision making factors and improving professional communication, collaboration and networks can have a positive client outcome through improved decision making leading to adherence to treatment (Montgomery et al 2001; Barry 2002; Ganzini et al 2003; Woolf et al 2005).

Frequently an 'absence of chronic disease self management' and delayed decision making on seeking care, result in poorer outcomes for the client (due to non-adherence to treatment/medication) and frustration for their health practitioners (Adams et al 2001; Barry 2002; Ganzini et al 2003; Montgomery et al 2001; Woolf et al 2005). However when client decision making factors (see table 1) are analysed, strategies and reasons become apparent. These decision making factors include client depression, cognition, education, sources of information, physical condition, emotions, stressors, social supports, access to services, treatment preferences, communication styles, understanding and client nurse rapport/relationships (Adams et al 2001; Barry 2002; Bechara 2004; Cooper et al 2003; DiMatteo 2004; Donovan 1995; Edwards and Elwyn 2001; Ganzini et al 2003; Montgomery et al 2001; Pierce and Hicks 2001; Saba et al 2006; Vermeire et al 2001; Wagner 2000; Wahl et al 2005; Woolf et al 2005). In the rural context rural independence and stoicism are added factors (Dixon and Welch 2000; Strasser 2003).

This paper aims to retrospectively explore client decision making via two case studies with the aim of prompting us as health professionals to reflect on the factors that lead to client decisions. By understanding the reasons why clients do not act in 'their own best interests' we are better equipped to support and devise strategies to support self management and appropriate use of health care thus achieving improved outcomes.

**Table 1: Factors affecting client decision making.**

Factor (references)	Meaning
Rapport/ Relationship with health care team	Shared decision making has been a shift away from the paternalistic (health practitioner directed) care towards a more consumer (client directed) care. Studies have shown that patients are more likely to engage in decision making when they felt listened too and understood, had trust, could express their own difference of opinion and could negotiate. (Cooper et al 2003; Edwards and Elwyn 2001; Ganzini et al 2003; Woolf et al 2005).
Educational background	Formal education of the client has been identified by a number of studies as important factor for decision making ability. (Benbassat et al 1998; Ende et al 1989; Woolf et al 2005).
Health care team	A health care team is a multidisciplinary team of health professionals who communicate regularly about the care of the client of interest. Most successful management of chronic health conditions is via a team (Wagner 2000).
Information sources	Clients have an enormous ability to access information via their health care team, family, friends, brochures and the advent of the internet, however not all information is appropriate (Brodie et al 2000; Impicciatore et al 1997).
Client time	The client needs to have the time to communicate with their health practitioner effectively. This includes time to listen to advice and act accordingly following consultation (Edwards and Elwyn 2001; Ganzini et al 2003).
Health care professional time	The attitude and behaviour of the health professional has been shown to profoundly influence the decisions of clients (Woolf et al 2005).
Clients physical condition	Studies have shown that clients who refuse care in emergency situations frequently have disorientation, inappropriate behaviour, and a deterioration in chronic health conditions (Alicandro et al 1995).
Client emotions	Anger/aggression and happiness reflect in decision making (Bechara 2004).
Client stressors	Include lack of family support, transport, financial situation, rurality and property concerns this can include 'who will feed the animals if client attends hospital' (Adams et al 2001)
Clients social support	What social support does the client have - this may include family, friends, or in the case of one client "the men at the pub" (Adams and Drake 2006; Adams et al 2001; Cooper et al 2003; DiMatteo 2004).
Clients depression	Depressive illness in the client hinders all decision making processes, and communication (Ganzini et al 2003).
Clients cognitive ability	Clients need a thorough understanding of 'what' a health practitioner needs decisions on. Both memory and cognition are equally important to aid in decision making. A client may have the ability to decide in one aspect of their life however it may be completely inappropriate for them to do so in other areas (Cooper et al 2003; Ganzini et al 2003; Weber and Johnson 2009).
Personal values/ preference	Client preferences in chronic illness and self care are reflected in their decision making, determining improved or poorer outcomes (Adams et al 2001; Montgomery et al 2001).
Decision aids	Decision aids vary and need to be used as educational adjuncts to personal interactions with health professionals to assist in choice. Type of aid used should depend on context, decision to be made and other relevant client decision making factors (education, social/financial support) (Barry 2002).

**Case Studies**

All identifiable client information has been removed from the case studies.

**Case Study One**

*Gordon initially presented to clinic feeling unwell and requested blood pressure monitoring. It revealed hypertension and he was assisted to access a GP within the local area. Following consultation, continued monitoring, and education of risk factors, Gordon was advised to commence antihypertensive*

*medications. Gordon returned to discuss with the NP alternative treatment as he didn't want to take medication. This resulted in six months of collaborative care within a multidisciplinary team including the NP, GP, dietician, and Gordon. Gordon reduced his risk factors by changing his diet, reducing his weight, increasing his activity by daily exercise (bike riding) and reducing his salt intake. Gordon agreed to commence on minimal medication six months after presentation after reducing all possible*

risk factors. He is now self caring and monitoring his own blood pressure and has maintained this within normal limits for over 12 months.

### Case Study Two

Todd lives alone on an isolated rural farm. He was previously known to the service after refusing admission to hospital for dangerous hypertension because "he had to get home". The NP had discussed the ongoing monitoring and care planning for his hypertension however he stated "I'll be right". He explained that his usual GP was 600 kilometres away. Local medical and health professionals were very concerned about an ischaemic ulcer on his foot and his uncontrolled diabetes. He was again refusing admission to hospital despite being unable to walk due to pain. He agreed to meet the NP on his way home from town and "have a chat". He again refused admission to hospital stating "I have to get home, there is no-one to feed the animals. They can't fix this anyway because my mate at the pub told me they haven't been able to fix his!" Two days later he agreed to a follow up home visit. Refusing an ambulance he agreed the NP could drive him to hospital (after the menagerie of animals had been fed). Following a diagnosis of untreated type 2 diabetes with comorbidities of cardiovascular disease, renal failure, peripheral vascular disease, and hypertension, Todd required transfer to the state capital for extensive treatment (some of which he refused). When asked why he had avoided doctors and hospital for his 69 years he stated "Drs bury their mistakes" and hospitals "once you get in there you never get out". When asked why he got into the NP car and came to hospital with her for admission he stated "you were [the NP] so up on your high horse I thought it was the only way I would get any peace" he then smiled and added, "the Dr said later that I would have died if I had not come with you" [the NP].

