What nurses understand by the term evidence-based practice, and how it shapes their clinical decision making.

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Abstract

There are professional and legislative expectations that nurses deliver care to their patients' that is evidence-based. Previous research findings have indicated nurses do not value research in the clinical setting, yet believed they deliver evidence-based practice.

This study explores what practising nurses understanding by the term evidence-based practice and how it shapes their clinical decision making. There was interest in the individual nurses' experiences and interpretations, as well as their preparation for practice. Contextual influences were also a focus, to give insight into influences that might affect the delivery of evidence-based practice.

A qualitative interpretive research approach was used, and implemented using a naturalistic paradigm. Case Study methodology, using complexity theory, provided the theoretical framework to explore contextual variables that might affect the delivery of evidence-based practice. Relationships, interdependencies and interconnections became the focus to allow a depth to the inquiry and understanding of the case. A review of the literature, focus group and semi-structured interviews (*n=10)*, provided the source of data collection, and were completed during 2006.

Despite evidence-based practice being a professional and legislative requirement of the practising nurse, there remains a significant gap between what the professional and legislative documents state and the reality of clinical practice. The extent to which evidence-based practice is delivered within the case is based on the extent to which evidence is incorporated in policy statements. There are concerns associated with education, organisational culture, and contextual variables which impede the delivery of evidence-based practice. Existing skill levels are variable, and there is potential to encourage individual creativity and contribution, but there are significant skill deficits which need to be addressed.

Findings confirm progress is being made, but also reinforce the need for further education review and support, and a culture 'makeover' in some contexts within the case to advance the evidence-based practice agenda.

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What nurses understand by the term evidence-based practice, and how it shapes their clinical decision making.

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CHAPTER ONE

Introduction

Nursing is an evolving discipline. There are many challenges that face nurses today, not least of which is the state of transition of the preparation for practice from hospital based training for nurses to Bachelor of Nursing graduates. The workforce has a mix of nurses: some of the older hospital trained nurses who sit comfortably within the Nightingale tradition of being 'good' unquestioning women, and others who have been trained to challenge and work within an evolving nursing workforce, expected to critically analyse and question practice. Inevitably there are tensions between the different groups of nurses as to what constitutes 'good' practice, and how to achieve it.

Nursing as a profession is also evolving in terms of practise standards and the incorporation of evidence-based practice is one example. According to Ellis, Howard, Larson & Robertson (2005) evidence-based practice is the new paradigm in healthcare practice, and the most important contemporary initiative committed to reshaping thinking and practice. Educational preparation for nurses to implement evidence-based practice has been a focus of some attention, with criticism being expressed about a lack of programs to support existing older hospital trained nursing staff to keep pace with this paradigm shift. Educational content of university programs preparing under-graduates has also attracted criticism, with Tanner (2007) contending that there are controversies regarding the number of competencies and extensive list of content. It may be argued that nursing education is not adequately supporting its current professionals to deliver evidence-based practice in contemporary practice settings, nor is it preparing undergraduates to face the challenges of clinical practice.

The complexity of healthcare is an added factor with dynamic workplaces influencing practice standards. Economic rationalism provides a variable, with potential issues associated with resourcing services and funding educational opportunities. A society that is more informed and consequently has a changing expectation of the healthcare system, and professionals working within it, provides another challenge in day to day practice.

This case study of "what practicing nurses understand by the term evidence-based practice and how it shapes their clinical decision making" explores the multifaceted nature of individuals as well as the context in which individuals work. Particular attention is focused on the relationships between intra-professional and inter-professional groups, and also inter-departmental differences in the interpretation and implementation of evidence-based practice.

1.1 Personal Information

I am a lecturer for two Postgraduate Certificate Programs, both of which attract nurses from the hospital that is the setting for this case study. I also deliver one day seminars to support nurses in clinical practice to meet the educational requirements of the Health Practitioners Competency Act (HPCA) (2003). Some of the seminars are delivered on site consequently there is an established relationship between myself as researcher, and the organisation, however I am an independent consultant and educator, rather than an employee. My assumptions prior to the study related to the delivery of evidence-based practice within the service area of the case were:

- Education is the key.

  The implementation of evidence-based practice requires education of all staff. With my focus on postgraduate nursing education, there has been some emphasis on recruiting older hospital trained nurses to undertake the postgraduate certificate program, and provide them with support to enhance their knowledge and practice to prepare them for contemporary practice, specifically evidence-based practice. Nurses holding senior positions were particularly supported by their employer to participate in postgraduate education, because of their 'change-agent' capacity and requirement to fulfil their senior role responsibilities. The recruitment of more junior staff was encouraged but to a lesser extent, as it was believed that they already had had some formal instruction on evidence-based practice. There was also acknowledgement however, that junior staff needed support to integrate their formal instruction on evidence-based practice into their actual nursing practice. As the organisation had supported some capacity building of postgraduate certificate graduates working within their workforce, I made the assumption that evidence-based practice would be established. An earlier

research project (Wilson, 2004) identified however that research was not valued in the clinical setting, raising questions as to what nurses understood evidence-based practice to be, and the need to explore issues associated with its implementation.

- Inter-disciplinary awareness of evidence-based practice within the different health professional groups of the case would be enhanced by the educational opportunities in place for nurses. Each discipline's own professional body of knowledge and practice would combine to provide a synergistic effect, and secure the delivery of 'best practice' to the patients experiencing a healthcare episode at the hospital.

- Contextual issues that influence the delivery of evidence-based practice could be overcome to some extent with education.

Personal experience and interpretation of reality, plus literature reviewed prior to undertaking this study, supported the assumptions to some extent. A further literature review, however, including works on complexity theory, suggested a potential contradiction related to contextual issues, to be challenged and explored in this present study.

1.2 Justification for the research.

The HPCA (2003) details the scope of practice for registered nurse competencies, including competencies related to patient assessment and management "which is responsive to patient needs, and which is supported by nursing knowledge and evidence-based research". The Nursing Council of New Zealand (NCNZ) is the statutory authority which "sets and monitors standards in the interest of the public and the profession. The Council's primary concern is public safety" (NCNZ, 2007b). There is a need for research to ascertain whether the legislative requirement for Health Professionals to provide evidence-based practice is in fact translated into the reality of clinical practice.

Following the previous research finding (Wilson, 2004) that research was not valued in the clinical setting, some effort was needed to identify the 'gaps' in the existing education programs which are preparing the nursing workforce to provide evidence-based practice and hence meet the legislative requirements. This is relevant to both postgraduate and undergraduate programs, and supporting the current nursing workforce and the nurses of the future. The 'gap' analysis will surely influence program development to ensure education is congruent with the needs of contemporary nursing practice.

The increasing complexity of healthcare is challenging the health professionals to maintain currency, in the face of increasing technology, information, skill development and acute intervention. This is compounded by the many complexities patients bring to their healthcare episodes, including chronic health issues and treatments associated with them. Managing patient risk becomes a bigger challenge as patient acuity and issues around pre-existing compromise are the reality of day to day practice, and there are practice issues and clinical questions which may not be addressed within the existing literature to support 'best practice'. Identifying research questions' is the first step to seeking answers and if this is not happening within the clinical context, evidence-based practice implementation is going to be limited.

Contextual issues within an organisation invariably have an impact on how the organisation functions. The integration of evidence-based practice within the hospital is an expectation of all Health Professionals. Exploring the personnel and departmental relationships and interconnections throughout the hospital was expected to provide insight as to the strengths and weaknesses and identify those influences which enhance or impede the delivery of evidence-based practice. This may allow for strategies to be put in place to secure consistency in the delivery of evidence-based practice throughout the organisation.

1.3 Personal comment

I would like to introduce myself, and my viewpoint of the position of researcher.
My nursing experience started in 1973, and with 30 years uninterrupted service I have experienced first hand the many changes in education and service provision that have brought nursing to its present place. My passion for clinical nursing was located predominantly in the intensive care specialty practice setting, where complexity was a

feature. With 20 years of experience at the bedside and teaching an 'in-house' intensive care course to registered nurses to support their orientation and professional development, technical intervention in patient management was a part of day to day practice that challenged nurses in the delivery of nursing care. Finding a balance with the humanistic aspects and the deeply embedded essence of caring was another equally important dimension. On reflection there was little research evidence to support what we did. When clinical questions arose, requiring action, practice was predominantly influenced by

- our own experience,
- collaboration with colleagues,
- sourcing expert advice,
- intuition, and
- trial and error, informed by a broad knowledge base and clinical experience.

These sources of information, although considered valuable, when used alone or in isolation from broader research knowledge are flawed (Thompson & Dawding, 2002). There was never any question in our minds that we collectively felt we were doing a good job in a challenging clinical context, but there were clinical questions that frequently presented during day to day practice.

For the past 10 years I have been removed from the clinical context and embedded in nursing education, delivering postgraduate nursing qualifications and professional development. This places me in the position of some dislocation, so that my knowledge of evidence-based practice is what I have learned through academic pursuits, rather than clinical application. I have, however, retained my interest in clinical nursing and feel committed to injecting some passion into nursing practice through educational opportunities, which includes the integration of evidence to achieve 'best practice' standards. I am constantly reviewing teaching material, auditing student assessments and consulting service providers to support program development and provide appropriate education to meet the needs of contemporary nursing practice. I am therefore enthusiastic in my pursuit of what the participants of this research wish to share regarding their experience and perceptions as together we explore the research question "what practising nurses understand by the term evidence-based practice and how it shapes their clinical decision making".

1.4 Structure

The second chapter provides a review of the literature. The subjects explored include complexity theory, evidence-based practice, and clinical decision making. It seemed reasonable, given the size of this study, to limit the literature review to the above subjects to provide an overview and make the links between the theoretical framework and practice issues clear. However it was anticipated that the ubiquitous nature of the subject and the many influences that may have some effect on the delivery of evidence-based practice, would require the incorporation of further literature during the study to confirm study findings.

Chapter three explains the methodology used to explore the research question, "what practising nurses understand by the term evidence-based practice and how it shapes their clinical decision making". This is an inquiry that explores nurses' experience and viewpoints and their individual interpretations of meaning. A qualitative interpretive research approach, using a naturalistic paradigm and case study methodology provides the framework to navigate the complexity of the case, to seek understanding.

Chapter four discusses the analysed data gathered from a focus group and semi-structured individual interviews. The researcher also compiled notes during the data collection process. The research content analysis identified various themes which fell into two distinct areas, firstly nurse's preparation for the implementation of evidence-based practice, and secondly the complexity of the clinical area and factors that may influence the delivery of evidence-based practice.

Chapter five offers some discussion related to the research findings. Following the same distinct areas as the previous chapter, namely individual nurses' preparation for the implementation of evidence-based practice, discussion related to the participant nurses understanding of what evidence-based practice is, and education issues related to its implementation. The complexity of the clinical area and factors that may influence the implementation of evidence-based practice explored context and culture, also leadership and ethics.

Chapter six provides a conclusion and recommendations from the insights gained from the study. Limitations of the research are identified, some recommendations discussed, and suggestions for further research have been put forward.

I wish to note that the inquiry focused on evidence-based practice and how it influences clinical decision making. The literature on clinical decision making is rich, and the educational support to achieve the necessary skills, and practice implications are considerable. The inquiry has not delved into clinical decision making in its entirety, however, but rather considered the extent to which evidence-based practice is integrated, realising it is only one aspect of the clinical decision making process.

CHAPTER TWO

Literature Review

The literature on evidence-based practice is rich, and the challenge of implementing it in every day practice is well documented. I have endeavoured to source a global appreciation of the interpretation and implementation of evidence-based nursing practice, seeking an understanding of the individual contributions as well as the contextual variables which influence its incorporation in the clinical practice setting. To achieve this I have located the study within a complexity theory paradigm, in an effort to capture the reality of the clinical practice setting. Research into the implementation of evidence-based practice using traditional theoretical frameworks has been included in the review of literature, and informed the discussion; interpretation using a complexity theory lens has, however, explored the multifaceted nature of the environment in which nurses' practise, and highlights the challenges nurses face in navigating through the complexity of each new situation.

Perhaps the biggest challenge for me in developing the discussion around evidence-based nursing practice is making explicit the uniqueness of the nurse / patient relationship. Theory can offer knowledge and inform practice, however "nursing is an experience lived between people. In its very essence nursing is a relational living experience" (Doane & Varcoe, 2005, p4). This does not deny the importance of delivering care based on the best evidence, but highlights it is only a part of the overall relationship and experience.

This is a review aimed at supporting the design of the study, as well as informing the data analysis and discussion. I have attempted to locate the reader to a complexity theory platform to view findings with an alternative perspective to the traditional way of thinking. The very nature of complexity theory would criticise isolating the individual components for definition, but rather considers their interconnectedness and interdependence. In the interest of clarity the topics are defined here as individual strands, however in reality they weave together, with each affecting the other.

The literature to support the research question, to explore "what practising nurses understand by the term evidence-based practice and how it shapes their clinical decision making", has been identified under the following subjects:

2.1 Introduction to Complexity Theory

2.2 Evidence-based Nursing Practice

2.3 Clinical decision making

2.1 Introduction to Complexity Theory

Research in nursing is not new and can be traced back to Florence Nightingale, but it has been in more recent times, since around the 1970s, that there has been a major proliferation of nursing research. Like other health professionals, nurses have generally viewed the world and explored their questions using a traditional scientific framework to seek understanding. The traditional theory acknowledges the legacy of Newton, which is mechanistic in its approach, viewing the world as a series of systems and sub-systems (Holland, cited in the Center for the Study of Healthcare management (CSHM), 2003). Newtonian reductionism describes simple laws of nature by breaking a system into smaller bits, and studying them individually before putting them back together again and drawing some conclusion. There is an assumption of stability of the parts. Newtonian reductionism can be credited for making huge contributions to our understanding of our world, but its 'reduce and resolve' approach and characteristics of predictability, constancy and control are a source of limitation (Gribbin, 2004), and do not accommodate some of the more complex areas of interest that we encounter in everyday life and practice and that need to be explored. It is therefore argued that the traditional theoretical framework does not serve us well in seeking answers to many of our questions. Indeed it has been blamed for incessant change in our health systems, as improvements have been sought and changes implemented based on a lack of appreciation of the consequences of change associated with issues around lack of control and unpredictability (CSHM, 2003). The traditional framework is not appropriate when no part of the equation is constant, independent or predictable (Plsek & Greenhalgh, 2001). Consequently traditional thinking and actions have not necessarily led to desired improvement (CSHM, 2003).

Complexity theory which has been described as the science of the 21st century (Holland, cited in CSHM, 2003), emerged during the 1980s, offering a new lens to explore the world. It does not deny the scientific theory of the past and the enormous contribution of Newton and others, but looks beyond individual systems and sub-systems and acknowledges the importance of relationships and context. It considers different aspects of relevance that have been overlooked by the more traditional scientific approaches (CSHM, 2003). Unlike Newtonian science's metaphor of 'machine', complexity theory considers the 'living system', with its non linear characteristics and ability to adapt. There is reference to patterns and relationships among the parts, and also the unpredictability associated with working with people in a dynamic system or organisation such as a health system. (Plsek & Greenhalgh, 2001). Gribbon (2004) provides some insight into the underlying basis of chaos and complexity theory in his book 'Deep Simplicity', contending that it is based on two simple ideas, the sensitivity of a system to its starting conditions and feedback. Gleick describes that "sensitive dependence on initial conditions has an inescapable consequence of the way small scales intertwine with large" (1987, p 23).

In order to have some basic understanding of complexity theory or a complex adaptive system, I will discuss its congruency with areas relevant to healthcare and key players working within it, such as nurses and other health professionals. Systems or organisations are made up of a collection of sub-systems and individuals with some freedom of independent action. Such action may not always be predictable, but will have some impact on other sub-systems or individuals within the complex system, potentially changing the context. There is a notion of interconnectedness and interdependence. Plsek and Wilson contend that "In complex systems unpredictability and paradox are ever present and some things will remain unknowable" (2001, p2).

In healthcare complexity is a fact of life. The human body and its biological and social systems have a complexity of functions that are for the patient challenged, and challenging for healthcare professionals, with their tools and armoury of multiple interventions. There is seldom a single 'cause' or 'cure' for the many variables patients present during their healthcare experience, and their response to intervention may be unpredictable. Wilson, Holt and Greenhalgh (2001) consider different levels of complex systems and behaviours that the human body is composed of and relies upon:

- Multiple interacting and self regulating physiological systems, to achieve and maintain homeostasis. They include a biochemical and neurological hormonal / endocrine feedback loop.
- Individuals' behaviour and responses are partly determined by adaptive responses, but also by an internal set of rules based on past experiences.
- The relationship network between the biological and social systems can be extremely powerful and varied, making predictability impossible.
- The wider socio-political and cultural systems can have a significant influence on outcomes.
- All interacting and interconnected systems are by nature dynamic.
- A small change in one of the systems can have a much larger change elsewhere, owing to an amplification effect.

It is not surprising that patients presenting for a medical intervention with some pre- existing condition are at much greater risk from any procedure than are well persons, as their sensitivity or 'starting conditions and feedback' (Gibbon, 2004) may be already compromised, adding to the complexity and unpredictability of their situation. Wilson et al. (2001) refer to a complex interplay between physiology and behaviour, and acknowledge that illness arises from dynamic interactions between and within systems, with rarely a single component compromised. It is not surprising therefore, that both physiology and more particularly pathophysiology are neither predictable nor safely modelled in a simple cause and effect system, yet the latter underpins the problem solving approach commonly used to manage clinical episodes.