### DISCUSSION

Factors affecting client decision making are multifactorial as noted in table 1. In the rural context, themes of financial stressors, social and geographical isolation, and low health literacy levels impeded

by lack of access to services and resources are significant barriers for rural clients decision making and chronic illness self care (Wong et al 2009).

Limited education and understanding of his medical condition, inaccurate sources of information, a deteriorating physical condition, the stressors of activities of daily living and farming without social/emotional support and financial strains were all reflected in Todds' decision making. Additionally, rapport with the NP was difficult and contentious due to the intermittent crisis contact, Todds' abrupt communication style, and the NP direct communication style. In comparison, Gordon's education and understanding of his medical condition developed over time as he gained information from his health care providers improving his physical condition. His social/emotional support was gained from his family and wife. Without stressors of daily living Gordon maintained a collaborative 'all on the same page' relationship towards a goal with his team and the NP used a collaborative style of communication. Jallinoja et al (2007) note some health care professionals' lack of communication skills results in impersonal counselling focusing on irrelevant factual material and failure to engage the client which can block client lifestyle changes. In contrast, other health professionals believed clients were unable to act 'in their own best interests' even though the client was 'responsible for their lifestyle change' (Jallinoja et al 2007). On reflection, the above statement was certainly the NPs communication style when crisis managing Todd's case. Without an optimal trusting rapport/relationship between Todd and the NP, the challenge of addressing acute medical needs within a timely fashion required a direct factorial communication style. In this climate non-optimal client decision making resulted.

Gordon functioned actively in the community and self managed his medical conditions suggesting normal cognition. For Todd, the concerns of repeated refusal of ambulance transfer and hospital admission had the NP questioning his cognition and decision making. Ganzini et al (2003) warns health professionals of the risks of assuming clients are unable to make their own

decisions that lead to poorer outcomes and notes that health professionals 'used higher standards to assess [client] capacity if refusal of treatment increased risk [to the client]. The literature also demonstrates that clients may be incapable of decision making in one area of their life and be quite capable of making decisions in another area of their life (Ganzini et al 2003). Essential for appropriate client decision making, is the clients ability to communicate a choice and to understand and appreciate the consequences of decisions (Ganzini et al 2003). Again on reflection, the NP identified with Ganzini et al (2003) findings within Todds' ability to make business for the farm, and yet presenting as unable to understand and appreciate the consequences of his medically related decisions.

Both Todd and Gordon experienced partial teamwork from a fragmented team. Gordons' involvement and simpler case management resulted in his successful outcome. In contrast, Todds' care and complex requirements required rapid teamwork and extensive communications between nurses and a local GP. This was necessary to facilitate his admission first to the local hospital and transfers onto the state capital. Todds' decision making delayed the timeliness of his care with less than optimal outcomes. Todds' story also demonstrates the difficulty in trying to maintain relationships with a GP across area health service and distance boundaries. GP interaction and the difficulties experienced in maintaining a multidisciplinary team approach in rural areas is well documented in the literature (Wagner 2000; Heisler et al 2002). In this NPs experience, dependent on health professionals availability, multidisciplinary teamwork occurs and they all want to work together for the best client outcome, despite the 'team' being difficult to identify. In cases where multidisciplinary teamwork is nonexistent it is generally because there is lack of practitioners rather than health professionals not wanting to work together.

Information sources are important in the clients' education and with the advent of the internet, wider information access is possible. Incorrect information is impacting further on some chronic clients self

care. As noted in Todd's case, where he neglected to continue and follow up with his wound care because information gained 'at the pub' overruled the decision making information given to him by health care providers. Gordon accessed the internet for information from sites that supported the information given to him by the health care team. Incorrect health information is evidenced on the internet and well documented in the literature (Brodie et al 2000; Impicciatore et al 1997).

The increasing workload of health care professionals and reduction in staffing and clients daily responsibilities often affect the amount of time available for service provision and self-care respectively. Time restraints were evident for Todd, Gordon, and the NP and therefore reflected in Todds' decision making, the NPs' communication style, and ability to further assist Todd as previously mentioned.

Deteriorating physical conditions and increasing co-morbidities increase the difficulty of self management and decision making. Todds' chronic illnesses had progressed to a stage where he had severe co morbidities while Gordons' chronic illness was simpler to manage.

Socially and emotionally Gordon was much happier and healthier than Todd, whose angry and aggressive manner interfered with the NP/client rapport. As noted in the literature, Todds' lack of social supports and increased daily stressors, managing activities of daily living and minimal financial resources are reflected in his decision making with poor self caring outcomes. In contrast, Gordons improved outcomes, resulted from his reduced stressors and socially supported, decision making (Adams and Drake 2006; Adams et al 2001; Bechara 2004; Cooper et al 2003; DiMatteo 2004; Ganzini et al 2003).

Initial review suggests Todds' case abounds with poorly understood decisions (as judged by the NP and extended medical, nursing, allied health team). When viewed with reference to the themes in table 1, it is not surprising that he was resistant to treatment. His extensive co-morbidities and episodes of verbal



aggression resulted in the NP communication style moving between collaborative and encouraging to direct, depending on personal risk and medical urgency. Multidisciplinary team collaboration was further fragmented by unpredictable decisions, waiting lists, health professionals being in four different communities across two health areas services and three divisions of general practice.