Healthcare managers and leaders, like their clinical colleagues, have to address the growing complexity of healthcare and look for an alternative to the machine metaphor, which considers parts of the system in isolation. Aiming to have the system / service run like a 'well oiled machine' with individual systems or services creating their own efficiencies and having their own assigned budgets has been the focus of past restructuring and labelled 'Service management'. Complexity based organisational thinking advocates that goals and resources be established collectively with the focus towards the whole system, and sees the relationship as more important than the parts themselves. (Plsek, &

Wilson, 2001). The interconnections between the various systems / services require fine tuning if patient outcomes and efficiencies are to be maximised and risk management minimised. The implication is that change management in our present healthcare climate needs to accommodate the unpredictability of the services and individuals, recognise the incompatibility of 'command and control' and move the focus away from overcoming resistance. Detailed targets and specifications need to be replaced with harnessing of the natural creativity of the individuals within the organisation, facilitated by such principles as generative relationships and minimum specifications, which yield more creativity. (Plsek & Wilson, 2001). "Treating organisations as complex adaptive systems allows a new and more productive management style to emerge in healthcare" (Plsek & Wilson, 2001). A transformational management style would be well suited to a complex adaptive system that embraces individual creativity and contribution (Rycroft-Malone, 2004). It would support autonomous practice by individuals confronted with the inevitable unpredictability of events and difficult goals, allowing the emergence of creative progress (Plsek & Wilson, 2001).

Education and life long learning are required of registered nurses (NCNZ, 2007b), in their pursuit of annual practising certificates under the HPCA (2003). There are documented competencies for the different levels of nursing practise, and in the more local contexts, an abundance of policies and protocols dictating minimum standards to be followed and met. Plesk and Greenhalgh contend that there are "few situations in modern healthcare, (which) have such a high degree of certainty and agreement, and rigid protocols are often rightly abandoned" (2001, p7). Traditionally nursing education has largely focused on enhancing competencies, including knowledge, skills and attitudes. To meet the challenges of a complex service, whether that be organisational or dealing with individuals with their unique healthcare experience, where unpredictability and paradox are ever present (Plsek & Greenhalgh, 2001), one has to question whether competency is enough. Fraser and Greenhalgh (2001) argue that educators should be challenged to enable not just competence but also capability. In the present context of specialty and advanced nursing practice, within a complex healthcare environment, personal development of capability is needed to support the "process of developing new behaviours in the context of real life experiences, (which) enables individuals to adapt to or co-evolve with new situations, thereby supporting the transition from individual competence to personal capability" (Fraser & Greenhalgh, 2001, p2). For the purpose of their argument, Fraser and

Greenhalgh define competency as "what individuals know or are able to do in terms of knowledge, skill and attitude." In contrast capability is defined as the "extent to which individuals can adapt to change, generate new knowledge, and continue to improve their performance" (2001, p780). It might therefore be realistic to expect beginning practitioners to have achieved competence; however, as one progresses to specialty and advanced practice, capability would be a more realistic goal to meet the challenges of the many complexities faced in present day healthcare.

Achieving capability sits very well with reflective practice, through which, according to Fraser and Greenhalgh. "capability is enhanced through feedback on performance, the challenge of unfamiliar contexts, and the use of non- linear methods such as story telling and small group, problem based learning" (2001, p780). They go on to say that, to achieve capability, education needs to focus on process, avoiding rigid goals and prescriptive content. Complexity theory would say that curriculum development therefore needs to be less controlling and more consultative, with processes in place to support the learners to construct their learning goals, have a robust feedback system in place, and focus on reflective practice and appropriate experience to consolidate learning.

> Learning takes place in the zone of complexity, where relationships between items of knowledge are not predictable or linear, but neither are they frankly chaotic. Learning which builds capability takes place when individuals engage with an uncertain and unfamiliar context in a meaningful way...capability cannot be taught or passively assimilated: it is reached through a transformation process in which existing competencies are adapted and tuned to new circumstances. Capability enables one to work effectively in unfamiliar contexts (ibid, 2001, p781).

We turn to research to seek understanding, but with the traditional scientific methodologies and theoretical framework through which the data is interpreted, we have been denied the viewpoint that comes with the acknowledgement of interconnections and interdependence. Rather than the Newtonian influence of breaking a system/service into smaller bits and studying the bits, complexity theory recognises that the service can be understood only as an integrated whole (Anderson, Crabtree, Steele and McDaniel, 2005). It is within the context of the organisation that many of the answers can be found.
"A complex system is not constituted merely by the sum of its components, but also by the intricate relationships between these components. In 'cutting up' a system, the analytical method destroys what it seeks to understand" (Cilliers, 1998, p2).

Capra (2002) describes the commonality of complexity theory within organisations as a dynamic, living, social system, with a never ending process of change, which creates a new order. The key to understanding the organisation consequently lies in understanding the patterns of relationships and interactions among the key players (Anderson et al., 2005). It is therefore appropriate that we change our research approach from studying only systems or individuals, to studying the organisation as a whole. This means changing what we view as foreground and background (ibid, 2005), reversing our historic view of health professionals and their practice being the foreground and the practice environment being the background. The implications of this shift in research means a change in focus and a greater emphasis on context. The introduction of evidence-based practice as an example has been researched from a perspective of individual health professionals and their preparation to practise it. There is widespread concern about the lack of evidence that patient care is evidence-based, and acknowledgement of the lack of individual nurses' preparation for the delivery of evidence-based practice (Pravikoff, Tanner & Pierce, 2005).

Perhaps we should be focusing on how the change to evidence-based practice in nursing was implemented, the culture of the organisation in terms of command and control, and also the commitment of the organisation to resource evidence-based practice, including educational opportunities, to support health professionals to achieve the skills to implement it.

In exploring the research question "what practising nurses understand by the term evidence-based practice and how it shapes their clinical decision making", I will focus on individual and contextual aspects of the case, to identify influences which might contribute to the individual nurses ability to integrate evidence-based practice in their clinical decision making, and delivery of care.

2.2 Evidence-based Nursing Practice

In the health environment, knowledge explosion, continuous quality improvement, competition, and cost containment all validate empowering clinical nurses to provide evidence-based care (Sanares & Huliker, 2002).

Evidence-based practice has been described as the buzz word of the decade, and the new paradigm in healthcare practice. Ellis et al. go on to "acknowledge (it) to be the most important contemporary initiative committed to reshape biomedical thinking and practice" (2005, p84). Evidence-based medicine originated in Canada in the 1970's, with the purpose of redefining the practice of medicine, particularly to improve the usability of information (Courtney, 2005). Evidence-based practice seemed a logical progression, with allied health professionals including nursing following their medical colleagues in the 1980's. Grossman and Bautista (2002) contend that it is necessary to combine resources of all health care providers to achieve evidence-based practice, and that there are benefits from combining competences and contributions of all disciplines and relationships, including both interdepartmental and interagency.

The most cited definition of evidence-based practice is supplied by Sackett, Straus and Richardson, et al.:

> The conscientious, explicit and judicious use of current best evidence in making the decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available clinical evidence from systematic reviews (cited in Osborne & Gardner, 2004, p19).

The definition continued to evolve, with patient values being included and clarity of what constitutes practice, detailing "...The practice...integrates clinical expertise and patient values with the best available research evidence" Sackett et al (cited in Courtney (2005). DiCenso and Cullum (cited in Ferguson & Day, 2005) in their model for evidence-based decision making also considered the available resources among the components, together with research evidence, clinical expertise and patient preferences. It is acknowledged that each component may be weighed differently in any given situation and should be specific to the patient situation.

Perhaps the enthusiasm for this shift to evidence-based practice is not surprising with reports of a "...healthcare crisis, with the legitimacy of the (nursing) profession being questioned and unacceptable variations in practice becoming more evident" (Pape, 2003). There is no doubt that escalating costs of healthcare are requiring us to give consideration to the selection of the most efficacious and cost-effective practice. What healthcare providers do, and how they do it, is being critically scrutinised in terms of costs and benefits, with more evidence of harm and lack of benefit challenging current practice

(Melnyk & Fineout-Overholt, 2005). Implementing evidence-based practice is about reducing the uncertainty in clinical care, and providing a service delivery which is effective and efficient (Courtney, 2005).

According to Ferguson and Day "evidence-based practice is an approach to clinical decision making that nursing has enthusiastically adopted" (2005, p107). If practised, it is an approach that effectively closes the theory practice gap, with the added benefit of being patient-centred and outcome-focused. Pape (2003) describes evidence-based practice as integrating the processes of education, research and professional development, and provides nurses with guidelines that are valid and tested for doing the things nurses do. It explores the empirical way of knowing, focusing on critical appraisal, and the application of research to both understand and inform clinical decisions (Pipe, Wellik, Buchda, Hansen & Martyn, 2005). Beyea (2000) suggests that evidence-based practice as a framework provides the basis for questioning to begin, and is a structure which allows the healthcare provider to keep up to date with relevant, new developments. It enhances communication regarding decision making and provides confidence that decisions made are supported by facts (Courtney, 2005). According to Beyea (2000) there are many practices that should be questioned and argues that there are activities practiced by nurses that are no longer necessary or desirable. Questions around

- why nurses do what they do,
- who decides that any given treatment is the right course of action,
- is there any research to back the decisions made,
- are there any clinical implications,
- and could it be done better

are reasonable questions to consider. In an environment focused on outcomes, perhaps there should also be some consideration as to whether nurses' actions are going to achieve the highest achievable outcome.

Pravikoff et al. detail the steps of the evidence-based practice process, which include:

- Assessing and defining a problem and formulating a specific question.
- Searching for, finding and evaluating appropriate evidence.

- Planning and implementing an intervention by integrating the evidence into practice.
- Evaluating the process and the results (2005, p42).

The process is a complex one and requires educational support to develop a range of skills to complete all aspects of the process. Despite nurses' preparation for practice evolving, even the more recent graduates report being poorly prepared by their education to make use of research in the clinical practice setting (Veeramah, 2004). Courtney questions "the extent to which evidence-based culture is embedded within curricula" (2005, p19). This is despite undergraduate education having been university-based for some years, and nursing authorities requiring research methodology to be undertaken. It would be a mistake to think evidence-based practice and standard research are the same, despite some similarities. Although both involve the search for evidence, evidence-based practice extends to defining the problems and evaluating the research, requiring a multifaceted skill set and knowledge base (Simpson, cited in Dobbs, 2006). Dobbs goes on to distinguish between the two by stating "evidence-based practice takes into account forms of evidence other than empirical research to inform practice, such as expert opinion and case studies" (2006, p27).

Current Nursing Research text books are criticized for their focus on how to conduct research rather than applying research as evidence for practice, identifying limitations in bridging the theory/practice gap. Suggestions as to how education may overcome the above limitations have been considered by Foster (2004) and include:

- Differentiating between the 'research' question and the 'search' question, therefore making the distinction between knowledge generation and knowledge gathering.
- How best to find evidence and how much is considered enough.
- Direction as to how evidence is synthesised across all the components of evidence-based practice, including the research, the practice, individual expertise and the patient values and preferences.
- Clarify processes in gathering evidence and synthesising the evidence in the delivery of health care.
- Implement the evidence following a detailed change process.

Ellis et al. (2005) contend that facilitation is the key to getting evidence into practice, and recommend producing educational material, identifying and fostering local experts. Promoting Action on Research Implementation in Health Services (PARIHS), is a framework "developed as a theoretical tool to explain the inherent tensions and complexity of implementing evidence-based practice" (Ellis et al., 2005, p85). The framework recognises that to achieve 'best practice', there is a reliance on more than best information considering factors such as culture, environment, management structures and resources. There is a focus on the convergence of "high" levels of evidence including research evidence, clinical experience and patient preference. A sympathetic context which includes a supportive culture with organisational commitment and leadership, and effective facilitation will support the implementation of evidence-based practice.

Brown (2004) suggests that it is time to make connections, with academic institutions making the links with service providers to focus on work-based learning involving clinicians, educators and researchers. The challenge is meeting the needs for evidence-based practice skill development, both in under-graduate nursing programs and preparing future graduates to implement evidence-based practice. Also, the other end of the continuum, the experienced nurses who graduated prior to the introduction of evidence-based practice, making the transition to being reflective practitioners, capable of accessing best evidence and integrating it in their day to day practice.

The complexity of evidence-based practice embraces the four pillars of nursing, namely practice, education, research and management. A collective commitment and investment to its implementation has been described as challenging in financially driven organisations and requires investment from both the individual and organisation (Pearson, 2004). In a healthcare environment of economic rationing, this might be a significant challenge however it could be argued that evidence-based practice involves scrutinising practice standards for effectiveness and can allow significant cost savings. If the research justifies additional expenditure, that provides the evidence to lobby funders for additional funds (Courtney, 2005).

Kapitzke states that "information literacy bestows power on those who understand and apply its precepts and standards" and "that in and of itself (information literacy) is a key to prosperity of both the individual and the nation in the new knowledge economy" (2003, p40). Barnard, Nash and O'Brien (2005) indicate it is a foundation for learning and also a vital set of skills in our contemporary environment of continuous change. They go on to state that "achieving information literacy means life long learning can be initiated, extended and sustained through abilities that may use technologies but are independent of them" (2005, p2). Information literacy extends beyond information technology skills, to having the ability to access and evaluate information effectively. In the healthcare environment, rapid change requires continuing currency and competencies. The amount and complexity of information available and relevant to nurses is estimated to double every five years (Verhey, cited in Barnard et al, 2005) increasing exponentially. Despite this, practising nurses are reported to underuse the nursing literature, with claims that "it is a function of knowledge and skill levels in searching the literature, time constraints, and the degree of emphasis placed on research-based and information-based clinical practice" (ibid, 2005). Pravikoff et al. (2005) explored nurses' perceptions of their skills to source evidence, and organisational support to do so. Their findings indicated that despite access to the internet, fewer than 20% (of the 1,097 participants) accessed it, and fewer than 20% considered themselves capable of conducting a successful literature search. Other researchers Russell and Alpay (cited in Pravikoff et al., 2005) contend that "nurses simply have not acquired adequate knowledge of information technology".

The technical resources to support information literacy are expensive and compete with medical technology for its share of the health capital expenditure budget. According to Sams, Penn and Facteau (2004) accessibility of information sources and access to the internet at the point of care is essential, and contributes to patient care and outcomes. Information technology taking its share of the capital expenditure budget is appropriate.

Support for staff to achieve the information literacy skills has proved challenging. With the range of cognitive and skill development needed to meet the requirements of evidence-based practice, and the time to achieve it significant, perhaps it is not surprising that Pravikoff et al. report "personal and organisational barriers to the use of research and the implementation of evidence-based practice are substantial" (2005, p42).

Ellis et al. suggest that the existing workplace environment and culture may affect change, and identify key influences to the successful implementation of evidence-based practice, "the impetus to change, the process by which change is initiated and managed, access to information, and the presence of personnel sufficiently skilled to drive the change"(2005, pg 85). Kitson et al (cited in Ellis et al., 2005) argue that implementation of evidence-based practice is not a simple process, and needs to consider the nature and strength of the evidence, the environment in which it is delivered, and the way in which the process is facilitated. There are many variables within an organisational structure that could either support or deny the implementation of evidence-based practice. Organisations are dynamic in nature and "clinical practice, organisation, information management, research, education and professional development are interdependent and built around multiple self adjusting and interacting components" (Plsek & Greenhalgh, 2001, p626).

Leadership needs to see the possibilities. Perra (2001) encourages leaders to embrace change to achieve quality outcomes for the patient, with a positive attitude. Committed leadership with a vision for the future, and a determination to manage significant internal change is required to successfully achieve and maintain evidence-based practice in the clinical practice setting (Sams et al., 2004). They go on to say nurse leaders working towards the strategic integration of evidence-based practice, must be prepared to;

- Establish a new culture based on the use of evidence
- Create the capacity for organisational change
- Sustain that shift through revisions in the service infrastructure (ibid, p407).

Bernik suggests "passion is probably the single prerequisite to cultural change, for those inclined to attempt it. If you are not passionate about it, don't even bother" (2001, p61).

Confirming the evidence-based practice argument (Pape, 2003) considers its strengths lie in the provision of high quality, cost effective care, based on evidence. It allows nurses to use current literature and keep pace with advances in their specialty practice setting, and focus on individualised patient centred care with confidence. Despite the enthusiasm for evidence-based practice, and the positive benefits and value for patients, nurses, other health professionals and the wider community, there are reports of nurses as a whole not basing their practice on best evidence (Brown, 2004).

The literature states that research improves nursing and patient care outcomes (Valente, 2003). Dobbs supports this, stating "research has shown that patients experience 28% better outcomes when the care they receive is based on the best and latest evidence from well designed studies" (2006, p10). It is of some concern therefore that recent studies show "only 21% of 1,200 practicing nurses had used evidence from a research study in their practice within a six month time frame" (Melnyk et al., cited in Dobbs, 2006, p10). The American and Dutch experience reports between 30 – 40% of patients do not receive care that is informed by best research evidence, and 20 – 25% of the care delivered is unnecessary or even potentially harmful (ibid, 2006, p10).

There are complex issues associated with the establishment of evidence-based practice consistently across practice settings. There are also potential risk management considerations that need to be addressed to fulfil ethical responsibilities. In the peri-operative setting, specifically intra-operative nursing, where acute intervention and patient risk is maximised, "clinical decisions need to be subjected to a critical scrutiny of the costs and benefits of interventions" (Osborne & Gardner, 2004, p18). Despite this statement, Osborne et al. report "that peri-operative nurses are not engaging in developing and publishing the evidential basis considered necessary for contemporary peri-operative practice" (2004, p18).

A working paper by the American Association of Colleges of Nursing (AACN) states "most professional nursing education programs have included a course in nursing research but often have neglected the more meaningful pursuit of clinical scholarship, i.e. the application of research to the clinical setting, the resolution of clinical problems and dissemination of results" (2003, p6). There is no doubt that it is challenging to translate the abstract world of research to the specific world of practice, where there is a need to incorporate other forms of evidence within different contexts (Valente, 2003). However, Pearson, Porrit, Doran, Vincent, Craig, Tucker and Long contend that "although diploma-educated graduates have been reported to be well prepared for realistic work situations, there is a growing consensus that baccalaureate-educated nurses are able to function at more complex levels" (2006, p225).

Nursing research education has been incorporated in nursing curricula since the 1970's, in an effort to translate research findings into practice, however, the effectiveness of the

education remains unknown (Mulhall et al, cited in Veeramah, 2004). What has been established is that many practitioners "find research incomprehensible, irrelevant to their practice and are poorly prepared by their education to make use of it" (Veeramah, 2004). Hicks and Hennessy maintain "that in order to practice evidence-based health care, a basic understanding of research methodology and its application to the critical evaluation of published research and thence to professional practice is required" (1999, p184).
The literature reviewed included reports of university graduates being more likely to incorporate research findings in practice, where non-graduates were unable to find any relationship between education, and research utilisation in practice (Veeramah, 2004). Attitude and positive views about research have been considered, although the literature reviewed suggests, despite positive attitudes, minimal use of research in practice is reported. Research groups have indicated positive attitudes are linked to the amount of research education received, but the evidence is inconclusive and other researchers were unable to find any association between positive attitude towards research and research utilisation (ibid, 2004). There seems to be a disconnection between the world of academia and the world of clinical practice.

Valente (2003) indicates that research activities are at times isolated to academic exercises. There may be issues around time, inadequate independence in the clinical setting and a lack of support to provide care which is evidence-based. Other barriers to the use of research in clinical practice included lack of autonomy and "unequal status in relationship to physicians" (ibid, 2003). The question of whether nurses understand the value of applying research to their practice is also raised. Schon argues that "effective change occurs when the messy world of practice is recognised as the reality of practice; 'the swampy lowlands'. In contrast ineffective change occurs if the reality of the practice world is ignored or superficially acknowledged through a position that he describes as 'the moral high ground'(cited in Ellis et al., 2005, p85). Maeve describes the division between the clinical nurse and 'intellegentsia', and argues that the "knowledgebase posited at the core of nursing does not meet the reality of practice" (1994, p11). Maeve goes on to say that the curriculum focuses on 'knowing that' as opposed to clinical practice requiring to 'know how'. It can be argued that there has been some progress since 1994, however there are still significant issues concerning the teaching of research and the implementation of evidence-based practice.

There are many barriers to the implementation of evidence-based practice in the clinical practice area that have been identified in the literature. From an individuals' perspective, the lack of time to access, and read articles at work have been identified as a significant barrier (Hughes, 2004; Pravikoff et al., 2005). This is an issue where decisions may be needed in real time within a busy working environment, and it may be perceived that activity is worthier than seeking evidence to act (Gagan & Hewitt-Taylor, 2004). Nurses are reported to be unwilling to read research reports to influence their practice and many may resist any change to the status quo (Pape, 2003). There is also discussion related to negative attitudes towards research utilisation in the practice setting, from both colleagues and leaders, and a general lack of organisational support for the delivery of care which is evidence-based (Hughes, 2004, p11). Access to evidence-based information is considered to be 'extremely difficult' (Pravikoff et al., 2005), supported by Hughes (2004) whose research revealed that staff neither had the skill or resources to conduct searching for evidence to support their practice decisions. There are some key issues that need to be addressed if the shift to evidence-based practice is going to be facilitated. They include educational input, culture changes and resourcing of the technical and personnel skill to not only support its integration in the clinical setting but also maintain it into the future.

From an organisational perspective, the ideal and reality are at times conflicting. Cullum (2002) reports that although in some areas rich information technology support is available, in the absence of the most basic skills and support, the impact of those resources is minimised. Cullum goes on to say that "nurses need to be better able to recognise the decisions they make and to understand the uncertainties associated with them" (2002, p3). It would be prudent to educate health professionals to establish the skills to construct focused clinical questions, information literacy to effectively and efficiently source the best available research and skills to critically analyse and synthesis the research into their practice and clinical decision making.

Bakalis and Watson conclude that "since clinical decisions are made for the benefit of patients, decisions should be evidence based and nurses need to develop the necessary skills and knowledge to participate more fully in clinical decision making" (2005, p39). Once the skills are established they suggest that nurses should have greater autonomy in clinical decision making. Discussion related to clinical decision making follows, however to achieve some link to evidence-based practice within the literature reviewed, Higgs and

Jones offers, "evidence-based practice does not take the reasoning out of practice, rather evidence-based practice requires advanced reasoning to make the most of the evidence that is available" (2002, p314).

In exploring the research question "what practising nurses understand by the term evidence-based practice and how it shapes their clinical decision making", there is interest in the individual nurses, and their preparation and support to implement evidence-based practice. However, guided by complexity theory, exploring questions relevant to relationships within the case, and taking into account the complexity of the clinical environment, were expected to add depth to the inquiry, and provide insight into the understanding and implementation of evidence-based practice.

2.3 Clinical decision making

Clinical decision making is central to the practice of professional autonomy, and provides the bridge between theory and practice (Higgs & Jones 2002). Higgs, Andresen and Fish contend that the theory-practice dichotomy is "false and misleading, since theory and practice coexist and combine in practice settings; they are interconnected and interdependent, so that whenever one is mentioned the other is also inseparably present" (cited in Higgs & Jones, 2002, p51). Within the health field, health professionals need to acquire many practice and knowledge competencies and skills that are inextricably intertwined, and it is the process of clinical reasoning and professional decision making that combine all those elements.

According to the nursing literature, the terms "decision making", "critical thinking", "clinical judgement", and "problem solving" are used interchangeably (Tanner, 2006). In this thesis, I will use the term 'clinical decision making' to mean an interpretation about patient needs and health issues, taking into consideration their concerns. It will also include the conclusion reached and decision to either take some action or not, whether that involves the implementation of standardised approaches, modification of those approaches, or the improvisation of new ones, which are assessed to be appropriate to the patients response.

There is no doubt that clinical decision making is concerned with managing a large range of information, which is generated from diverse sources and is tremendously complex. "It is required in situations which are by definition under-determined, ambiguous, and often fraught with value conflicts among individuals with competing interests" (Tanner, 2006, p205). The challenge is to have an understanding of the bio-sciences; namely physiology and normal responses, pathophysiology and diagnostics aspects. Further requirements include an understanding of the multiple interventions that the patients' healthcare episode may involve, and the impact of their experience on the patient and their family. An intimate knowledge of the physical, social and emotional strengths, including coping strategies and resources that can be brought to bare, are also requirements within the decision making process to enable the provision of appropriate professional care. Bakalis and Watson contend that "the deeper and broader the nurse's knowledge base, the wider the range of cues he or she discovers and uses during the deliberation phase of the decision making process" (2004, p33).

In practice the nurse's role is a multidimensional one, working in an environment which is increasingly complex. The clinical environment has been described as a harsh one, with often uncontrollable workloads, resource and workload deficits, and logistically challenged management structures. Hart and Ryan (cited in Higgs and Jones, 2002) describe the clinical setting as a complex learning environment that lacks order and control, and the development of effective clinical decision making skills which are best established in the real world experience of clinical practice, constitute a challenge to clinicians at all levels of development. Hart and Ryan (cited in Higgs and Jones, 2002) go on to describe nurses judgements as being based on a set of rules acquired in a context-free situation. Working through detailed procedures, with little sensitivity to cues that may be available to them from the patient or current data, that may require some modification of approach or alternative intervention, may be potentially harmful. Individualised patient care must take into consideration the many variables each individual brings to their healthcare episode, with the often unpredictable consequences of an intervention that they may be subjected to. Complexity theory would consider the patient's initial starting position and feedback (Gibbon, 2004) taking into account their complex physiology and pathophysiology. The unpredictability of their situation and the risk associated with ignoring or having little sensitivity to the cues they present, constituting a potentially significant threat. Consequently context, whether that be patient focused or organisation

related, become a major consideration and need to be thoroughly assessed, and having a decision making process in place is essential.

The reality highlights the complexity of clinical decision making, when there is the need for nurses to make multiple decisions rapidly over short time frames. Patients with complex health issues having some form of intervention may require decisions to be made amid distraction and interruption (Tanner, 2006). The development of clinical decision making skills to a high level of accuracy is critical to achieving positive health outcomes. Bakalis and Watson (2005) identify nurses as those professionals providing 24 hour care and likely to be the first to observe deterioration in patient conditions. It is their interpretation of events and their action which may determine a patient outcome. The consequences of getting it wrong are multiple with implications for the individual patient, and the clinician, as well as organisational impacts such as cost and increased length of stay to mention a few. There is a direct relationship between the length of the nurses' experience and frequency that clinical decisions are made (ibid, 2005). Educational support and clinical preceptorship to develop and establish clinical decision making skills to a high level of accuracy would seem paramount.

Higgs, Richardson and Dahlgren (2004) discuss the blending of self-knowledge and professional knowledge in patient centred care. They identify three forms and derivations of knowledge, namely:

- Propositional knowledge that is generated through research and scholarship.
- Personal knowledge, generated through life experiences and
- Professional craft knowledge, which is experiential, generated through professional experience.

It is the relationship and blending of the three forms of knowledge that provides the basis of clinical decision making. It requires intellectual, emotional and personal maturity, and a sound professional knowledge base (Titchen & McGinley, cited in Higgs et al, 2004).

Higgs, Andresen and Fish (cited in Higgs & Jones, 2002) develop the above derivations of knowledge and offers a model of practice knowledge:

- The propositional knowledge allows the clinician to describe and predict.
- The procedural knowledge to enable action

- The theoretical knowledge to explain and interpret and
- The emancipatory knowledge to empower.

With each form of knowledge overlapping, the sharing of knowledge can further inform, even transform and extend one to the other in a synergistic way.

Higgs and Jones (2002), acknowledge the growing expectations of patients to be involved in the decision making process. Advances in information technology have resulted in patients becoming informed healthcare consumers. Higgs and Jones (2002) advocate mutual decision making, with the patient taking an active role, and reflective inquiry promoting a deep contextually relevant understanding of the patient problem and how they want it addressed. They extended their initial three core elements of clinical reasoning, namely knowledge which is discipline specific, cognition or reflective inquiry and metacognition, the integration of both the discipline, specific knowledge and reflective inquiry, to include mutual decision making, including the patient, contextual interaction and task impact.

Higgs et al. (cited in Higgs & Jones, 2002) refers to the transpersonal relationship established between the patient and the nurse, and aesthetic knowing related to the nurses perception of the significance of clinical presentations and the application of her skills and professionalism in the art of nursing practice.

There is the acknowledgement that knowledge can be generated through theorisation, research and reflection on experience. Dewey defined reflection as "the turning over of a subject in the mind and giving it serious and consecutive consideration." (cited in Tanner, 2006, p207). Nursing literature has a large body of knowledge specifically related to reflection on and in practice, and although the linkage to clinical decision making is sparse, Benner (1991) contends that there is a typical trigger event, identifying a breakdown in practice either actual or perceived. Hart and Ryan contend that "clinical (decision making) begins with the identification of a problem or issue encountered in practice. It requires a sensitivity evidenced by a willingness to listen and attend to one's own thoughts and feelings as well as those of others" (cited in Higgs & Jones, 2002, p279). It is the exploring of an experience, that enable nurses to achieve new understanding. The benefits of reflection have been described in the literature as:

enhancing learning from experience, providing a means of expanding and further developing clinical knowledge and the improvement of both clinical reasoning and clinical decision making in complex situations. (Tanner 2006).

Reflection becomes the key element in developing the skill of critical thinking. Professional nursing requires the ability to think critically. It is essential when day to day practice presents ambiguous situations, a range of potentially conflicting approaches to choose from, and inadequate information to inform practice (Fonteyn & Ritter, cited in Higgs & Jones, 2002). The literature traces the roots of critical thinking back to Aristotle and Socrates with many authors attempting a definition. Critical thinking has featured in the nursing literature for the past 20 years as a description, rather than a definition (Riddell, 2007). Common themes identify two dimensions, firstly cognitive skills which include analysis, evaluation and inference, and secondly affective disposition. Some of the key characteristic associated with expert critical thinkers involve an affective disposition and include, "inquisitiveness, self confidence in one's ability to reason, open-mindedness regarding divergent world views, flexibility, honesty, diligence and reasonableness" (Fonteyn & Ritter, cited in Higgs & Jones, 2002, p111). A culture of inquiry would support critical reflection on current practice and foster creativity, involving the exploration of literature in pursuit of best evidence. Using all the skills associated with critical thinking, translation of evidence into practice and the implementation of evidence-based practice would be supported. Critical reflection does not come naturally to everyone, and there needs to be some educational support for individuals to maximise their skill to enhance their practice benefits.

"Knowledge and clinical experience are the most important factors influencing clinical decision making" (Bakalis & Watson, 2005, p34). Although knowledge and experience can be acquired through both informal and formal studies and practice development activity, ibid. (2005) contend that decision making is not taught at universities and there is a need for supervision for the nurse to become familiar with and reflect on decision making. They go on to recommend that decision making should be taught in pre-registration programmes and post-registration programmes should support the development of expert knowledge.

So what is the reality about clinical decision making? Nurses and healthcare colleagues use a vast educational knowledge in conjunction with intelligent guess work, common sense, hunches and past experience to determine the most appropriate action (Pape, 2003). The literature reviewed indicates that many nurses practice ritualistically, doing things as they have always done (Dobbs, 2006). She goes on to say that it is not unusual for nurses to base their practice on what they learnt as students, or practice in ways that are acceptable to the workplace. Opinions of colleagues and other health professionals may be sought, with some favouring the use of experts to support clinical decisions in situations when they are unsure of how to progress. Perhaps there needs to be some exploration of what constitutes an expert and challenge the validity of their directions. Reliance on textbooks and journals are often favoured but they are problematic in terms of currency within a subject matter that is dynamic and changing rapidly. Unit policies and guidelines are also a decision making tool regularly referred to for support and direction, when nurses are faced with a complex decision. It would be reassuring if those policies and guidelines were based on evidence, but experience would suggest that some continue to originate in the traditional practices rather than sound evidence (Pape, 2003).
Tanner (2006) conducted research on clinical judgement and drew some general conclusions from the growing body of literature around clinical decision making;

- Decisions are more influenced by what the clinician brings to the decision making process, rather than the objective data at hand.
- Sound clinical decisions require knowing the patient and their normal responses, but also an engagement and relationship which considers their concerns.
- The context and culture of any workplace has a significant influence on clinical decision making.
- Clinical knowledge and ongoing improvement in clinical reasoning is reliant on reflection on practice which may be triggered by some perceived or actual breakdown in clinical decision making.
- There is a variety of clinical reasoning patterns which we can use alone or in combination. They include for example intuition and narrative thinking.
- The need to base clinical decision making on evidence-based practice (Bakalis & Watson, 2005), provides another dimension. Although it is suggested that this is a relatively new concept, it would appear supported by Buddha in the 3rd century B.C.(cited in www.e-knowledge.ca) in his statement,

> Believe nothing merely because you have been told it, or because you yourself have imagined it. Do not believe what your teacher tells you merely out of respect for the teacher. But whatever, after due examination and analysis you find it conducive to the good, the benefit, the well-being of all things, that doctrine believe and cling to and take it as your guide.

In the works of Higgs and Jones (2002) the focus on propositional knowledge considers the theoretical and scientific basis for decisions. Pipe et al. (2005) describe empirical knowing as that which incorporates experiment, observation and the valid information achieved through scientific research. Propositional and empirical knowledge is only part of the decision making framework with attention to experience and personal knowledge playing their part, and providing contributions. Perhaps it could be argued that the relationship and blending of the three forms of knowledge that provides the basis of clinical decision making should reflect a greater emphasis on experience and personal knowledge with the scientific contributions taking a lesser prominence?

Cullum states, that "the starting point for evidence-based approaches to healthcare, are the decisions made by professionals delivering services" (2002, p1). There is no doubt that nurses have the capacity to contribute evidence-based decisions, but there needs to be considerable support in their individual practice settings with management commitment, educational reinforcement and a culture of inquiry which fosters inter-disciplinary cohesion. Bakalis and Watson concluded in their research that "a mutually supportive nurse-physician relationship is paramount to decision making success…mutual decision making that occur between nurses and physicians directly influence patient morbidity and mortality" (2005, p35). This would support the notion that the contextual components and inter-disciplinary relationship between health care providers, the interdependence and reliance on key players in the decision making process, are paramount to positive patient outcomes.

In exploring the research question "what practising nurses understand by the term evidence-based practice and how it shapes their clinical decision making", there is interest in the extent to which individual nurses integrate research findings in their clinical decision making, and how much emphasis research findings might have over other forms of knowledge and knowing. The literature reviewed on clinical decision making to inform

the inquiry, provides a theoretical appreciation of the complexity of the process, and identifies where research knowledge fits within the clinical decision making process. How individual nurses within the case interpret and implement 'best practice' is of interest.