## CONCLUSION

Decision making is an inter-relationship between the nurse and the client, and is definitely multifaceted. So in asking; 'Is it me? Or is there something in the water?' a significant part was the NP and with added knowledge and understanding of the barriers affecting client decision making, short-term and long-term strategies can then be implemented to improve client care. In the context of the rural client with chronic illness, awareness of communication styles and improved communication techniques, psychosocial emotional and practical support will improve their decision making capacity. Rural health professionals need to adapt their practice to the clients' context to assist in achieving optimal outcomes. There is nothing in the water and it is quite safe to drink.

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# Creating a new cardiac service: the Brisbane experience

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## KEY WORDS

Paediatric Intensive Care Unit, amalgamation, merge, staff, change management, change dynamics

## ABSTRACT

### Objective

This article discusses the creation of a new paediatric cardiac surgical service via the merging of two units.

### Setting

In 2005, the Queensland Government made a commitment to improve health outcomes for Queensland's children. This pledge included a review of paediatric cardiology and paediatric cardiac surgery. A recent cluster of deaths following cardiac surgery at The Prince Charles Hospital (TPCH) and concerns expressed by clinicians regarding the adequacy of the service, resulted in the review being commissioned. A panel of well respected, eminent professionals were appointed with the brief to review the adequacy of paediatric cardiac services in Queensland, to determine the optimal configuration of the cardiac service and to also make recommendations to ensure a high quality of service in the future.

### Conclusion

The process of amalgamating the two units and creating a new cardiac service has increased output in terms of surgical cases. The care of cardiac children in Queensland is now undertaken from a major specialist children's hospital. However, the costs associated with the amalgamation have been high, particularly in terms of training staff and development of infrastructure. The dynamics of change whilst prioritised by management resulted in a highly stressful working environment and a number of staff resigned. Eighteen months post merge, the morale within the unit has improved and staff are working positively towards a cohesive unit.

## INTRODUCTION

An extensive review of the care of paediatric cardiac services in Queensland provided at The Prince Charles Hospital (TPCH) in Brisbane, Queensland was performed in 2006 (Mellis report 2006). The recommendation was made that children with congenital and acquired heart disease would be better managed within a dedicated, tertiary, paediatric hospital (Mellis 2006). Extensive negotiations occurred between Queensland Health, Mater Health Services and the existing paediatric cardiac service, located at TPCH. What transpired over a two year timeframe was the creation of a new paediatric cardiac service at the Mater Children's Hospital (MCH).

In May 2008, the Queensland Paediatric Cardiac Service (QPCS) was established at the MCH in Brisbane. Surgeons, perfusionists, medical and nursing staff were recruited to create this service within the existing Paediatric Intensive Care Unit (PICU). The ten bed PICU developed into 19 beds. Significant infrastructure was designed and construction took place over 18 months within a working unit. Additionally, cardiac catheter laboratories and dedicated theatre space were developed. An existing ward within the hospital was redesigned to care for the cardiac patients and their families. Some medical and nursing staff from TPCH agreed to join the new service, and existing MCH, PICU staff voluntarily spent time in various units within Australasia to either learn or consolidate their paediatric cardiac intensive care skills. This ensured that the service was sustainable from a nursing perspective. The aim of this review was to describe the impact of creating a new paediatric cardiac service on human resources, staff retention, change management, infrastructure, medical and nursing care planning for cardiac patients and management.

Since 1964 paediatric cardiac surgery has been conducted in Queensland at TPCH in conjunction with adults with acquired and congenital cardiac disease. On average, six paediatric cardiac surgical

cases per week were performed (Mellis 2006). The PICU at TPCH was an annex of the adult unit and was supported by a Paediatric Cardiac High Dependency Unit and a Paediatric Ward. An extensive network of health professionals at TPCH supported children and their families throughout hospitalisation and provided co-ordinated ongoing care including liaison with community health service and groups.

The model of centralised cardiac care is not uncommon, replicated in a number of hospitals internationally (Pearson 1997). However, it is now acknowledged that paediatrics have greatly improved outcomes when cared for in dedicated paediatric tertiary hospitals (Pearson 1997; Aylin 2004; Wilson 2008; Marcin 2005; Jenkins 1995). This understanding coupled with the recent cluster of increased mortality at TPCH prompted a review of the service and an audit of outcomes. Statistical analysis of the TPCH versus Starship (Auckland, N.Z) outcomes confirmed that TPCH trended towards a higher mortality rate, yet given the small numbers these figures were not statistically significant (Mellis 2006). The review also highlighted the unsustainability of three PICU's in Brisbane; the fragmented service delivery; the poorly resourced paediatric aspect of TPCH and dysfunctional staff dynamics. The centrepiece and agreed consensus of the review was the recommendation that a single children's hospital for Queensland would better serve the needs of Queensland children (Mellis 2006). These recommendations would be developed and implemented over many years. In the interim, the paediatric cardiac service was to be transferred to one of the two existing PICU's in Brisbane. These recommendations were reported to State Cabinet in June of 2006. Ultimately, the MCH, a public hospital administered by the Mater Health Services was chosen to accommodate the QPCS.

## METHODS

**Literature Review** An extensive literature search on Medline and Cinahl via Ovid, was performed to find similar descriptions of a merge of two medical services.

**Human resources and change dynamics** A working party was established to manage human resources. The current staff numbers and abilities with cardiac care were assessed, and the number of staff predicted to accept a transfer to the MCH with the Cardiac Service was identified. Significant training and staff recruitment need was identified. Projected staff requirements was calculated on a predicted occupancy of 80%. In terms of managing the change, there was an acknowledgement from the outset of the potential impact of change on staff from both units. The effect on staff retention and morale was also identified as significant, with a need to manage this issue pro-actively.

**Building and infrastructure** Children at TPCCH were cared for in a four bed area within an adult ICU. The MCH PICU consisted of ten beds. The new PICU needed to accommodate medical and surgical patients with all PICU beds having the capacity to care for the entire range of possible PICU admissions. The increased PICU beds brought the total number of beds including cardiac PICU beds to 19. The ward area needed reconfiguration to better meet the needs of cardiac children, and in particular a 'Close Observation' area was designed and built

**Care path planning** The established routine for cardiac pre and post operative management from TPCCH was determined. The process was reviewed in consultation with the newly appointed Director of the Queensland Paediatric Cardiac Service. New cardiac care pathways were developed for use in the new service. Trials were performed at TPCCH prior to the amalgamation with improvements made where required.