CHAPTER THREE

Research Methods

The approach adopted to explore the research question, "what practising nurses understand by the term evidence-based practice and how it shapes their clinical decision making", involves an inquiry investigating practising nurses' experiences and viewpoints and their interpretation of meanings. Considering the field of inquiry with its associated multiplicity, and the complexity theory lens through which the researcher intended to explore the question, a qualitative interpretive research approach was indicated, and this has been implemented using a naturalistic paradigm and case study methodology.

The following sections of this chapter provide the foundations for the research approach and guide the inquiry.

3.1 Establishing the research question

Previous Research findings (Wilson, 2004), which revealed some inconsistencies had a bearing on the present inquiry and became the basis for further exploration. The previous project explored "the challenges nurses' encounter, as they endeavour to enable beginning practitioners to integrate into clinical practice". The data collection from that inquiry was rich and diverse, but I will focus in this present study on the inconsistency which hits at the very heart of professional nursing, namely clinical practice. Evidence-based practice is well established in the policies and procedures that govern nursing practice. It has been

embraced by professional nursing bodies internationally, and is integrated throughout the competency standards which performance is measured against (NCNZ, 2007a).
Data collection from both experienced nurses and beginning practitioners in the previous inquiry revealed a general belief that evidence-based practice was integrated into clinical practice and well established. I was particularly interested in this finding as each group had had different educational programs and preparation for practice and the earlier group had not been exposed to the formal instruction that goes with this new paradigm, evidence-based practice. Further thematic analysis identified that 'research' in clinical practice was not valued. This was common to both the experienced nurses and beginning practitioner groups, both of which identified research as 'separate' and 'not belonging' to the clinical practice area, but rather belonging in the class room and academic pursuits. And there lies the inconsistency. How can clinical nursing staff believe they are practicing evidence-based nursing when they do not value research? What are nurses basing their clinical decisions on?

This leads us to the current research question "what do practising nurses understand by the term 'evidence-based practice' and how it shapes their clinical decision making"? The issues identified during the literature review related specifically to evidence-based practice were many, but include:

- Lack of value for research in practice.
- Issues around information literacy and all that involves, including

  Difficulty assessing research information,
  Difficulty understanding research articles,
  Lack of access to computer technology, libraries and the necessary search skills,
  Lack of skills to critique or synthesize the literature (or both).

  (Pravikoff et al., 2005)

There are also attitude related findings, with nurses resisting change. There are indications in the literature that nurses are unaware of relevant clinical research, or may be unwilling to read research reports. Collaboration between researchers and practising nurses are also problematic as they work in different settings, Polit, Beck and Hungler (2001) go further suggesting that the clinical staff and research personnel speak a different language.

Although there has been a proliferation of literature related to evidence-based practice over the past decade, Pravikoff et al. (2005) in their extensive research involving 3,000 randomly selected registered nurses in the United States, of which 1,097 responded, found that less than half the sample group were familiar with the term evidence-based practice. They go on to say "if the term is unfamiliar, the successful integration of evidence-based practice can scarcely be anticipated".

3.1.1 Personal Factors

Personal factors I brought to the inquiry include a passion for clinical nursing practice and three decades of clinical practice experience. My personal preparation for practice pre-dated the evidence-based practice paradigm shift; there was a perceived lack of educational opportunity for individuals to make the transition, while still committed to clinical practice. There were opportunities to pursue academia, but there was no clinical career pathway which acknowledged the value of ongoing education and support of academic achievers while still involved in direct patient care.

In more recent times I have become involved in postgraduate nursing education, with a desire to inject some passion into clinical practice. This has involved a commitment to my own professional development with an education focus and a commitment to exploring evidence-based practice and all it involves. The challenge has become supporting individuals with a great wealth of clinical experience to make the transition to be critically reflective practitioners, skilled in information literacy. I am committed to providing an integrated educational experience with theory informing clinical practice, and clinical practice informing theoretical knowledge gains in the clinical context, and supporting experienced nursing personnel to develop the skills to deliver best practice to their patients.

The literature reviewed predominantly used a traditional theoretical framework to guide the research process and focused on the individual parts, namely the nurses, in terms of their preparation to practice, their skill levels, their attitude, and how the individual coped with the many challenges associated with health professional practice. Using a complexity theoretical framework provided a lens which explored the specific as well as the 'bigger picture'. There is an acknowledgement of contextual variables and

relationships which impact on any one health professional's ability to perform optimally. Guided by this new paradigm, complexity theory, a series of questions was developed to explore the research question, and as the process progressed, and literature informed the inquiry, related questions were added to further focus the data collection. This is interpreted as 'progressive focusing' as described by Stake (1995).

3.2. Research questions:

What do practising nurses understand by the term Evidence-based Practice and how it shapes their Clinical Decision Making?

Sub-questions:

1. How do you define evidence-based practice?

   Related questions:

   - Do you differentiate between medical and nursing evidence-based practice?
   - Is evidence-based practice delivered in your clinical context?
   - What constitutes evidence?

2. Did your formal education incorporate evidence-based practice?

   Related questions:

   - If not, how did you develop the skills to implement evidence-based practice?
   - Have there been any education opportunities (formal or informal) available to you to develop skills to support you delivery patient care which is evidence-based?
   - Are you aware of information database and how to source material to support you in the deliver of evidence-based practice?

3. How do you source evidence to inform your clinical decisions?

   Related questions:

   - Whose responsibility is it to source best practice guide lines?
   - How often might you use the library and librarian to support your search for information?
   - Do you feel confident in your computer skills and have some familiarity with accessing information?

- How often would you use the computer to access information in your workplace?

4. What informs / influences your clinical decision making
    - What are the challenges / constraints for you in delivering evidence-based practice?
    - How do you perceive you can be better supported to deliver evidence-based practice?
5. What makes an expert and expert in your context?

The foundations of the research methodology related to this inquiry are detailed below.

3.3. Qualitative Research

Qualitative research is based on the view that meaning or reality is constructed by individuals interacting within their social contexts (Merriam, 1988). As the researcher, I am therefore interested in the meaning that registered nurses have constructed around the term evidence-based practice, and how it influences their clinical decision making. Davidson and Tolich state that qualitative research "abstains from traditional quantitative procedures and instead aims to get 'quality' that can be used to interpret and explain behaviour" (2003, p.122), drawing on participants' impressions, descriptions and quotations. Qualitative research emphasises the process, meaning and understanding of the phenomena studied (Merrian, 1998). Stake (1995) contends that qualitative research has an emphasis on understanding the complex inter-relationships among all that exists, which quantitative research fails to capture with its emphasis on explanation and control. Understanding is a characteristic of the humanities, and the qualitative researcher seeks to establish an empathetic appreciation, treating the uniqueness of the case and contexts as important to the overall understanding of the phenomenon under inquiry. However, there is an acknowledgement that although each case is unique, there are commonalities and it is the observation of the ordinariness that allows the collection of thick data, supported by empirical understanding and the emergence of multiple realities that challenge the ongoing interpretation role of the researcher.

There are some key assumptions that influence the entire research focus which include:

- That reality is not only multiple, but also subjective and not a fixed entity.
- The nature of the relationship between the researcher and the research participants involves direct interaction and the creation of meaning through an interactive process. There is exploration of the research question together, with the focus being on the researcher 'researching with' and exploring the research participants' experience, rather than conducting 'research on' the participant.
- Subjectivity and values are not only inevitable, but also desirable and add richness to the data.

(Polit et al., 2001)

Stake (1995) contends that qualitative inquiry and its subjectivity is an essential element of understanding. As the inquiry progresses new puzzles emerge and potentially generate further inquiry rather than provide clear solutions.

An inductive process of reasoning and understanding will be the predominant process of the inquiry, with emphasis on the wider context and influences, allowing for the emergence of an interpretation based on the experiences of the research participants (Merriam, 1998). Davidson and Tolich argue that "in the 'real world' very little research is purely inductive or deductive" (2003, p18). There is inter-dependence between theory and research, with theory determining the inquiry (deductive reasoning) and the inquiry determining the theory (inductive reasoning). With the complexity associated with the focus of interest, there are some theoretically established variables that direct the inquiry and beg clarity and confirmation of the theory translation into practice. Deductive reasoning sits more comfortably with traditional ways of looking at things and may inform some specific and individual aspects of the inquiry. Inductive reasoning is, however, the predominant process of inquiry and sits comfortably with complexity theory and its focus on the contextual aspects of relationships and interdependencies associated with today's health care delivery.

Polit et al. state that

> ... naturalistic methods of inquiry deal with the issue of human complexity by exploring it directly. Researchers in the naturalistic tradition stress the inherent complexity of humans, the ability of humans to shape and create their own experiences, and the idea that truth is a composite of realities. Consequently,

> naturalistic investigations emphasize understanding the human experience as it is lived by collecting and analysing narrative, subjective materials (2001, p15).

The naturalistic paradigm fits well with the theoretical framework of complexity theory as it acknowledges that the reality is not a fixed entity but rather multiple interpretations and constructions are possible, and subjectivity a feature which is valued. Context plays a significant role and adds to the dynamic and holistic nature of the lived experience as nurses' practice their professional craft (Polit et al., 2001). The research question is explored by the researcher and participants together, and meaning is constructed throughout a flexible and evolving process, as aspects are considered, new questions lead to further exploration and new insights emerge. Progressive focusing is described by Stake (1995) as the flexibility of the research method to incorporate what participants bring to the inquiry, and so allows further exploration to seek clarity. Stake states that "the most significant characteristic of qualitative inquiry is its emphasis on interpretation" (1995, p8). The research participants' interpretation of the question and researcher's interpretation of meaning are central to the overall understanding.

The researcher acknowledges that the interpretation of the data is that of the researcher and the participants contributing to the data. Quality checks during the research process were carried out during postgraduate seminar opportunities specific to the research question, the seminar incorporated interactive discussion related to evidence-based practice and clinical decision making, and involved a mix of research participants and other members of the case to check for the credibility and transferability of the data and its analysis. This is interpreted as a form of 'member checking' described by Stake where staff working within the case consider material for 'accuracy and palatability'. Some of the feedback may be worthy of inclusion in the final write-up (1995, p115).

3.4 Case Study Research

Case Study methodology 'is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances" (Stake, 1995, p xi). Cases are bounded in that they have a clear definition of limits regarding factors of inclusion and exclusion, and from an institutional perspective are bound by time, location and participants (Merriam, 1998). Yin states "a case study is an empirical inquiry that

investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (cited in Merriam, 1998, p27). According to Stake a case can range from one individual to one organisation, or "a particular mobilisation of professionals to study [a particular phenomenon]" (1995, p2). Although there is the notion that the case is a bounded system, Stake adds that "the case is an integrated system" (1995, p2). For the purpose of this study the term 'organisation' will be used to mean the 'integrated system'.

Anderson, et al. propose extending case study designs, using a complexity theory blueprint. They go on to state that "complexity theory is a useful companion to case study, because it simultaneously fosters an attitude of attention to emerging patterns, dynamism and comprehensiveness" (2005, p681). There is the acknowledgement that any one case or organisation has multiple elements, and it is the interdependencies and interactions of the individual elements that create the whole. Any inquiry needs to focus on those interdependencies and interactions among the element, as well as the case as a whole to gain critical insights and understanding (ibid, 2005). Anderson et al.(2005), provide the basis for my interpretation of case study methodology as I seek to explore the research question "what do practising nurses understand by the term evidence-based practice and how it shapes their clinical decision making"? They advocate paying more attention to the following areas:

- Interdependencies across the boundaries of the organisation or the case.
  Recognising that ideas and actions are inter-related and that there are inter - dependencies between thought and action.
- Understanding the dimensions of relationships.
  The need to remain open to the unexpected and explore the rich understanding which comes about by identifying those things which are similar to or different from various aspects of the case.
- The concept of nonlinearity
  Although this may be difficult to detect, they are key to understanding.
  The researcher looks for instances where small events lead to large outcomes and large events which lead to small outcomes.
- Expect the unexpected.
  Although there are predicated outcomes that may be identified by the researcher, multiple lens will yield a greater appreciation of reality.
- Explore unexpected events
  "Complexity theory suggests that rules have less relevance than we traditionally thought, whereas creativity has more relevance than traditionally thought." (ibid, 2005, p677). Although peoples processing of the unexpected is to normalise it,

care should be taken to explore that which was initially unexpected and presented as an accepted norm.

- Explore the process as well as the phenomenon.
  Although the research question focuses on evidence-based practice, there needs to be some consideration and sense made of the multiple factors influencing clinical practice to expose the nature of the case.
- Recognize dynamics.
  This is the recognition that the case is not something 'that is', but rather something that is 'becoming'. There is a sense of emergence, with adaptive processes in place which need to be explored and adds to the understanding.
- Describe patterns as well as the phenomenon.
  There will be the identification of macro level regularities, but the researcher needs to take note of differing internal processes and patterns which may emerge. Specifically this may be relevant to relationships and ways in which they interact.
- Recognize different levels of the case and seek patterns
  "Complexity theory suggests that a health care organisation is best understood as an organisation and that the organisation is best understood as nested within a larger network of organisations"(ibid, 2005, p678).
- Appreciate the dynamic nature of the phenomenon and seek patterns of change. In exploring patterns of behaviour, the researcher needs to be aware of the impact of power dynamics and relationships which could influence individual behaviour and performance.
- There are multiple successful patterns.
  Although the case is explored for experienced nurses understanding of evidence-based practice and how it influences their clinical decision making, the research is open to different interpretations of process and implementation and acknowledges that more useful knowledge may emerge and multiple successful patterns may be revealed.
- Transpose foreground and background.
  Complexity theory suggests that we change our interpretation of the organisational chart of the case from the individuals, to the lines between the individuals, bringing to life the 'relations, flows and exchanges'. The more traditional research methodology has focused on individuals in the foreground, which ignores process and relations, flows and exchanges. Complexity theory would bring those things to the foreground.
- Know the history of the case.

In the tradition of case study methodology, with its characteristic of 'boundedness', complexity theory would suggest that there is much to be gained from exploring "the behaviour that occurs at and across the boundaries that define the case" Anderson et al., 2005, p674). Looking at the similarities and differences in the different relationships that make up the case will allow attention in this study to be focused on the organisation's diversity.

3.4.1 The Case

The choice of the case under inquiry was 'no choice' at all (Stake, 1995). The focus of this inquiry was to further explore a puzzlement which emerged during earlier research activity involving the same case situation. Consequently this is an intrinsic case study, because of the interest in this particular case.

The case is defined as experienced practising nurses working in a 65 bed private surgical hospital, involving multiple specialties and a service requirement which includes high acuity patient care. There is a high priority given to postgraduate nursing education and there are technical resources committed locally for information searching and out sourcing of information literacy support. There are adequate personnel resources to allow time to progress clinical questions and there is a developing culture of inquiry. Also there are processes in place to support policy development and a desire to integrate research activity within their organisation, consequently access to the case to explore the research question was enthusiastically approved and supported.

The relationship between the case and the researcher needs to be clarified.
The researcher has a working relationship with the case, however is not an employee, and works independently. Access by the researcher to the case is based on teaching and research interests. A variety of teaching activity, including postgraduate certificate and professional development education, is delivered to the case under inquiry but also includes a much larger and diverse group including multiple private and public health service providers. The researcher role and educational role were sufficiently distinct that no ethical issues arose, such as conflict of interest.

3.4.2 Research Participants.

The selection of participants to explore the research question was based on the desire to achieve a purposeful sample, including both a typical and maximum variation sampling (Merriam, 1998). A typical sample, because of the desire to explore the reality of evidence-based practice within the context of the case; and maximum variation to incorporate the multiple variables including differing educational programs and preparation for practice, and specialty practice differences. Within both those variances

there are further differences which add to the richness of the data collection, namely age, degree of comfort with information technology, and participation in transition education programs. Merriam describes this process as "identifying and seeking out those who represent the widest possible range of the characteristics of interest for the study" (1998, p63).

Participants' characteristics were identified as:

- Registered nurses who trained in a hospital based program.
- Registered nurses who trained within a polytechnic diploma program.
- Registered nurses who completed the transition to a bachelor of nursing degree or postgraduate studies, which were either polytechnic or university based programs.

The researcher was also interested in exploring the understanding and interpretation of nurses from multiple specialty practice areas. It was anticipated that some participants might fit into more than one of the characteristics above, and be able to contribute to the data gathering from different perspectives.

The number of participants invited to take part was based on the guiding principle of achieving data saturation (Polit et al., 2001). It was decided to approach 15 staff and invite their participation. It was anticipated that there would be sufficient depth and richness of information from this number of participants, to provide some basis for understanding the research question.

The researcher met with the nursing management of the organisation to discuss participant selection, based on the characteristics identified. Letters were sent to 15 potential participants, including an information sheet detailing the research question, the process of data collection and anticipated time commitment. A list of anticipated questions to be explored was also included, and a consent form. 10 staff responded and became an integral part of the case for the purpose of this inquiry exploring "what practising nurses understand by the term evidence-based practice and how it shapes their clinical decision making".

3.5. Ethics

Nurses and nurse educators have a responsibility to society and the individuals they become involved with, and need to remain mindful of the concepts of 'beneficence' and 'non-maleficence' (Rogers & Niven, 1996). The duty to do good and avoid inflicting harm, needs to be at the forefront of the research process, and care taken to prevent or remove harm which may result from the inquiry. Merriem (1998) contends that ethical dilemmas are likely to emerge during qualitative research, both during the data collection and the dissemination of findings.

To protect individual rights, a process of informed consent to their voluntary involvement in the research was sought. There was detailing of participants' rights in the research information sheet, including a withdrawal clause which included both their ongoing participation and data contribution. Informed consent was also sought from the organisation, to allow access to both their premises and staff participating in the research.

A qualitative researcher has a closer relationship with the participant than with other forms of research, and often there is an already established relationship. In this case that relationship took different forms, and although always professional, ranged from past educator, to supporter and deliverer of professional development needs in their service areas, to confidante and clinical supervisor. I therefore had some preconceived ideas about how participants might respond to the research questions, and I considered the potential for being told by the participants what they thought I wanted to hear. Researcher bias is a consideration, which may lead to the data being interpreted according to what best suits the existing relationships, especially where there is a vested interest. I admit to personal bias as I explore the question: I would not be pursing the area of interest without a personal point of view and desire to enhance practice through education, which is at the very core of my relationship with the case. I was, however, able to put my personal opinions to one side in the interest of ensuring academic rigor, and allow the data and participant contribution to speak for itself.

This project was approved prior to commencement of the research through both the Massey University Human Ethics Committee (reference HEC: PN Application – 5/69), and the Health and Disability Ethics Committee (reference CEN/05/08/059).
Various issues were explored, and include;

Confidentiality of the case in its entirety, including all individual participants was assured. Tapes and transcripts are in locked storage and will remain so for 10 years following completion of the research. They will then be released to the participants or destroyed by the researcher, as preferred by the participants.

Considering my current role of educator, a **Power imbalance** associated with an educator/student relationship was considered. No current students were selected as participants, to exclude such a situation. It was hoped that time had allowed a former student/teacher relationship to become more of a collegial relationship, and the power imbalance therefore reduced.

As the researcher, however, I expressed the possibility of **exposing unsafe practice** that needed to be addressed. The course of action detailed, should this become a reality, included discussing the concern with the participant in the first instance, who would be encouraged to arrange corrective action. The researcher would come back to the Ethics Committee for advice if the situation was not resolved. This was not acceptable to the Ethics Committee and there were process delays in gaining approval as further clarity was explored regarding this issue. The researcher accessed documentation regarding The Code of Ethics (New Zealand Nurses Organisation (NZNO), 2001) which lacked the clarity required. The researcher then sought advice from Consultants within the Professional Nursing bodies; NZNO, and the College of Nurses, both of whom felt it was a 'non issue' in that the research question was not likely to expose such concerns. The NCNZ was then approached, and responded quoting the HPCA (2003) which detailed that it is the registered nurse's moral responsibility, and the employer's legal responsibility to report unsafe practice. The researcher, manager and clinician roles were explored, with specific reference to the researcher potentially breaching etiquette and working outside the scope of the researcher role, should concerns be reported outside the inquiry. As a nurse foremost and a researcher second, I would be guided by the HPCA (2003), and my moral responsibility. I was directed to include a statement in the Information Sheet provided to all participants indicating "If in

the unlikely event there are indications of unsafe practice that the researcher believes needs to be addressed, this will be discussed with the participant(s) in the first instance, and indication will be given that the researcher may feel obliged to communicate concerns to the employer, in the interest of public safety." This was pointed out to all participants at the outset.

3.6. Research Design

The implementation strategy for the data gathering process was planned prior to the application for ethics approval from Massey University Ethics Committee and the Health and Disability Ethics Committee, and included the use of focus groups and semi-structured individual interviews. It was planned to start the data collection with focus groups to stimulate discussion around current practice and perceptions of what constitutes evidence-based practice, also to explore the contextual issues which impact on individuals during the delivery of clinical practice. Although working with the pre-specified questions, there was encouragement for participants to contribute what they thought to be relevant.

Polit et al. (2001) describe focus group interviews as groups of 5-10 participants in a guided discussion revealing opinions and experiences. It is considered an efficient data source and can generate a lot of dialogue, and provide complex information retrieval in a comparatively short time frame. Davidson and Tolich consider the strength of a focus group "lies in the relative freedom that the group situation provides participants to discuss issues and reflect on problems. Furthermore the group situation allows participants to prompt as well as to 'bounce' ideas off one another" (2003, p252). The idea was to achieve some basic understanding of the research question and provide some further direction for 'related questions' to provide greater depth to the inquiry. This in part was successful, although there were frustrations in terms of coordinating a large number of participants (10) to be in one place at the same time. There were also issues related to balancing the degree of clarity required and exposing individual participant weakness, consequently individual interviews became the source of clarity in the interest of protecting individual contributors. Only one focus group meeting was actually held because of the above mentioned issues. The questions established to advance the inquiry were transferred to individual interviews to seek individual participant responses. The focus group was audio taped and a written transcript of the group discussion was made by the interviewer immediately after the focus group meeting.

Interviews became the main source of data gathering, with semi-structured questions prompting the discussion. The choice of semi-structured interviews provided some scope for the emergence of a diverse range of information. Polit et al., (2001) describe the process as being conversational in nature, with the participants defining the important dimensions of the phenomenon with an emphasis on what is relevant to them, rather than the researcher directing the inquiry and perhaps imposing some limitations. Stake states that "the interview is the main road to multiple realities" (1995, p62). I followed Stake's explanation of a qualitative researcher, arriving at the interview with a short list of issue-oriented questions along the thematic lines of the research, which had previously been distributed to the participants. The questions started with a general question related to the focus of interest; they were essentially open-ended to allow a description and explanation of the participants' experience and understanding, and to provide an opportunity to make links to related aspects within the context of their practice environment. Davidson and Tolich state that "qualitative research questions tend to be much less structured than those used in quantitative research" (2003, p148), and lend themselves to a greater flexibility. The key is for the researcher to listen, and to get participants talking and contributing to the data gathering, valuing individual realities. The interviews were taped and no notes were taken, rather the interviewer listened to the participants' responses, and then prepared a summary and interpretative commentary immediately following the interview (Stake, 1995).

"Triangulation provides a basis for convergence on the truth" (Polit et al., 2001, p313) and uses multiple sources of information and techniques to explore the research question. Davidson and Tolich would argue that "essentially, if different sources of information are saying the same things, then the researcher can have greater confidence that the findings are valid" (2003, p34). Triangulation is achieved in this study using current literature, and both the focus group and individual interviews. The strength of qualitative research lies in its validity, and the accurately reflected opinions and interpretations of the participants in the case. 'Member Checking' is described by Stake (1995) and Polit et al. (2001) as providing a feedback loop regarding preliminary findings and interpretations. These checks can be carried out formally or informally to seek reactions from personnel within the case. It is described as a step in establishing credibility of qualitative data. A mix of formal and informal opportunities were used to achieve 'member checks' and included a

one day seminar on subjects related to the inquiry. The seminar incorporated interactive discussion related to evidence-based practice and clinical decision making, and involved a mix of research participants and other members of the case. More informally, workshop sessions to postgraduate student groups including experienced practising nurses and new entry to practice nurses were used to source information related to understanding the definitions of evidence-based practice and clinical decision making, and also their perceptions of contextual influences, related to implementing those practices.

3.7. Data Analysis

Data analysis is all about making sense of the data. Stake would argue that "there is no particular moment when data analysis begins" (1995, p71). Experience as an educator, impressions and observations over an extended period of time that pre-dates the research project, has informed my thoughts and actions. This is supported by literature. Stake (1995) contends that new meaning is reached through two strategic methods, direct interpretation of what each individual participant contributes to the data, and through aggregation of instances, when consistency of interpretation and experience provides clarity about the case as a whole. Davidson and Tolich consider "analysis is about searching for patterns and regularities in the data collected" (2003, p154). They go on to say that there are four steps in the process which include; data collection, data reduction, data organising and data interpretation. My intension was to develop a case description related to the delivery of professional nursing practice, drawing on analysis of the triangulated data.

Content analysis

The analysis of the raw data consisted of the above steps merged with thematic analysis procedure to tease out main themes, and categorise the data following the process described by Thomka (2001)

- The responses to the interview questions were reviewed.
- Coding was established for key words and concepts to capture the dominant ideas.
- Themes and common patterns were identified which reflected the participants experiences and emotional responses.

Linkages were then made between key phrases and words, providing meaning to the data, and common threads emerged from participants responses to the inquiry and related to the research question (Armstrong & Adam, 2002).

I identified 3 themes which will be explored in depth in the discussion chapter.

- Variability within the case in individual nurses understanding of what evidence-based practice is.
- Education deficits and lack of structured support for nurses to develop skills to support them in their understanding and delivery of evidence-based practice.
- Clinical context and culture plays a significant role in how individual nurses practise.

Complexity theory analysis

This was achieved primarily by gaining a global view of the case, and identifying emerging themes. With the research question, "what practising nurses understand by the term evidence-based practice and how it shapes their clinical decision making", and themes identified in the literature at the forefront, the data was explored for issues around relationships and interdependencies within the case, at and across the boundaries. This exploration was fruitful and allowed a comprehension of 'the bigger picture', which emerged as having a significant impact on individuals and practice.

I identified 4 themes which will be explored in depth in the discussion chapter.

- Variations within the case in terms of delivering evidence-based care across all specialty departments.
- Relationships within each multidisciplinary team have a significant impact on how care is delivered.
- Infrastructure support to enhance the delivery of evidence-based practice.
- Leadership provides creative support for evidence-based practice.

The presented reasons for the research methodology, and the methods used to explore the research question "what do practising nurses understand by the term evidence-based practice, and how it shapes their clinical decision making" have been described. The participants' perceptions and experiences related to evidence-based practice are of interest and I seek their contributions to gain understanding and insight. In the next chapter, participants' contributions to the research question are revealed and presented.

CHAPTER FOUR

Findings

The aim of this chapter is an analysis of the data obtained from the focus group and ten participant interviews. Data was gathered through personal interviews, one focus group interview, and included the researchers note compilation during the data collection process. The interviews were semi structured with questions used to prompt each discussion. The participants arrived at the interview having received an information pack detailing the inquiry, including interview questions, prepared and ready to share information and their perceptions with the researcher. Participants engaged in an interactive process to create meaning which allowed for the emergence of a diverse range of information and contributions. This chapter develops a case study of "what practising nurses understand by the term evidence-based practice and how it shapes their clinical decision making" within a bounded context. Ethics was a consideration throughout the entire study and is a feature in the discussion chapter. In order to maximise confidentiality, the decision was made to present the information as raw data in group sections that form responses to the general questions posed. *Participant comments will be presented in italic font.*

4.1 Background and clinical context:

4.2 Learning Background – Individuals' preparation for practise

4.3. Discussion around what evidence-based practice is.

4.3.1 Is evidence-based practice implemented.

4.4 Information literacy skills and their effects

4.5 Clinical decision making, what informs or influences it

4.6 What are the challenges / constraints in delivering evidence-based practice.

4.7 An overall analysis of the data using a complexity theory lens.

4.1 Background and clinical context:

The clinical context is within the private sector of healthcare delivery and includes, within the bigger organisation multiple specialty practice areas which are required to work together to achieve optimal patient outcomes. The focus is perioperative practice, ranging from day stay to high acuity care requiring intensive care, high dependency input. The complexity of patient care incorporates many variables patients bring to their healthcare experience, including complex health issues, involving chronic conditions and associated treatments. There is acknowledgement of an increasing patient acuity and increasing sophistication in terms of perioperative intervention, from both anaesthetic and surgical perspectives. This translates to an increased risk to the patient, which the health professionals and multi-disciplinary team are challenged to minimise.

4.2 Learning backgrounds – Individuals' preparation for practice.

Participants came from a variety of learning backgrounds and differing preparation for practice. Their present appointments at the time of data collection ranged from staff nurse to senior nursing appointments including: educator, co-ordinator, clinical nurse manager and operations manager. The participant professional profiles are listed:

1. Hospital based trained in New Zealand
   No postgraduate studies
   Experienced clinically in theatre (OT) nursing
   Holding a senior nursing position – Clinical Co-ordinator
   Experience in private healthcare delivery sector

2. Hospital based trained in New Zealand
   Completed a transition to Bachelor of Nursing program
   Experienced clinically in OT nursing
   Holding a senior nursing position – Clinical Co-ordinator
   Experience in private / public healthcare delivery mix.

3. Hospital based trained in New Zealand
   Completed a transition to Bachelor of Nursing program
   Experienced clinically in Intensive Care nursing
   Holding a staff nurse position and
   Tutoring postgraduate studies
   Experience in private / public healthcare delivery mix.

4. Hospital based trained in New Zealand
   Completed a Postgraduate Certificate in specialty practice program
   Experienced clinically in surgical ward nursing
   Holding a staff nurse position.
   Experience private public healthcare delivery mix

5. Hospital based trained in the United Kingdom
   No formal Postgraduate studies
   Holding a senior position – Operations manager
   Experience private public healthcare delivery mix

6. Hospital based trained in South Africa
   Completed a transition to Bachelor of Nursing program in New Zealand
   Experienced clinically in OT
   Holding a senior nursing position – Educator Intra-operative area
   Experience private public healthcare delivery mix

7. Hospital based trained in South Africa
   No formal postgraduate studies
   Experienced clinically in Intensive Care Nursing.
   Holding a senior nursing position – Clinical Coordinator
   Experience private public healthcare delivery mix

8. Diploma in Nursing in New Zealand Polytechnic
   Completed a Postgraduate Certificate in specialty practice program
   Experienced clinically in surgical ward nursing
   Holding a staff nurse position.

Experience private public healthcare delivery mix

9. Diploma in Nursing in New Zealand Polytechnic
   Completed a Postgraduate Certificate in specialty practice program
   Experienced clinically in surgical ward nursing
   Holding a staff nurse position.
   Experience private public healthcare delivery mix

10. Diploma in Nursing in New Zealand Polytechnic
    No formal postgraduate studies
    Experienced clinically in surgical ward
    Holding a staff nurse position.
    Experience private public healthcare delivery mix

I have grouped the participants into three types of preparation for practice, including

- Hospital Based.
- Diploma Graduates – Polytechnic.
- Either of the above, but including a transition to Bachelor of Nursing Degree or postgraduate studies.

In the interest of clarity of individual participant contribution, participant's comments are followed with a code to identify differences in their preparation for practice thus:

H = Hospital trained

D = Diploma trained

PG = Made transition to either Bachelor of Nursing Degree or Postgraduate studies

Participant quotes which were common to all groups are not coded.

The hospital based trained participants all indicated that their knowledge relating to evidence-based practice was 'self taught'. *"I had no introduction to research and evidence-based practice had not even been thought of. Learning tended to be a hit or miss approach as we were part of the workforce and learning was not always linked to experience"H.* One participant indicated *"what I was taught was based on something, the*

terminology doesn't fit today, but it was evidence of a sort, some anecdotal and some research. It served us well and we did a good job"H.

Those who had completed the transition to Bachelor of Nursing and formal postgraduate studies all indicated receiving some formal education, but it was more theoretical rather than practical and there was a perception that the translation into practice was problematic based on numerous factors.

- *"We need more education, we are clinicians not researchers"PG.*
- Participants identified areas of skill development that were needed and they included: how to find appropriate literature efficiently and quickly to support decision making, how to critically analyse it and synthesise the findings into best practice guidelines and actual practice.
- Time was considered an issue only when clinical questions requiring quick decisions presented, otherwise current workloads favoured time to explore the literature and discuss clinical issues. Although there were some variable responses depending on which clinical context the participant worked.
- Tensions associated with power and control were discussed, specifically *"Surgeons were more likely to value medical research and be 'closed' to nursing research"PG.* There was a perception that to make evidence-based practice work within any context, there needed to be a respect of the different bodies of knowledge that all members of the disciplinary team contributed, not just nurses.

Participants were unanimous in perceiving research as being synonymous with evidence-based practice.

4.3 Discussion around what evidence-based practice is.

There was a unanimous acknowledgement of the need to move away from habitual ritualistic practice to "*practice based on current evidence which justifies action*". Various OT participants indicated the wearing of face masks was an example of habitual behaviour, despite there being no research to support the continuation of such practices. There was also an acknowledgement that there were barriers to making evidence-based

practice happen and there was an element of *"sometimes being stuck in the habitual ritualistic warp"PG.*

Evidence-based practice was discussed in terms of *"research out of which guidelines are developed"*, identifying *"randomised control trials as the gold standard"*PG. Currency of the evidence was also mentioned and identified as being five years within their clinical context, *"providing a proven reason for their practice"PG.* Individual perceptions and definitions of evidence-based practice were limited to research based guidelines. When prompted with the question "if you cannot source evidence", practices based on approaches *"traditionally known to work"* were also considered legitimate and included within their broader definition of evidence-based practice.

The participants with greater exposure to postgraduate studies included *"expertise and experience as being an integral part of evidence-based practice"PG,* and one participant expanded further by stating that *"expertise and experience, together with current research evidence provided the best knowledge in a given space and time which was growing and evolving as practice and research allows us to be more informed – evidence-based practice is not solely research, but included experience, reflection and other forms of learning, both formal and informal"PG.*

4.3.1 Is evidence-based practice implemented?

The responses to the question 'is evidence-based practice practiced' were varied and included: *"We talk about it, it's in our psyche. It's in the nursing council documentation. Its theoretical, but I question if it transfers into practice"D.* There was a perception that our professional body expectations and education does not take into account the multiple realities and complexity of practice.