**Costings** Costings were delineated between establishment of the new service and the ongoing management of the service.

## FINDINGS

### Literature review

Limited academic literature was available on the topic of PICU's or ICU's amalgamating. There have been similar merges in Paediatric cardiac units in the past. Green Lane Hospital in New Zealand transferred

their paediatric cardiac service to Starship Hospital in 2003 following an extensive review (Wilson 2008). In the U.K, cardiac care for children transferred from an adult based hospital to Bristol Children's Hospital, and yet another merge of paediatric services occurred in Canada in recent years. Despite this, there is very little literature on the subject of merging units. The existing literature discusses corporate mergers wherein the immediate staff and environment remain constant. Literature that discusses the emic perspective of merging clinical environments is rare to non-existent.

### Human resources

Paediatric clinical staff from TPCCH were offered the opportunity to transfer with the Queensland paediatric cardiac service. Unfortunately, the number of staff that opted to transfer was inadequate to sustain the service. A number of MCH staff rotated to TPCCH for a period of up to three months however this was not sufficient to provide adequate numbers of nursing staff with the appropriate knowledge and skill level required for paediatric cardiac services. To address the shortfall a plan was devised to send MCH nursing staff to work in other cardiac units across Australasia. This plan required a great deal of resources both to sustain the staff being sent but also as a means of creating a learning environment in the host unit whilst simultaneously maintaining a working roster at 'home'. Units that hosted the MCH nursing staff were Westmead Children's Hospital, Sydney, Royal Children's Hospital, Melbourne and Starship Hospital, Auckland, New Zealand. Fifteen MCH, PICU nursing staff volunteered to go to these units from 3-12 weeks. Six ward nursing staff were also sent to similar ward settings in the host hospitals.

The experience yielded from this time varied by individual and by host unit. Some nursing staff found the experience fantastic, and gained a vast amount of knowledge relating to paediatric cardiac surgery. Some staff found the experience intimidating and overly challenging. With our sincere gratitude, the staff and educators in the respective hospitals invested considerable time in the MCH nursing staff. It was understood that by accepting the MCH nursing

staff it imposed considerable strain on these units and it was greatly appreciated.

### **Creating one team change dynamics**

Creating the infrastructure for the new QPCS and educating staff whilst challenging, significantly pales in comparison to the challenge of merging two medical and nursing teams into one and generating a multidisciplinary team that would provide excellence in care. Communication was highlighted early in the process as the vital key requisite to keep staff morale high and enable staff to cope with the extensive change placed upon both their working environment and working relationships. The principles of effective change management were emphasised throughout the amalgamation. Hospital management at the MCH employed an independent and neutral group which was staffed by psychologists who specialise in facilitating organisational change, to work with both teams and provide support throughout the merge period. The goal of the program was threefold and included:

1. identifying current strengths within the change process;
2. discussing any current issues, and challenges stakeholders may be encountering; and
3. identifying the most appropriate change management strategies to be implemented on both campuses, to ensure a smooth transition of the Queensland Paediatric Cardiac Service to the MCH.

Focus group and individual consultations were offered to all staff prior to, during and following the merge. Participation was voluntary and whilst a synopsis of topics discussed was presented to management, the staff involved and their comments were treated confidentially. Staff were encouraged to speak liberally about how they perceived the changes and what they foresaw as the units merged. Myths abounded - not malicious, but largely misinformed. These sessions helped to dispel untruths and identified areas of concern for management. Some of the major concerns cited by staff effected by the merging of two units were:

- loss of unique identity
- high degree of uncertainty
- fear of the merge changing successful team dynamics
- concern about stress levels for clinical staff and management
- difference in unit culture creating conflict
- transport issues and significant concern regarding the impact of an increased commute
- altered shift pattern - moving from a eight and ten hour shifts to 12 hour shifts
- loss of confidence in service delivery
- loss of rapport in relationships
- loss of supportive working environment
- poor financial incentive
- fear of working in a new environment
- grief of losing familiar work environment and work relationships
- concern for those staff that are left behind
- fear of the media picking up on 'low morale=poor service' image
- impact on skill mix giving the loss of staff not merging
- perceived inexperience at MCH
- uncertainty of working under new management
- concerns regarding how children and families were managing the transition
- increased work load due to larger unit and less experienced staff
- concern that confirmed annual leave requests would be lost
- perceived sense of a 'takeover'
- perception that senior MCH nursing management do not value their expertise and were nonplussed about difficulties associated with the transfer
- perception that input is not valued by other team members

The independent team also used these sessions to guide staff to identify perceived strengths associated with this extensive change process. Staff

acknowledged that continuity of care would improve in a stand-alone paediatric specialist hospital, and that this was an opportunity to develop a new identity and a culture free of dysfunction and they identified significant personal resources to apply to the move. Staff were also asked what they perceived would aide them throughout the transition period. The following answers were amongst those provided:

- consistent, reliable and regular communication;
- flexible rostering;
- advice on managing stress;
- mock scenarios conducted at MCH prior to the move;
- extensive orientation; and
- planned social activities to facilitate team bonding.

An extensive report was prepared by the facilitating team which was distributed to management and liaison staff. This enabled management to understand what the major areas of concern were for staff and develop appropriate strategies to manage these concerns.

The staff from TPCH were offered a monetary incentive to relocate to the MCH with the transfer of Queensland Paediatric Cardiac Services (QPCS). This was paid after 12 months and then again at 24 months, with an agreed 'ruling' of no redeployment within the hospital for the first six months and free car parking for a period of time, as TPCH staff were accustomed to free car parking at TPCH. Despite the incentives offered only 12 Full Time Equivalent's (FTE's) chose to shift to the Mater PICU. The cardiac ward attracted 29.4 FTE staff.