There were issues raised around the availability of current research and 'good evidence' to support practice. *"Systematic reviews and documented research evidence are increasing – we are moving towards having the evidence, but still have a way to go"D.* One participant felt that *"evidence-based practice was not implemented as there were difficulties in accessing nursing research, I question the reliability of the internet, and access to quality research"D.* This was supported by other participants with expressed frustration indicting

"in a lot of areas practice is not adequately researched or at least aspects of practice are not"PG. An interesting observation when participants indicated issues with information literacy skills, and access of databases on a regular bases was not a feature of regular practice, even when confronted with a clinical question. Having said that, there is an acknowledgement in the literature that there are gaps, and work needing to be done to support clinical practice (Osborne & Gardner, 2004). There is also reference to the link between the growing body of research knowledge and its utilisation in the practice setting being questioned (ibid, 2004).

For one participant, the application of evidence-based practice was questionable, indicating *"Not as much as we think or would like – literature reviews are not done as a matter of course and I doubt that the literature/research is digested, analysed and synthesised to allow integration into practice guidelines and actual practice"PG.*

For some the indications as to whether evidence-based practice is implemented are uncertain. *"I think so, I hope so"* and going on to say, *"I would like to think policies are evidence-based practice linked"PG.* Indicating there is a reliance on policy makers to make those links and support their practice to be evidence-based.

Knowledge of databases available included Medline, Proquest, and Google. Not all were available within their clinical context however, but rather there was "*a reliance on participation in formal study through an education institution to gain access to databases"D.* There was a perception that accessing databases and search engines was considered *"more a part of formal education rather than a clinical practice activity".* Although for some access to databases is daily (2), for others it is monthly (3) and the majority annually, or at policy review time.

Participants indicated *"we are clinicians, not researchers"PG,* which extended to research interpretation which was presented in such a way that made it "*difficult* for some *to identify 'good' and 'bad' research"PG.* There was acknowledgement of skill deficiencies which did not allow clinical staff to get maximum use out of research findings, how to source, how to critique, analyse and synthesise and be convinced about research validity and reliability in relation to their practice. Consequently there is a reliance on "*...policies, experience and expertise",* their own and/or others. In the clinical context, policy /

procedure documents are available and regularly update. *"Policy review time is the only time I access databases for current evidence"PG.*

One participant indicated *"NO"* to the question is evidence-base practice delivered. *"In our clinical context, private doctors define practice which is not necessarily evidence-based"D.* One other participant suggested evidence-based practice *"is certainly increasing, but surgeons may be a barrier, they want to do things their way. If not evidence-based, they need to be challenged"PG.* There are some tensions and power dynamics playing out in the clinical context between nursing and medical personnel, and the indication that a large number of nursing staff would not be comfortable challenging the surgeons' authority. Some of the more senior nursing staff revealed their handling of some tensions by suggesting *"if something is working leave it as it is. If it is not working address it, access the literature, source the evidence and present it to the surgeons"PG.* There was also the comment *"we need to pick our fights"PG,* suggesting that the frequency of occasions where practice may be challenged is more numerous than is comfortable to deal with. *"Surgeons are not always receptive, and there are times of cross specialty conflict even in the literature, making it hard to define best practice in a specific situation"PG.* The examples given included differences in approach to treatment of complex health issues in one individual, between cardiac surgeons and renal physicians, cardiologist and anaesthetist to name a few. In the reality of practice, clinicians are sometimes challenged with a complexity and multiplicity of some patients' presenting problem(s). There are times when there is no research evidence as to how to proceed and deliver best practice. Tensions exist therefore at specialist clinician level, with experts versus evidence sometimes being at odds. *"Research results don't fit all situations – we do what we think is right and monitor the patient closely for their response – and respond according to need. Sometimes that's as good as it gets"PG.*

There were some departmental differences in response to the question – is evidence-based practice practised. One Theatre (OT) nurse indicated *"Absolutely – Yes"*. She went on to say *"evidence-based practice within the OT context is talked about all the time"H.* There was a perception that *"medical staff are much more critical of research findings and there is sometimes quite a variance in interpretation"H.* There was an acknowledgement that *"one size does not fit all"*, and related experiences at conferences *"where research findings were presented and strongly contradicted among experts in the field"PG.* Again

there is an acknowledgement of the complexity associated with dealing with multiple specialties and complex healthcare issues.

In the acute context *"clinical staff often need to respond rapidly – think on your feet type situations – there is not the time to search the literature to support your decision"H.* Even if there was time, there were frustrations related to:

- *Search skills D*; how to do it, what to look for, how to appraise, and even understand research methodology.
- *Computer skills D.*
- *"As nurses we rely on consultants and drug/medical representatives to contribute to best practice guidelines"H.*

When I explored nursing versus medical evidence-based practice, that differentiation had not been made, but there was an acknowledgement in the OT environment of *"nursing still has some sacred cows"H.* There was a suggestion that "*changing to practice supported by evidence was 'often thwarted"PG* giving an example of sliding boards for lifts in the OT environment. Considering this change of practice is based on minimising risk of injury to the staff and patient, not surprisingly nurses were open to change and were implementing it with some ease, however medically it has been blocked even with the weight of evidence to support it.

Other areas identified as creating barriers to linking policies to evidence included issues related to *"practical difficulties and structural restraints making it unworkable"PG.* This was related to infection control and air flows.

Cost considerations were not an issue raised by the participants except one who related the example of "*nursing staff drawing up cytotoxic medication without the protection of a lamina flow unit, which was considered 'best practice'PG,* and necessary to minimise staff risk. *This was a cost issue as the cost would have to be transferred to the patient and the surgeon was not happy to do that"PG.* The ethics of this practice needs to be considered and will be addressed during the discussion.

Resources to support staff understand and deliver evidence-based practice was an area of interest. There were some departmental differences where one department had their own dedicated *"Policy Nurse"* responsible for policy development and review and integration of current literature. Other areas had to meet the same level of commitment within their existing resources with no dedicated position, which created some frustration and inter-departmental tensions. Technology and internet access were available to all staff, although databases were currently under review at the time of data collection, with a commitment to providing better access onsite to support practice.

Education to upskill personnel was an issue identified by all participants. This was specifically related to information technology, with a variety of areas of need ranging from;

- *"I don't have the confidence in basic computer skills"H* and others more interested in
- *"support in learning to search and access information to support practice" PG*
- *"how to make sense of the research"*
- *"the whole process, of getting the information, understanding it and integrating it in practice".*

4.4 Information literacy skills

Exploring information literacy questions generated a diverse range of responses which were more related to the participants' present appointment within the local clinical context rather than their education experience or preparation for practice. Some areas were perceived to *"have a culture of inquiry and encouragement to live in the question and explore better ways of doing things"PG.* Other areas had not made that shift and staff are *"not encouraged to question practice or spend any time accessing the literature in pursuit of clinical inquiry"PG.*

Policy development was perceived by most to be *"the responsibility of the senior nursing staff, particularly the Clinical Co-ordinators and Quality Personnel"*. Some also included other specialists eg pharmacists.

Databases used and sources of evidence varied between departments and reflected the specialty practice area. Critical Care Journals and JAMA were journals considered reliable, with a stronger reliance on medical research. Nursing journals were considered generally to be of little value from a research perspective. Databases included Proquest, Medline and Google. One participant indicated having *"limited access due to the huge cost and the organisation was presently exploring how to secure databases to best suit their needs"H.* There was the suggestion that there was a reliance on some staff undertaking postgraduate studies with internet access part of the program, benefiting the organisation. The same participant *"questioned the trustworthiness and reliability of some of the material from the 'net'"H.*

Five participants indicated they accessed the literature themselves to explore clinical questions, and the frequency that they engaged in the activity ranged from daily access to policy review times, which may be annual or every one - two years, although new information and changes in practice might necessitate policy review at any time. One participant indicated "*frequency of accessing evidence was variable and she needed prompting, either, clinical questions, self interest or specialty interest"PG.* Five participants "*rely on 'others' to source evidence and integrate it into practice guidelines*"*H* to achieve evidence-based practice in their workplace. When asked who 'others' might incorporate, the response included; "*senior nursing staff, clinical co-ordinator's, educators and managers. Also professional organisations, both national and international were considered a source of 'best practice' guidelines. Included in this group were the American Organisation of Operating Room Nurses (AORN) and Australian College of Operating Room Nurses(ACORN)"H.* There was awareness that *"there may be insufficient evidence for 'best practice' for a lot of what is done in the perioperative area of practice"PG.*

Some areas were enthusiastic about exploring clinical questions and involved the team in achieving the sourcing of evidence. *"We have some staff with extensive experience who have developed specialty interests in our own clinical context eg urology procedures, and they have really explored the specialty subject and attended conferences etc, all of which have allowed them to achieve a depth of knowledge and skill development. Part of that, is embracing the literature and sharing it"PG.*

One senior staff "*delegated the role of sourcing evidence to the more recent graduates, who had shown some enthusiasm for doing so. Education and program content now incorporate information literacy skill development which needs to be developed in the clinical context*"*PG.*

Junior nurse versus senior nurse relationships were considered in some areas to create tension, while in other areas there was evidence of *"good cross fertilisation and skill sharing"PG.* Some of the more senior staff lacked the enthusiasm to engage in sourcing evidence, this seemed to be more related to their computer skills or lack of. However there were individual differences within the senior group which were driven by individual motivation rather than educational experiences and their preparation for practice. "*Differences were determined by the individuals' ability to critically think"PG.*

The best combination was "*junior staff being able to access information, senior staff being receptive to their skills and learning from them, but mostly a two way sharing that allowed the juniors to benefit from the senior staff's insights and ability to critically reflect and think things through, and the senior staff's enthusiasm to embrace the literature"PG.*

One participant indicated "*accessing other specialists and networking with other hospitals, especially tertiary referral services to get the most relevant information to support their practice"PG.* This was particularly helpful when there was a working relationship with the institution and potential for local patient referral to them. When challenged as to how they knew that the specialist information was supported by the literature and evidence-based, the reply was *"there is a leap of faith"H.* The perception being, that specialists would not be in that senior specialist position unless they were competent to share 'best practice' information.

Computer skills were an area of deficiency for some and the opportunity and time to correct that deficiency an issue. One clinically experienced participant indicated that "*although computer literacy was improving*" she *"preferred sourcing evidence from journals which were peer reviewed rather than internet sources" as* she *"didn't have the skills and was dubious about the quality of information"PG.* Information seeking activity was done in her own time in the library, but she *"has noticed a reduction in library use by most staff suggesting that is due to improved computer skills"PG.*

There was some discussion around perceptions regarding how well equipped and supported nurses were to practice information literacy skills, and the responses ranged from "*50 – 75% capability*", even including the senior nursing staff. Within the ward context, this was considered to be "*due to ongoing learning and a culture that encouraged input into policy development. There was collaboration and support available for all to develop further"H.* One senior participant "*questioned whether most staff would be able to interpret and critically analysis research,* indicating *on the whole probably not"H.*

Some participants never access the databases during their clinical practice time, indicating *"I never think of doing that"* another participant indicated *"time is an issue. I often need information for decision making 'on the run' so rely on what others have put in place, my own experience, expertise and colleague collaboration"H.*

4.5 Clinical decision making, what informs or influences it?

In exploring this question there is a focus specifically on the integration of evidence-based practice into clinical decision making rather than a comprehensive exploration of the clinical decision making process in its entirety.

There is a reliance on *"nursing theory and knowledge taught in the preparation to practice program"H.* There is an appreciation of *"looking at the whole picture"* and using both knowledge and experience to support decision making. *"Experience counts"H,* and needs to be reflected on to build expertise and enhance ones knowledge base

"Experts" both local and within tertiary referral hospitals were a rich source of support for informed decision making as well as *"local policies and procedures"*. There was an assumption that all policies were evidence-based practice linked, and that experts were indeed experts. When asked the question, what constituted an expert, responses included; "*clinical coordinators, educators, managers, surgeons or medical staff*". For one participant she described it as *"a giant leap of faith that experts were indeed experts"H.* There was discussion around experts and expertise being developed following *"years of experience in specialty practice accruing specialty knowledge"H.* others added *"backed up with training and an ability to use learning and common sense"PG.* There was an

acknowledgement that "*time in the job was not enough*" and integral to "*developing expertise involved being critically reflective of their practice and the practice of others*"PG.

One participant related formal appointments to expert status indicating "*an expert has lots of experience within her specialty topic, having a specialty appointment eg clinical nurse specialist and providing a resource to be tapped into*"PG. This was related to specific topics such as "*infection control, quality coordinators, Intra-Venous and Cardio Pulmonary Resuscitation specialists*"PG.

The work dynamic was influential in terms of decision making practices, with "*patient conditions changing quickly and acuity demanding rapid responses to stay safe*". "*Each situation needs to be analysed, and we use what we know and what is used elsewhere. We rely on feedback and input from colleagues*"H.

"*Personal and professional knowledge is explored to support decisions, when faced with a dilemma, we make judgements, look at the options and make a decision that fits best*"PG. There was an acknowledgement by one respondent that "*there needs to be some rationale for the choices made and account for decisions taken*"PG. Some participants indicated "*collaboration and team participation happens, but individuals may need to make the final decision*"PG.

One participant thoughtfully added to the discussion of evidence and experience, stating "*Patients' physiological responses happen regardless of what the evidence says and we need to respond to the body needs appropriately – for that we draw on experience*"H.

4.6 What are the challenges/constraints in delivering evidence- based practice.

Resistance was a word which frequently recurred in the conversations with participants, although the source of the resistance was variable. There was a perception of resistance associated with the nursing staff embracing evidence-based practice. One participant indicating that "*Age – specifically some of the 'older' nurses just don't know where to start*"PG. For another participant "*age has nothing to do with it. Although senior nursing staff's training didn't include preparing them to deliver evidence-based practice,*

depending on the individual and their work area, some are 'tuned' to research and computers, and others are not. Individuals make a choice to engage their brain into research and develop computer skills, or not. If not – fear and lack of motivation are probably the reasons"H.

Senior nurses with extensive clinical experience, defined as greater than five years, who embrace the literature and have developed the skills to integrate research in their clinical practice are considered the 'gems' of the workforce. The junior staff "*are more inclined to do things without thinking beyond the procedure and realising the bigger picture, and work within boundaries relying on guidelines and guidance. To expect them to critically analyse is a 'big ask' – they need stability and integration into the clinical context, relative control in the form of rules, and also to have the guidance of senior more experienced staff to work safe. Only when they are more comfortable and secure in their workplace can they develop the skills required for critical analysis"H.* There was a perception that "*Beginning practitioners are safe because they stick to the rules and are happy to be guided"H. "Staff with two to five years of clinical practice, are more problematic as there is a new found confidence that is sometimes misplaced"H.*

There was also a perception of resistance associated with medical staff input, and reaction to nursing staff input. The challenge for some nurses was "*knowing what constitutes best practice"PG*, an awareness of current practice not being consistent with best practice recommendations, and their frustration, despite making the evidence available, with maintaining the status quo and "*accepting medical staff rule"PG.* The example given was "'*dry dressings' being ordered by medical staff"PG*, when the literature contradicts such practice. There were "*some instances of practice* which could be described as *detrimental* but tolerated in the interest of '*picking your fights'"PG. "The biggest gripe is doctors being wedged in their own routines and not being open to change, specifically nursing directed initiative"PG.* Examples included use of pressure beds and gel pads to prevent pressure ulcers. There was also a perception that nurses "*needed to challenge the medical staff*" 'routines' in order in individualise care for the patient. Although there was acknowledgement that medical staff responses were variable, there were impressions of difference between the public health sector, where nurses had more control as opposed to the private sector where the "*medical staff were the customer-and revenue-generator"* and a 'power dynamic' was more evident.

There was some frustration as research defined 'best practice', and nursing staff's "*attempt to initiate change to incorporate best practice guidelines were thwarted by resistant medical staff"PG.* Examples included 'nil by mouth' procedures and preoperative care, including 'bowel preparation' procedures. Wound management is well researched and documented in the nursing literature, often led by specialist nursing clinicians and researchers. "*Wound management continues to be dictated by medical staff, not aware of current nursing literature or research, nor likely to ever source it"H.*

How individual nurses approached medical staff with regards to change and implementation of nursing literature's best practice guidelines was another variable, with one participant feeling the need to "*communicate or consult on all the changes related to nursing practice* she wished to make in order *to seek their approval"PG.* This was often met with some resistance. One other participant differentiated between what was nursing and what was medical and felt that "*nursing staff should have the authority to develop their own professional practice standards, integrate research and best practice related to the delivery of nursing care. Such changes should be implemented without needing to seek approval from medical colleagues"PG.* There was a consensus that "*nurses need to challenge medical colleagues",* but there was also a perception that "*approaches needed to be looked at* and *nurses needed confidence to do so"H.* This was enhanced by *"the maturity of both knowledge and experience"PG* and there was a huge strength in "*working together and capitalising on individual strengths"PG.* This was relevant to medical and nursing staff relationship and also junior and senior nursing staff relationships.

Departmental and organisational culture was considered to play a significant role in the interpretation and implementation of evidence-based practice. Some clinical contexts were more inclusive and embracing of evidence-based practice and a culture of inquiry prevailed. Departmental resistance to incorporating evidence-based practice was evidenced by "*denying nurses the time to source, and explore the literature to support practice, despite time being available"PG.* The interpretation of information literacy skill use was considered more an educational activity rather than a clinical one. In fact some participants indicate their experience of "*discouragement at any attempt to source literature to support their clinical practice while at work"PG.* Any efforts to implement change associated with what the literature declared best practice was thwarted.

Other participants expressed "*a lack of time and heavy work loads*" as barriers to accessing material to support their practice, others deny this "*excepting situations where rapid responses associated with an emergency or high levels of acuity existed, and time was a critical factor in decision making*"*PG.*

Education to support staff in their understanding, interpretation and application of evidence-based practice was considered to be "*lacking or difficult to access*", with few short courses available and the only other alternative of committing to postgraduate study which was difficulty for some with their multiple commitments. The appropriateness of the education available was also challenged and some indicated it "*needed to be specifically related to their clinical context and support given to translate the research into their day to day practice*"*PG.*

Some participants indicated, "*feeling daunted by it all. There are questions that need answers, but the time and expertise to do it challenges many*"*H.*
The comment "*we are clinicians not researchers*" was a recurring statement by participants, and this is reflected in the literature with Foster (2004) contending that education has focused on 'research' rather than 'research application' and there needs to be some focus on education which differentiate between, the 'research' question and the 'search' question, therefore making the distinction between, knowledge generation and knowledge gathering.

"*60% of participants were unfamiliar with some of the major databases*"*PG* available to support their clinical knowledge gains, specifically Joanna Briggs, CINAHL, and Cochrane. Skill level was a variable reported by all the participants, giving some consideration to their own skill level and making a judgement of others in their clinical context. Areas of concern included: "*Computer skill, including familiarity with basic function*"*H,* was an issue for some, as well as "*searching the internet*"*D* to maximise access to appropriate literature to support their practice. "*Searching is only a start and on its own not enough*"*PG.* "*Ability to critically analyse the literature and synthesise it*"*PG,* demonstrating understanding and making links and its ultimate translation into clinical practice if that was appropriate. One participant indicated that '*although nurses might be well placed to find time to read material, their ability to read with discretion was*

questionable. There needs to be some focused education if it is ever to get off the ground"H.

Some of the participants recall their difficulties with finding appropriate literature, but indicated it "*gets easier with time and experience – it is a practice thing. Patience, individual and organisational commitment needs to be constant"PG.* One participant indicated *"I was never encouraged to explore the literature, I could ask all the questions I needed to, but the answers were sourced from the experience of those around and what was known to work. If the answer wasn't obvious there was an element of trial and error, sometime it was right and sometime not"PG.*

Lack of evidence or an inability of existing evidence to answer the clinical question was voiced by numerous participants. The example given was that of mobilising patients post-operatively following joint replacement surgery. *"I have learned by doing it the wrong way at times – the literature isn't specific enough. The concept of trial and error is alive and well"PG.*

There was an acknowledgement of the complexity of clinical practice and multiplicity when dealing with competing specialists. "*Sometime the evidence and best practice guideline specific to one problem may clarify the right thing to do, but it may be contraindicated because of another presenting problem in the same patient. Even the specialists struggle with what is right and what would most benefit the patient. I guess in that situation we all have to draw from our own experience and that of others and do what we think is right. There is often a leap of faith as we monitor the patient closely and respond appropriately to the clinical situation"PG.*

Constant change was a feature in some of the discussion with participants indicating "*too much change has had an impact and the changing goal posts were threatening"D.* Evidence-based practice is considered to be "*quite a different approach to how we used to practice nursing, and more challenging in terms of acquiring the skills to implement it"H.* There are difficulties implementing change associated with shift work, work loads and getting the information to all the staff, and sourcing education to meet the needs. "*We are constantly exposed to new equipment, new procedures, and changes in practice. I know*

change is part of life, but it is exhausting and sometime I crave for the familiar and just some consolidation of what I know"H.

There were indications by some of the participants that "*there is evidence in our day to day practice that what the research indicates to be best practice, and current practice is at odds"PG.*

4.7 Overall analysis of the data using a complexity theory lens.

4.7.1 Foreground and background

Complexity theory suggests that we change our interpretation of the organisational chart of the case from the individuals, to the lines between the individuals, bringing to life the 'relations, flows and exchanges'. The more traditional research methodology has focused on individuals in the foreground, which ignores process and relations, flows and exchanges. Complexity theory would bring those things to the foreground and relegate personnel to the background. (Anderson et al., 2005).

As the research question was explored, individual personnel and their preparation to deliver evidence-based practice had its space in the foreground for part of the time only, to explore issues of individual interpretation, attitude and implementation. Contextual issues however, have a significant impact, and should not be ignored or relegated to the background, as the contextual issues can either deny or limit the implementation of evidence-based practice or enhance it. For the purpose of analysing the raw data, the foreground has been assigned to both the individual and contextual perspectives, to achieve understanding of the case as a whole. At times this has provided a sense of duplication, however the rich raw data highlights differing issues and are worthy of inclusion to clarify different perspectives.

4.7.2 Interdependencies across boundaries of the case

Complexity theory recognises that ideas and actions are inter-related and that there are inter-dependencies between thought and action across the various boundaries separating departments (Anderson et al., 2005).

Departmental differences were an area of interest: their perioperative clinical focus ranged from pre-operative preparation, to intra-operative intervention, and finally post-operative management and recovery. Each aspect of the perioperative experience is dependant on the others and ideally with good departmental synergy forms an interdependence which can maximise patient outcomes.

With a focus on evidence-based practice there were departmental differences to explore, such as how they approached their professional practice, and professional development. The ward areas, which incorporate the pre and post-operative experience, had "*a culture of inquiry, and support for postgraduate education. Our nursing demographics indicate a much younger group of nurses than the national average"PG.* Participants reported "*delegating searching of literature, and policy review and development to the younger staff with senior staff support and supervision to make sense of the literature and translate the research into practice"PG. "Organised journal club activity is a feature which supports ongoing development"D.* Although this was a voluntary activity, the creation of a non threatening environment encouraged a growing inclusion of a staff mix, with the junior staff and senior staff exploring together, benefiting from each others strengths and addressing any weaknesses.

Participants indicated there were "*issues around some skill development, specifically with sourcing information and knowing what to do with it"D.* There was a perceived lack of opportunity for them to access the education needed to support their development, but "*the journal club is a good thing to do even though we recognise that we could get more out of it if we were better prepared"D.*

Policy review and development are incorporated in the senior nursing appointment job description, with organisational support to achieve it. *"The frustration is seeing a developing nursing group, who are at times thwarted by resistance from various sources, but we remain motivated to keep trying"PG.*

The theatre (OT) area had a different feel, with issues around workloads and staffing. The OT is a demanding and highly technical environment where workloads are at times heavy and the type of work exacting, with varying patient acuity and "*decisions needing to be*

made on the run"PG. The intensity of the relationship of the multidisciplinary team is more evident, with at times competing specialty challenges running concurrently. The nursing staff has a clear division of labour, with a significant contribution to make to the overall team effort, but are able to rely on other professionals to manage different aspects of patient management without their involvement. The participants indicated that "*evidence-based practice was a feature of OT work – it is talked about all the time'H.* This was related to medical practice, specifically surgeons and anaesthetists, and procedures carried out during the intra-operative experience.

Nursing specific evidence-based practice was a focus of exploration. One participant indicated "*there are still some sacred cows"PG*, suggesting ritualistic practice was still a feature. "*I don't think there is a lot of evidence for what we do, we rely on professional bodies such as AORN and ACORN, and even they seem to guide us with what is known to work rather than hard evidence"H.* This is supported by Osborne and Gardner (2004).

Time was a recurring feature in the discussion specific to OT participants, indicating "*getting through the workload was a challenge without taking the time to try and source information that wasn't there"H.* Again the lack of skill and perceived lack of opportunity to access those skills were discussed, identifying information literacy and computer skills.

There is a perceived lack of encouragement to progress the evidence-based practice paradigm, with one participant reporting "*being on the receiving end of negative and aggressive behaviour from other hospital trained nurses regarding my university education"PG.* There is a perceived discouragement to advance professional skills that support evidence-based practice in action. Professional development is maintained by attending conferences, with a lesser support for postgraduate studies. Professional development was perceived to focus on what experts have to contribute, a sharing of current research and debate among experts as to the appropriateness and relevance of any discussion to inform best practice guidelines. "*There is often heated debate and even contradiction as the experts are at odds. So where does that leave us? We do what we think is right and what we think will work"H.*

Policy review and development are not incorporated in the OT senior nursing appointment job description, but rather there is a dedicated appointment within the OT to achieve and

maintain policy statements. This provides an inconsistency within the case, as their ward peers are required to provide this function, and there are obvious tensions with the differing expectations.

There appear to be two distinct groups within the case, specifically OT and Ward nurses that have different approaches to evidence-based practice and its implementation. The departmental interdependence was explored revealing reports from participants of procedural differences which crossed boundaries and impacted on patient care. The specific examples included intravenous access, lines and management. Wound care was also an aspect of care with differing approaches. There were some indications of *"frustration as OT established procedures were undone in favour of post-operative ward preference and management protocols"H,* the latter perceived to be supported by the literature and therefore evidence-based. Inevitably there are process issues that would benefit from consistent approaches and application throughout the entire perioperative experience, this would necessitate some collaboration and input from all the specialty perspectives. There was a perceived *"lack of consultation and collaboration between the different departments"PG* and also a suggestion by two participants of *"disregard and undermining of professional opinion and work done*, indicating *it is irrelevant in their context"PG.*

There are potential ethical implications in this situation for patient risk and safety. Consideration needs to be given to the costs, education and professional practice standards, patient and staff satisfaction, not to mention relationship building and synergy, to overcome this cross boundary inconsistency.

4.7.3 Dimensions of relationships

Complexity theory requires an understanding of the dimensions of relationships. The need to remain open to the unexpected and explore the rich understanding which comes about by identifying those things which are similar to or different from various aspects of the case (Anderson et al., 2005).

Relationships explored included intra-professional and inter-professional, as well as organisational aspects. Fundamental to relationship building involves respect for all

individuals contributing to the team approach to patient care. This includes all levels within the case, local contexts as well as cross boundary relationships.

4.7.3. Intra professional relationships involving the different nursing staff within each clinical context and the case as a whole became areas of interest and exploration. Specifically:

4.7.3.1 Junior versus senior staff

4.7.3.2 Different preparation to practice groups

4.7.3.3 Differences across different specialty practice areas

4.7.3.4 Leadership styles.

4.7.3.1 Junior versus senior staff

Junior nurses were perceived to be "*better equipped to embrace evidence-based practice"H* with some preparation in the form of computer skills and information literacy "*incorporated in their preparation for practice program"H.* How this was used varied between individuals and specialty practice areas. For some participants "*junior nurses need to be socialised into the clinical area and the practicalities of nursing, things like time management, getting through their workloads, working as a team player. Not getting those things right are the things that overwhelm and stress them"PG.* For other participants "*junior nurses have better skills at searching the internet and have had some formal instruction on what evidence-based practice is all about, something we seniors haven't had. We need to respect their strengths, knowledge and skill and work with them to advance things further"PG.*

Two participants with less clinical experience reflected on their earlier days of nursing in the perioperative setting and reported "*being discouraged from looking up the literature and any attempts to work outside the local policies and procedures, even when they knew they were not evidence-based"PG.* Perhaps it could be argued that balance is in order, with information literacy and all the skills that go along with evidence-based practice being part of the transition and integration into clinical practice. The suggestion that information literacy and orientation to the clinical context are two separate components denies the basis of evidence-based practice and maintains the theory/practice gap.

4.7.3.2 Different preparation for practice among the three groups.

The three different groups represented in the research participants incorporated hospital trained participants, diploma graduates and bachelor of nursing graduates. There were further variables as some participants were overseas graduates, some of which completed postgraduate studies in New Zealand.

The data indicates hospital trained staff were "*self taught when it comes to evidence-based practice*". This is not surprising as the hospital trained nurses are older, having completed their preparation for practice prior to the introduction of evidence-based practice in undergraduate curricula.

The diploma and bachelor of nursing graduates, all of whom graduated from a transition program, depending on how long ago the training had taken place, considered "*their formal instruction on evidence-based practice to be more theoretical than practical*"*PG* and its interpretation into practice had been problematic. Those with more recent exposure to postgraduate studies indicated a greater "*awareness of evidence-based practice and its inclusion into the clinical practice setting*"*PG.* This may suggest that postgraduate education programs are developing and providing a more integrated teaching method and making the links between research and practice more overt, with application and implementation practises included in the teaching and support.

When analysing individual participants' understanding and inclusion of evidence-based practice in their day to day nursing care, the data would suggest that "*individual motivation and, the clinical context supporting it*" were the determining factors of how evidence-based practice was applied, rather than their individual preparation for practice. For some participants there was an appreciation of "*being included in workplace discussion and exploring clinical questions. We all have something to offer and it's great to talk things through with other experienced staff*"*PG.*

What was evident from some participants' reports was the lack of respect for others strengths in what individuals could contribute to the implementation of evidence-based

practice. Reports included "*it is frowned on for me to sit at the computer looking up the literature, when I should be running around working"PG.*
"My university degree attracted negative comments and passive aggressive behaviour making me feel worthless, incompetent and insecure"PG.

4.7.3.3 Differences across different specialty practice areas.

The data indicates there are marked departmental and specialty practice differences across the case. The ward environment is more inclined to embrace evidence-based practice. Although the multidisciplinary team is a feature of the perioperative care, ward nurses spend a greater amount of time without medical staff supervision and there are opportunities to explore nursing activity, procedures, knowledge and research. In the ward context which has a culture of inquiry, "*evidence-based practice is embraced, even with barriers to its implementation, the motivation to practice it is high"PG.*

In the OT environment, there is a multidisciplinary team with a hierarchy working within a technically complex and acute setting. Individual expression and developing a nursing specific body of knowledge does not appear to be given priority, rather the evidence-based practice related to the surgical and anaesthetic procedure led by medical staff is the focus. When exploring the question "is evidence-based practice delivered?" participant responses indicated, a *respect for the medical body of knowledge that informed practice.* Exploring nursing knowledge and evidence-based practice required prompting, and resulted in a change from a positive response to the question is evidence-based practice delivered, to "well no, there are still some sacred cows in nursing"*H.*

The cross specialty boundary differences were an area of potential tension and frustration, with ward nurses having a clear body of nursing knowledge, and respecting medical knowledge, and OT nurses working within the medical appreciation of their own professional based evidence-based practice. Nursing issues that cross specialty boundaries were likely to experience a different appreciation and application, examples of which are stated previously.

4.7.3.4 Leadership styles.

Nursing leadership plays a significant role in how nursing is practised in any given situation. There are, however, contextual influences and other variables which have an impact. The implementation of evidence-based practice is variable, based on individual skill, individual motivation, workloads, time, and resources. However, "the **most significant influence is the leadership which determines the culture"D**, in which the nursing staff are practising. A leader who encourages and supports evidence-based practice, and "leads by example *with a 'can do' attitude"PG, can have positive results.* "Inclusion of all team members"D was also mentioned by participants as an important aspect of learning on the job and "appreciating the policy development and maintenance were in fact linked to the literature"PG. This embraces the concept of creativity as opposed to working by and within the rules, determined by a control structure and more dictatorial leadership approach. Different forms of leadership each have a place, and the case would benefit from further exploration. A balance, which would allow individual creativity and professional growth and development, with 'on the job' support when experience is lacking and clinical situations present uncertainty, would appear to provide a good working combination.

Inter professional relationships.

The relationship that featured as a recurring theme throughout the data collection was that between medical and nursing staff. There appeared to be a 'power dynamic' playing out as medical staff controlled the perioperative experience, with supporting comments made by the participants including "medical staff control things, it is hard to challenge them as they are the ones who bring the money into the organisation, giving them a huge power base"PG, and there was even a suggestion by participants that on occasions *"bad behaviour may we tolerated because of their financial contribution to the business"PG.* There was also the comment that "*medical staff are the ones who see the patients through the entire perioperative experience and are ultimately responsible for the patient care"PG.* Numerous participants commented that "*practice is defined by private doctors – we don't have any control".* Other comments included "*Surgeons may be a big barrier to evidence-based practice as they want to do things their way"PG.* It was acknowledged, however, that was difficult for many nurses to do. As one participant commented "*the*

status quo is often tolerated or accepted" and there is at times an element of, "*picking your fights"PG.*

The relationship between medical and nursing staff in the OT context was perceived by the participants to be more collaborative than with their public hospital nursing colleagues. There was a comment that their "*relationship was different, there is lots more dialogue and also more trust"PG.* Within the OT environment, consistency in the team players and continuity of experience was considered to enhance the medical nursing relationship. Interestingly the data has already identified that the OT nursing staff are less likely to embrace evidence-based nursing, but rather medical evidence was given much greater focus to inform practice, which may be entirely appropriate considering the context and procedures performed. However there is a place for evidence-based nursing within that context which appears to be given a much lesser priority.

The relationship between medical and nursing staff in the ward context was variable, with individuals and circumstances providing some unpredictability. The data however did indicate some interesting dynamics related to communication and relationships, with one participant "*feeling the need to communicate to the medical staff any changes to practice, including nursing lead initiatives. The results were invariably 'keep things as they are'"PG.* This generated frustration and concern especially if the existing practice was not supported by literature. Nursing staff were "*mindful of safety and could recruit senior support, however they were also concerned about the effect of persistent challenges of the medical staff on their inter-personnel relationship"PG.* There were perceived *issues related to the valuing of different bodies of knowledge"PG.* One other participant working with the same medical staff, considered nursing led initiatives did not need to be communicated to medical colleagues, nor their approval sought. There was an acceptance of change by the medical staff as long as it did not interfere with their input.