Unfortunately there were no such incentives for the MCH team. The MCH staff endured a huge load throughout the construction period, the additional educational requirements and the phenomenal recruitment of staff. The impact on MCH nurses was verbally acknowledged by management but at times staff felt very exhausted from the impact of sustained and substantial changes over a prolonged period of time whilst still maintaining a high standard of care to the patients and their families.

### **Building and infrastructure**

Designs for the expansion of the existing MCH PICU, operating cardiac theatre and cardiac catheter lab were developed and after broad consultation and collaboration; construction began in February, 2007.

Construction within a functioning unit was challenging - all services needed to remain operational and compromises abounded. Retrieval equipment was housed on a different floor of the hospital, stores and medication rooms shifted, beds closed, dust, and workmen traipsing through the unit, cementing and scouring floors and drilling and jack hammering for hours on end. On many occasions patients needed ear protection applied. Construction work continued over an 18 month period. New storerooms, isolation rooms, staff tea room, parent interview rooms, parent accommodation, office space and nine new paediatric intensive care bed areas were created taking the total for PICU to nineteen. A cardiac catheter lab was created, as was a new operating theatre, and areas for perfusionists within theatre. The paediatric oncology service was transferred to the RCH (Brisbane) to make space for the provision of a cardiac ward. This ward area was renovated to better suit children with cardiac disease processes and their families. Cardiac monitoring capability was established which articulated seamlessly between theatre, PICU and the ward. This enabled continuity of monitoring throughout the child's admission with electronic storage of all events.

During the planning phase there was overall goodwill on both sides. Liaison staff were nominated for each hospital who worked tremendously hard to promote communication between management, clinical staff, engineers and contractors. The liaison staff diligently oversaw physical change and patient movement. However there were some miscommunications and assumptions made on both campuses prior to the merge with deleterious results. An example of this was the instillation of telemetry into the cardiac ward. As per the cardiologists request, telemetry was installed throughout the cardiac ward. Commissioning of telemetry for each bed area only

occurred. This was not sufficient and the literal interpretation unfortunately excluded bathrooms, corridors and importantly the playroom. The process of reviewing this shortfall in telemetry involved re-requisitioning engineers and ordering equipment from the original source plus its installation, a process which caused stress, delays and increased costs.

### Care path planning

PICU and ward occupancy, in addition to patient movement was estimated using the TPCH model that was in place prior to the amalgamation. It was anticipated that the Average Length Of Stay (ALOS) in PICU was five days; which included two days in the immediate acute post-operative phase and three days within the intensive care unit but considered to be High Dependency patients. Transfer to the ward was expected to occur on day six with another five to seven days as an inpatient in the cardiac ward. Within six months the ALOS within PICU was reduced to three days. This has ensured that activity can increase up to ten cases per week.

Staff work routines have altered with the new bed area set ups and the altered physical layout of the unit. Some change has been as a consequence of new technology and different equipment. Additional Clinical Support Nurses (CSN) were required for each shift to support the disproportionate number of junior staff. Clinical Nurse Facilitators (CNF) were also employed to support educational needs at the bedside. Other staff employed included perfusionists, cardiac catheter laboratory technicians and nurses, and an Extra Corporeal Life Support (ECLS) Nurse Coordinator. Senior nursing and medical members from both the MCH and TPCH units underwent ECLS training in Melbourne at the RCH Melbourne prior to the merge. Another cohort followed shortly thereafter.

### Costings

Total budget cost for current paediatric services in 2005/6 was \$190,264,554 (Mellis 2006). MCH budget was \$71,300,00 and TPCH was \$11,643,754 (Mellis 2006). Costs associated with the development of the QPCS were in the region of \$40m.

## DISCUSSION

TPCH staff undertook orientation to their new workplace at MCH which encompassed learning the clinical information system. This occurred in the month immediately prior to relocating to the MCH. The plan once relocated was for the TPCH staff to work in a supernumery capacity for the initial period and then be 'buddied' with Mater staff in the first few weeks, however clinical demand, inadequate staffing and winter season commencing reduced both of these periods considerably. A number of simulated cardiac based scenarios had been conducted with staff from both units. This gave all staff the opportunity to work together and identify any difficulties with equipment, systems and processes prior to the merge.

The merge occurred on the 20 May, 2008. On this day an exquisitely detailed plan was executed ensuring the safe transfer from TPCH to MCH of children and staff to both the PICU and the newly established cardiac ward. The physical transfer of non-essential equipment occurred in the week prior to the move. Regular elective surgery at the MCH and TPCH was deferred in the week prior to the transfer of services so as to minimise inpatient numbers. Throughout the transfer, provisions were made in case of an emergency admission, unavoidable surgery, and deterioration in patient status or chest re-opening. Contingency plans were made for every conceivable event. Fortunately the transfer occurred according to plan, with nil adverse events. Prior to the merge an invitation was extended to all cardiac children and their families to attend an orientation session at the MCH where they were shown the ward area, the Emergency Department and the Outpatient Clinics.

The QPCS is now over two years post the amalgamation and paediatric cardiac surgery presently conducting up to ten cases per week. Overall unit activity has been high, running at a median of 80% capacity (ANZPIC data 2008/9). There had been a number of teething issues and not surprisingly there was some conflict amongst staff. The workload on all PICU clinical staff has



grown extraordinarily. The staff that relocated from TPCCH have had various experiences since the merge. Some are sincerely happy with the new work environment and are enjoying the challenges of both a cardiac and general PICU. Some however, have experienced varying degrees of difficulty in settling into the new work environment. A significant number - approximately 50%, have resigned. Some of the difficulties stem from corporate and cultural differences between Queensland Health and the Mater Hospitals. Different customs and technology within the unit have also been cited as stressors. Staff have stated that the sheer size of the unit has been difficult to grasp as they were used to a much more intimate unit and felt they were previously able to develop close working relationships with their colleagues. This has been compounded somewhat by 12 hour shift pattern that results in staff not seeing familiar colleagues for weeks at a time.

Staff working in the paediatric cardiac ward have had a slightly different experience in their transition period. They were fortunate to transfer over with a secure senior nursing staff complement. Many staff had transferred from the ward and/or hospital in the period between the announcement of the move and the actual move date. Of those that did stay on for the transfer, many were junior staff. Rotations of ward staff from MCH to TPCCH were attempted prior to the merge. Only two staff accepted this challenge with mixed results rendering the project somewhat unsuccessful. Cardiac ward staff had great difficulties establishing the team following the merge but this problem has abated. Several ward staff have resigned since the merge.

Management continued to support staff during this transition period. However, in hindsight a change management practice that may have improved outcomes, including staff retention would have been having a greater presence of the change facilitators within the clinical areas for the first few months post merge. This may have reduced conflict between staff and minimised detrimental behaviours. Morale was low yet has improved over the last twelve months. Most staff from both hospitals found the experience

exhausting and sick leave was high in the first six months post merge, which is an understandable phenomenon. The majority of staff continues to work towards creating a cohesive unit. Throughout, patient care has not been compromised. Clinical incidents are not in excess of ordinal figures, parents and children whilst not formally surveyed, appear to be satisfied with the emerging service. Physical layouts of the work areas may be suboptimal but staff are creatively managing this and are adapting appropriately.

## CONCLUSION

This entire change process for Queensland Paediatric Cardiac Services had one goal - to optimise care for children in Queensland with cardiac disease. The creation of the QPCS was only one step in the process towards creating a single Queensland Children's Hospital wherein the RCH (Brisbane) and the MCH will amalgamate into one late 2014. Construction of this hospital has commenced amidst much controversy, and hopefully lessons learned from the transfer of paediatric cardiac services will be used to inform the much bigger amalgamation to the Queensland Children's Hospital.

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# Investing in patients' nutrition: nutrition risk screening in hospital

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## KEY WORDS

Australia, evidence translation, hospitalisation,  
malnutrition screening, malnutrition, nursing.

## ABSTRACT

### Objective

This paper explores the current state of knowledge and evidence for investing in the nutrition screening of patients in hospital.

### Setting

Hospitals

### Subjects

Hospital patients; nursing care

### Primary argument

Nutrition screening of hospital patients is widely supported in evidence-based guidelines because poor nutritional status has a negative impact, increasing patients' morbidity, mortality and length of hospital stay. Screening is often undertaken by nurses as part of the patient admission process and in conjunction with other health risk screening tools, although the extent of routine nutrition screening in Australian hospitals is unclear. Once a patient is screened and subsequently assessed and diagnosed with malnutrition and treatment is commenced, there is a lack of high quality evidence about the effect of this treatment on longer term patient outcomes. This has most likely restrained nursing decisions about investing nursing resources in routine nutrition screening of all targeted patients.

### Conclusion

Routine screening of hospital patients for nutrition risk early in their admission is obligatory according to best evidence, though not universal in Australian hospitals. Further high quality research (eg., randomised trial) is warranted to determine the consequences of screening which appear to include positive impact of nutritional interventions upon undernourished/malnourished patients. If this data were available, administrators may recognise both economic and patient-centred benefits of investing in systematic nutrition screening.

## INTRODUCTION

In 1859, Florence Nightingale noted cases of under-nutrition in soldiers who were hospitalised in the Crimea, also writing about the importance of nutrition to their overall wellbeing (Nightingale 1859). Over a century later, evidence of malnutrition in hospital patients is a focus of attention because, despite informed practices, malnutrition may still be the skeleton in the hospital cupboard (Weinsler et al 1979) and its treatment unresolved. In developed countries, malnutrition is known to afflict between 20-50% of adults in hospital (Sorensen et al 2008; Pirlich et al 2006; O'Flynn et al 2005; Stratton et al 2004; Middleton et al 2001; Waitzberg et al 2001) also co-existing with other disease processes. There are clear correlations between parameters reflecting poor nutrition such as low body mass index or decreased serum albumin and rate of in-hospital

complications, readmissions and mortality (Correia and Waitzberg 2003). It is well recognised that malnourished patients recover more slowly from illness. They experience more complications such as poor wound healing or altered immune function (Covinsky et al 1999). Thus, undernutrition in hospital patients is a condition that demands serious examination.

### Background

Malnutrition is characterised by a protein/energy depletion which results from too low an intake of food nutrients relative to an individual's requirements (Alberda et al 2006). Illness increases nutrient demand (Allison 2000). There is no universal definition of malnutrition although the Australian Government applies funding reimbursement to public hospitals under case mix using the first definition in table 1.

**Table 1: Definitions of malnutrition**

Author	Definition
Australian Government: Diseases Tabular (AN-DRG 10) (NCCH 2008)	In adults, BMI < 18.5 kg/m <sup>2</sup> or unintentional loss of weight (5%) with evidence of suboptimal intake resulting in moderate loss of subcutaneous fat and/or moderate muscle wasting.
World Health Organization (WHO 1999)	Adults: classification of body mass index: < 18.49 kg/m <sup>2</sup> using reference charts for the relevant population.

No 'gold' standard or single quick measure can indicate presence of malnutrition (Kubrak and Jensen 2007). This demands a detailed patient assessment using physical examination and aspects of the medical history such as gastrointestinal symptoms and biochemistry. Assessment is usually carried out by a dietitian or a clinical nutrition nurse specialist who may use the Subjective Global Assessment tool (Detsky et al 1987) to establish presence or absence of malnutrition.

To facilitate practice, a number of screening tools have been developed to screen patients for risk of malnutrition and systematically identify those who may be undernourished and exclude those with low

risk (Arrowsmith 2000). Each tool uses several indices associated with characteristics of under-nutrition. Some use objectively obtained criteria such as body weight, body mass index (BMI) or other anthropometric measures such as skin-folds or arm circumference and/or biochemical measures. Others use subjective criteria such as reported weight loss and reported appetite change (Anthony 2008). Three screening tools valid for use with hospital patients are given in table 2. These are the Malnutrition Screening Tool (MST) (Ferguson et al 1999), Malnutrition Universal Screening Tool (MUST) (BAPEN 2003) and Mini Nutritional Assessment (MNA) (Kyle et al 2006).

**Table 2: Three validated tools for nutrition screening and their rating systems.**

Tool	Measures used	Target population
Malnutrition Screening Tool (MST)	Rating of two parameters - weight and appetite: Recent unintended weight loss: yes=2; no=0 How much: 1-5kg=1; 6-10kg=2; 11-15kg=3; >15kg=4. Decreased appetite: yes=2, no=0. Summed score of 2 is positive for nutrition risk	Adult hospital patients, oncology chemotherapy and radiotherapy adults; adult renal patients
Malnutrition Universal Screening Tool (MUST)	Rating of three clinical parameters: BMI: >20kg/m <sup>2</sup> =0; 18.5-20kg/m <sup>2</sup> =1; <18.5kg/m <sup>2</sup> =2; Weight loss: <5%=0; 5-10%=1; >10%=2; Acute disease: absent=0; if present=2. Overall risk of malnutrition based on total score: 0=low risk; 1=medium risk; 2=high risk.	All adults including community living adults
Mini Nutritional Assessment (MNA)	Rating of six indicators (lowest score=positive risk): Food intake decline: severe=0; moderate=1; none=2 Weight loss: >3kg=0; unsure=1; 1-3kg=2; none=3 Mobility: low=0; medium=1; independent=2 Acute disease: yes=0; no=2 Neuropsychological state: severe=0; mild=1; normal=2 Body Mass Index: <19kg/m <sup>2</sup> =0; 19 <21kg/m <sup>2</sup> =1; 21 <23kg/m <sup>2</sup> =2; 23kg/m <sup>2</sup> =2. MNA score of 0-11 points indicates possible malnutrition; 12-14=no risk.	Older adults

The MST identifies adults who are at risk of malnutrition using subjective data and has been the focus of evaluation studies in Australia (Frew et al 2010; Isenring et al 2009; Porter et al 2009; Banks et al 2007; Beck et al 2001; Ferguson et al 1999) and overseas (Anthony 2008; van Venrooij et al 2007). It has a sensitivity of 93% in identifying patients with a score of two as being at nutrition risk, with specificity of 93% (Ferguson et al 1999) and is recommended as an easy to use tool for the screening of adult hospital patients (van Venrooij et al 2007). As it does not require a patient to be weighed it can be completed by a patient, carer, nurse or other health professional. Alternatively, the MUST has been extensively evaluated in various international populations and also found valid and feasible for use with adult patients (Stratton et al 2006; Kyle et al 2006). Other nutrition screening tools valid for hospital patients according to a recent Australian guideline by Watterson et al (2009) are the Simplified Nutritional Assessment Questionnaire (SNAQ©) (van Venrooij et al 2007) and the Nutritional Risk Screening (NRS-2002) form (Kondrup et al 2003).

However, in the absence of screening tools, body mass (weight) can be used alone as an indicator to trigger a patient's further assessment. The World Health Organization defines individuals with malnutrition as having a body mass index (BMI) of < 18.5 and getting thinner (BMI=body weight kg/height m<sup>2</sup>) for example (table 1).

It is contended that nutrition screening, or classifying patients to identify those at risk of malnutrition is important to enable systematic identification of hospital patients who are at risk of malnutrition. This allows early nutritional assessment and if necessary, commencement of treatment to arrest nutritional decline and improve patient outcomes (BAPEN 2009).

## DISCUSSION

Intention to screen patients concurs with evidence-based best practice guidelines in Australia (Watterson et al 2009) and in the UK (National Collaborating Centre for Acute Care 2006). In

the absence of screening programs in hospital, however, many cases of malnutrition are missed (Elia et al 2005). This situation is thought to be due to competing demands on hospital nursing staff (Raja et al 2008), increased complexity of patient management in hospitals, increasing age of patients and shorter lengths of in-hospital stay (Frew et al 2010a). Since physicians and nurses assess patients on admission to hospital, it is suggested they are in an ideal situation to conduct nutrition screening as part of that assessment (Green and Watson 2005).

### Malnutrition risk rate in Australia

A nutrition risk screening process is a precursor to more detailed patient examination that is needed to make a diagnosis of malnutrition. The malnutrition risk rate in a study of 5,149 Australian hospital patients amounted to 20% in 2001 (Beck et al 2001) and in 2008, 24% of 3,033 patients (Frew et al 2010a). There is a lack of consistency in published data about screening outcomes nationally due to use of various tools and definitions. Some studies of malnutrition risk conducted in Australia are summarised in table 3.

**Table 3: Studies of malnutrition risk in Australian hospital patients**

Study	Target population	Malnutrition risk rate (% n)	Instrument
Frew et al (2010a)	Adult medical and surgical hospital patients (N=3,033)	24% (n=703)	MST
Bauer et al (2007)	Patients who had fallen whilst in hospital (N=49)	41% (n=20)	MST
Isenring et al (2006)	Oncology outpatients receiving chemotherapy (N=50)	32% (n=16)	MST
Stolz et al (2002)	Out-patients attending Fall and Injury Assessment Clinic (N=90)	12%(n=11) undernourished 45%(n=41) high nutrition risk due to other factors	ANSI: Australian Nutrition Screening Initiative tool
Beck et al (2001)	Hospital patients (N=5,149)	20% (n=1,029)	FBBC screening tool
Ferguson et al (1999)	Hospital patients (N=408)	21% (n=88)	MST

NOTE: 'malnutrition risk' refers to screening that correlates with actual diagnosis of malnutrition (a diagnosis made after further assessment): 20-50% of hospital patients have malnutrition (Sorenson et al 2008)

These results are comparable to a study of 5,089 patients in hospitals in the United Kingdom in 2008 that reported a risk rate of 28% (BAPEN 2009). It should be noted that studies commonly select medical and surgical patient populations and omit others such as maternity and critical (intensive) care patients. The results suggest, however, that with more than one in every five screened patients being found at risk of malnutrition, there are large implications for hospital resources to enable both the screening of all newly admitted patients and also necessary treatments.

### Barriers to screening?

Unlike the UK (BAPEN 2009) there is no universal screening standard nor routine screening for malnutrition in most Australian hospitals (Renkema et al 2007). Furthermore, there is evidence that

competent screening practice is lacking. Raja et al (2008) found low rates of compliance in nurses' screening using both MST and MUST in several wards of three Melbourne hospitals: audit rates were 2% to 61%. After nurse education and staff support over four months, compliance improved to 41%-70%. Nurses found that use of the MST took 'just a few seconds' and the MUST longer- as patients were weighed (p 31). Factors reported to limit the time nurses gave to screening include competing patient care tasks, nurses' skill in use of the tool and acceptance of evidence-based practice. Porter et al (2009) also reported low screening compliance of 17% and 62% in a survey of 46 admitted patients in two Australian hospitals. They found nurses' use of MUST was limited by task priorities and their self-perceptions of skill, and uncertainty about

screening protocols. Alternatively, a recent study of screening of randomly selected acute care hospital patients (n=275) in a tertiary Australian hospital showed that malnutrition was poorly documented. Only 15% of malnourished patients were identified and correctly documented by dietitians as being malnourished in the medical history (Gout et al 2009). Such a system if correctly implemented can have a positive impact on the funding of acute care public hospitals via re-imbursements (Gout et al 2009; Ockenga et al 2005; Raja et al 2004; Ferguson et al 1997). These issues suggest that improvements are needed in managing nutrition-related protocols.

#### **Evidence for improving patient outcomes via screening**

There is some supportive evidence for nutrition screening as a technique with potential for positively influencing patients' healthcare outcomes. A large study of over 5,000 randomly selected hospital patients in 12 European countries found that screened at risk patient status was significantly associated with higher mortality and also longer hospital stay and more complications (Sorensen et al 2008). A natural corollary is, therefore, that focused interventions might be expected to reverse this negative trend. In a randomised trial of early screening upon hospital admission, the screening process was shown to be cost effective and to have an impact on clinical outcome (Kruizenga et al 2005). The process of screening has been shown to improve identification of at risk hospital patients (Ockenga et al 2005) and to facilitate timely referral for further nutrition management (Kruizenga et al 2005). Although studies suggest that individuals in all age groups are at risk of underweight and consequent malnutrition (Banks et al 2007; Frew et al 2010), risk increases with advancing age. Banks et al (2007) found in a study of 2,208 hospital patients in Queensland that the odds risk for malnutrition increased from OR 1.4 (95% CI, 1.2-1.6,  $p < .001$ ) at age 61-80 years, to odds risk of 1.7 (95% CI, 1.5-2.0,  $p < .001$ ) at age >81 years compared to under 40-year olds. Given that 70-90 year old patients account for most hospital multi-day admissions in the state of Victoria (AIHW 2009) nurses should be alert to

the increased nutritional risk of this age group and ensure all are screened for nutrition risk.

All these preliminary data confirm the useful potential of screening. However, the question that needs to be answered is: How effective are patient treatments that are implemented upon diagnosis of malnutrition to reverse nutritional depletion? If these treatments are effective then the investment of nursing time and other resources in the screening process will be worthwhile?

#### **Treatment**

Published evidence-based guidelines for management of malnutrition describe overall patient management (Watterson et al 2009; National Collaborating Centre for Acute Care 2006). The choices available for treatment are: nutrition support via oral, enteral or parenteral routes, with or without food and nutrition advice (National Collaborating Centre for Acute Care 2006). Some small studies internationally have demonstrated that some treatment outcomes are positive. Studies of use of enteral feeding and oral protein/energy nutrient supplementation (in the form of energy-dense liquids) have shown improvements in the global nutritional status of patients (O'Flynn et al 2005; Kruizenga et al 2005). An Australian study of home-based interventions by dietitians that included dietary advice was effective in decreasing nutrition risk (Leggo et al 2008). However, strong evidence of patients' dietary behavioural change to arrest their decline is elusive. A systematic review of the efficacy of dietary advice in changing illness related malnourished patients' eating behaviour found the research evidence to date was inadequate with which to properly evaluate the intervention effect (Baldwin et al 2007). High quality trials with representative samples (eg., randomized trial) are still required to assess these outcomes. One barrier, however, is how to conduct research which might deny patients in a control group a nutritional treatment. Another barrier is the extended time period patients must be followed to determine physiological outcomes. A literature review by Weekes et al (2009) of the efficacy of interventions that might result in improvements in nutritional and clinical outcomes and costs for

patients with malnutrition reports a serious lack of evidence to support interventions designed to improve nutritional care of malnourished patients. Thus, information we need is not yet available.

## RECOMMENDATIONS

The factors canvassed in this paper and found under-reported appear to result from an overall lack of research in the field. Research is desperately needed to show how to improve patient outcomes and to demonstrate the best intervention strategies to use to replete malnourished patients. In short, to warrant the time nurses may be required to devote to collecting the evidence during nutrition risk screening. Nurses should become skilled and expert in rapid nutrition risk screening of patients. In the absence of screening, however, nurses can assist data collection by use of simple measures. These include: recording the weight and height of patients on admission and any factors that impede nutrition—such as chewing or swallowing difficulties, and lower cognitive function. Each of these is a risk factor for development of malnutrition (Felblim et al 2007).

## CONCLUSION

Evidence of malnutrition risk is an important antecedent to longer, more complicated hospital admissions for patients. Medical alerts can be raised by use of easily applied nutrition screening tools. Evidence shows that nutrition screening is obligatory as best practice and that it can benefit undernourished patients through early identification of their nutrition problems at hospital admission and hence can facilitate nutritional treatment. There is a lack of data about patients' response to nutritional interventions, however, and further high quality research is warranted to determine consequences of screening; to demonstrate the effect of nutritional treatments upon nutritional repletion, patient outcomes, and cost. One way to facilitate this research is for nurses to embrace nutrition screening and to undertake research studies in this field. If this data were available, administrators may recognise both economic and patient centred benefits of investing in systematic nutrition screening.

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