The clinical context can be a volatile one with unpredictability and variability associated with workloads, patient acuity, individual personalities, skill mix and competency to name a few. The human element can be challenging and entirely change any experience.

Organisational relationships

The case, from an organisation perspective was described unanimously *"as supportive of evidence-based practice"*, and this was evidenced by *"allocation of resources and commitment to postgraduate training"*. There were reports of work in progress to fund and access databases to support evidence-based practice in the workplace, and an established relationship with the tertiary health and education institution to gain library access for all staff.

Relationship issues, specifically power dynamics and inter-departmental difficulties were acknowledged and efforts made to support the interest of the patient and the organisation, however within a dynamic structure inevitably personnel issues would arise during the normal course of service delivery which would need to be addressed, and there was a demonstrated commitment to doing so.

4.7.4 Concept of nonlinearity

Complexity theory acknowledges the concept of nonlinearity. This may be difficult to detect, but it is key to understanding. The researcher looks for instances where small events lead to large outcomes and large events which lead to small outcomes. (Anderson et al., 2005).

The OT environment provided a fertile area to identify the concept of nonlinearity. There are many examples of significant 'big' changes to practice based on evidence, with advances in technology and skill development. The movement to laproscopic surgery is one such example: the change is well supported by the literature, its implementation embraced by the entire perioperative team and the benefits have been well documented. There are other examples related to both surgical and anaesthetic intervention.

Interestingly the implementation of sliding boards, for the movement of patients from ward beds to OT trolleys has been problematic. On the surface this appears a 'little thing' in terms of the overall OT experience, but it raises numerous issues. As a nursing initiative it is given a lesser priority, despite some robust research and experience to

support its implementation, and a nursing workforce committed to the change, a significant effort on the part of the nursing staff has had little impact.
It becomes a 'big thing' when considering its role in protecting both patients and staff from injury, giving it an ethical dimension, with occupational health and safety connotations. "*Some surgeons will have nothing to do with it*".
"*Generally there is an element of keeping the medical staff happy*"PG.
When this was explored further, with a focus on beneficence and non maleficence, some participants indicated the notion of "*'do no harm' over rides and we do it anyway*". This did not appear to be the case in this instance, despite the nursing staff being motivated to do so.

Implementation of sliding boards in other contexts, has had a positive impact, with little effort having a significant result and seamless introduction. Further research into staff and patient incident reporting of injury would be beneficial. The concept of non linearity in this situation may be related to a lack of respect for the source or credibility of the information which decisions are based, this however was not clear to the participants, rather there was a perception of "*they* (medical staff) *will do things their own way*"PG.

4.7.5 Patterns and phenomenon and trends.

Complexity theory explores patterns as well as the phenomenon.
There will be the identification of macro level regularities, but the researcher needs to take note of differing internal processes and patterns which may emerge. Specifically this may be relevant to relationships and ways in which they interact. (Anderson et al., 2005)

Although the case participants, and the entire organisation had a culture which encouraged evidence-based practice and postgraduate education, there were subcultures that provided some variation. To some extent this was dictated by specialty practice areas, with different types of procedures and patient acuity requiring medical input and rapid responses to changing clinical states.

The leadership was perceived to provide a significant influence in determining the culture, with one clinical area encouraging creativity and using an inclusive approach to clinical questions and advancing practice standards more than the other clinical area. This was

demonstrated in delegating literature searching to junior staff and putting support and supervision in place to interpret and implement best practice guidelines. Incorporating policy development and review within existing job descriptions and providing support to achieve that function. A culture of inquiry was encouraged and embraced despite areas of resistance. In contrast there was a more controlled environment in the other clinical area, with policies developed and reviewed by dedicated personnel and reported discouragement of individuals from pursuing clinical questions outside the existing structure.

Horizontal violence was either experienced or witnessed by some participants as some staff challenged existing practice or explored clinical questions in the face of existing policy statements. *"You are here to work not surf the net"PG*, was one discouraging statement, but another comment included *"you need to be more experienced before you question what we do"PG.* Undermining of staff qualifications and consequent contribution was probably the most damaging, individual creativity and contribution to evidence-based practice was squashed.

4.7.6 Organisational complexity.

The case had numerous challenges at any given time that influenced workloads, staffing and the delivery of care. For a private health provider, there are the effects of market forces and the need to attract patients and staff to deliver the core business. The mission statement "care without compromise" requires a balance of economic realities with quality of care. Professional bodies require medical and nursing staff to work within competency standards, and to meet Standards NZ audits criteria to achieve accreditation. As with all health providers the health and disability commission monitors activity.

Advances in technology and medical practice have revolutionised healthcare in recent times with significant improvements in procedures and patient outcomes. This requires keeping pace with developments, committing resources to support staff development and implementing change to incorporate advancing practice. Some specialty practice areas within the case are at the 'cutting edge' of practice generating the research, rather than following it. Patients present with increasing acuity and complexity, increasing their risk

of intervention and requiring greater medical and nursing input. There are times when clinical questions are challenging, and unpredictability and paradox are present.

To compare departments in terms of their approach to clinical practice is problematic, as specialty practice is substantially different in terms of type of work, patient acuity, vulnerability and exposure to risk, level of multidisciplinary team involvement and consequent priorities and a hierarchical approach to care. Organisational complexity is a key component when looking at the question of evidence-based practice and its implementation

The findings presented reflect the experiences and perceptions of the participants', who together with the researcher explored the research question to seek understanding of what evidence-based practice is, and how it is integrated in clinical decision making. The following chapter provides some discussion related to the findings, and makes links to literature to confirm the findings.

CHAPTER FIVE

Discussion

In this chapter, findings from the case study are discussed and related to issues raised in the literature review. The chapter is structured into the following sections to discuss those things that support individual preparation for evidence-based practice, and the complexity of the clinical area and factors that may influence the implementation of evidence-based practice. There are areas of overlap, where aspects of discussion are relevant to various topic headings.

Individual preparation for the implementation of evidence-based practice.

5.1 Understanding of evidence-based practice.

5.2 Education – factors that support and promote the implementation of evidence-based practice.

- 5.2.1 Reflective practice
- 5.2.2 Questioning practice
- 5.2.3 Research education
- 5.2.4 Information literacy
- 5.2.5 Translation of skills into practice

Complexity of the clinical area and factors that may influence the implementation of evidence-based practice.

5.3 Context and Culture

- 5.3.1 Culture of inquiry
- 5.3.2 Relationships
- 5.3.3 Infrastructure support

5.4 Leadership

5.5 Ethics

Many factors discussed in the participant interviews were consistent with what the literature reviewed describes, identifying that issues and barriers to the implementation of

evidence-based practice are experienced globally, and much can be learned from the international experience. However, owing to the multifaceted nature of the research question, which impacts on all aspects of practice, and the complexity of the environment in which it is studied, issues have arisen during the data collection which have required expansion of the literature review to confirm study findings. This has expanded into areas which had not been predicted, and there is a diversity which does not allow the expanded inquiry to fit logically into the structured literature review, hence there is some introduction of further literature during the following discussion.

Within the case study, the participants fell into three distinct groups.

- Those who do not know what they do not know regarding evidence-based practice;
- Those who have had some instruction on evidence-based practice, but are not practising it due to barriers or other workplace limitations, and finally
- Those who do practise evidence-based practice consistently.

There is some correlation between individuals' preparation for practice, however the main determinant in applying evidence-based practice is directly related to the individual who can demonstrate what is described by Fonteyn and Ritter (cited in Higgs & Jones, 2002) as an affective disposition to critical thinking and an inbuilt inquisitiveness and open mindedness. Such individuals have a resourcefulness and creativity that allow them to overcome barriers.

As I progress through this discussion chapter, consideration is given to supporting those nurses not skilled to deliver evidence-based practice to make the transition; but there also needs to be some acknowledgement of those who have made the transition, in order to recruit their support as 'evidence-based champions' to help colleagues to upskill and facilitate their understanding and delivery of evidence-based practice (Ellis et al., 2005).

5.1 Understanding of evidence-based practice

The data analysis indicated that a number of participants (40%), specifically the hospital trained nurses with no postgraduate education, had a narrow view of the interpretation of evidence-based practice, believing it is practice based on research. It is my perception, that some practitioners do not know what they do not know, and any discussion around evidence-based practice is limited and based on their own self-taught interpretation and

the professional expectation that it is being practiced as it is stated within the competency standards (NCNZ, 2007a). It is probably safe to assume that some nurses' pay lip service to the term evidence-based practice and believe it is being practiced, when they have a lack of detailed understanding of and familiarity with the term. This is supported by Pravikoff et al. (2005) who conducted research in the USA involving 1,097 participants; they found that fewer than half of their research participants were able to demonstrate awareness of what evidence-based practice was, despite its extensive discussion in the literature. "Misperceptions, a lack of awareness and knowledge deficit are seen as significant barriers against evidence-based practice" (Dobbs, 2006, p 10).

There are areas within the case study where a negative attitude towards a research culture prevails: this was reported by 50% of participants and demonstrated by a lack of organisational support for nurses to engage in evidence-based practice. Consequently individuals feel "pressured by peers to continue traditional practice" (Melnyk et al., cited in Dobbs 2006). In the perioperative setting, specifically intra-operative nursing, where patient risk is maximised owing to acute intervention, Osborne and Gardner (2004) contend that perioperative nurses are not engaging in research, to either provide evidence to support practice standards, or use research findings to inform clinical decision making necessary for contemporary perioperative practice.

NZ demographics (NCNZ, M. Adamson, email communication, 14 January, 2007) indicate that 67.9% of the nursing workforce is over 40 years. Of the 2007 nursing workforce, their qualifications on entry break down as follows:

- Hospital trained 42%
- Diploma graduates 28%
- Bachelor Degree 28%
- Associate Degree 2%
  (USA qualification)

Pravikoff et al.(2005) reported that the average age of nurses in the USA is 40 years, with 70% having graduated prior to 1990.

Despite some differences in data collection, there is indication of little difference between our New Zealand and USA workforces. The statistics prompt the question, whether

today's demands for professional practice, with a focus on evidence-based practice, are able to be met by those older nurses.

The case study demographics varied between specialty practice areas, with the ward areas reporting a younger workforce with a predominance of nursing with diploma and degree qualifications. The OT area reflected more closely the national demographics with an older nursing workforce.

Participant selection in this study was representative of the various backgrounds and preparation for practice, found within New Zealand and beyond, namely older hospital trained nurses, diploma graduates from polytechnics and a combination of both groups representing participants who had gone on to complete transition programs to Bachelor of Nursing or postgraduate qualifications at a university.

The hospital trained nurses (70% of the participants) indicated evidence-based practice was self taught and there were statements by those participants that they found it difficult to access appropriate training to support them in their understanding and application of evidence-based practice. This was related to the lack of availability of short courses, as well as limited library facilities and more specifically librarian access on site to support clinical decision making. Pravikoff et al. similarly found "that nurse perceived gaining access to evidence-based information as 'extremely difficult'...reporting that access to both libraries and electronic resources were frequently restricted" (2005, p3). With a large percentage of the nursing workforce within areas of the case study having trained prior to the incorporation of research–and evidence-based practice in the preparation for practice curriculum, priority must be given to efforts to support those staff to make the transition to meet their legal requirements as stated in the HPCA (2003). Pape states, "Experienced nurses in clinical settings must not be forgotten as potential supporters of evidence-based practice. These nurses should also receive innovative evidence-based practice education that will stimulate them towards improved practice" (2003, p161).

For those participants who have received formal instruction about evidence-based practice, there were indications that it was mainly theoretical, and they had difficulties translating it into any form of practical application. Despite education having been university-based for some years, and research methodology being a requirement of nursing authorities, there

are those who continue to question curricula and the extent to which evidence-based culture is embedded (Courtney, 2005).

In the New Zealand context, research methods became an integral part of nursing training with the introduction of the diploma qualification in the 1970's, prior to the development and introduction of evidence-based practice in the 1980's to increase the usability of research information. Most participants' preparation for practice pre-dates this education development to support practice.

5.2 Education – factors that support and promote the implement evidence-based practice.

The participants in the study reported an organisational culture that supported professional development and postgraduate education, with an ongoing commitment to resourcing staff to pursue academic qualifications. There were departmental variations in how this resource was utilised, and differences in the individual nurse managers' interpretation as to what was considered 'best value', when allocating resources and approving study leave. Some argued their support for postgraduate studies, with the view that academic preparation is considered to enhance nurse patient relationships, and help nurses understand their practice by providing them with knowledge (Ferrari, 2006). Others favoured attending conferences to achieve currency of information. These patterns reflect similar findings in the literature.

Lannon (2007) contends that for nursing as a profession to progress, life long learning is required. However, the responsibility to determine and meet those needs is up to the individual nurse (Dobbs, 2006). Within the case study, participants report clinical areas well supported by staff that had successfully completed postgraduate qualifications. This to some extent reflected the nursing demographics, specifically younger nurses in the different specialty areas. There were also strong cultural influences, with individuals being encouraged to progress and achieve. Regardless of the organisational support and cultural variations, individual motivation is a key component, and there are areas of the organisation where participants report staff being satisfied with their preparation for practice qualification and either do not have the time, energy or motivation to progress to postgraduate studies. Pearson et al. suggest "that it is not uncommon for nurses to only

participate in continuing education when they are compelled to do so...suggestive of a lack of commitment to altruistic service and indicative of nurses viewing nursing as a 'job' rather than a profession" (2006, p224). This provides a significant challenge for nursing and the case study to implement evidence-based practice across all specialty practice settings, as the workforce is in transition from hospital based trained personnel to Bachelor of Nursing graduates, with the later being in the minority. Providing education which meets the needs of services, patients and individual nurses needs to be considered, accessible and delivered.

Education programs to help older participants in this study to make the transition from traditional ways of knowing and practice development, as taught prior to the 1970's, need to be addressed, if evidence-based practice is going to be incorporated in professional practice. Programs to support the experienced practitioner to make the transition to Bachelor of Nursing, programs were introduced in the 1980's, however participants of this study indicated that the program content did not fully prepare them for the realities of the clinical practice setting: rather there was a perception of the academic pursuits and the practice setting being quite separate.

Education program contents are never going to be able to cover all there is to know, but should incorporate critical reflection practices to support an increased self awareness, and provide a learning tool for future management in similar situations. Ferrari (2006) contends that reflection bridges the theory/practice gap, and provides a starting point for the process of evidence-based practice. There are many components to evidence-based practice that beg some focus within an educational program to support practitioners develop the skills to implement evidence-based practice in their delivery of healthcare. They include critical reflection, questioning practice, education about research methods and approaches, information literacy, and ways of translating all of those skills into their practice activities.

5.2.1 Reflective practice

Reflective practice is discussed extensively in the literature and described as a desirable quality in a nurse (Schultz, 2007). Although reflective practice is embraced by some, there is a large group of nurses trained prior to its introduction in the 1980's who resist it.

Participants of this study stated that one of the characteristics of an 'expert' was that they were reflective practitioners, able to understand and advance practice, but there was a perception that for those nurses trained pre 1980, discussion about reflective practice was unenthusiastically received (Chang & Daly, 2006). The reasons given for this lack of enthusiasm include, "generally speaking, these practices are poorly taught and supported" and "nurses genuinely believe they are already reflective practitioners," with some inconsistencies between what the nurses understand reflective practice to be and how they apply it, and what the literature defines as reflective practice (ibid, 2006, p264). To maximise the potential learning benefits to inform future practice, there needs to be some shift in practice towards what the literature describes as reflective practice. Participant responses in this study would support this, as there was a perception that their understanding was superficial and the depth of their appreciation of the reflective exercise denied the 'critical analysis' necessary to progress learning.

Valente (2003) contend that the busy workloads in the clinical practice setting may deny nurses time to reflect on practice, and consequently, or as well they may be unaware of variations in practice. Participants reporting their OT environment experience would agree with the perspective of busy workloads, and actually noted a lack of time during their every day practice to do anything other than survive and complete the task at hand. If there is reluctance or failure to identify and reflect on gaps in practice, the integration of research findings into clinical practice is unlikely, and the potential for habitual ritualistic practice will prevail, based on the assumption that current practice is appropriate. Mezirow (cited in Riddell, 2007) considered assumptions to be "products of unreflective personal or cultural assimilation". Riddell (2007) goes on to discuss the effects of assumptions as being the distortion and limitation of the view of reality, and failure to differentiate and be open to other alternatives. It is important to be aware of assumptions and recognise the influences that developed any practice knowledge and skill, whether that be culture or experience or both. The challenge is learning to compensate for the limitations. The OT nurse participants indicated there was evidence of habitual practice in their clinical setting, giving the example of there being no evidence to support the wearing of face masks, historically and anecdotally used to reduce surgical site infections and also to provide staff protection, neither of which have been supported by research (Ward, 2000).

Reflective practice is a process of challenging how things are done. It invites critical analysis and questioning, supporting the exploration for best practice. Doane and Varcoe (2005) contend that questioning will lead to further learning, ongoing development, change and the refining of knowledge and practice. Schutz (2007) contends that practitioners develop reflective skills in the context of professional development and most will need some skilled help in developing the ability to use reflection purposefully. For those older nurses trained in the hospital preparation for practice program, participants of the study indicated reflective practice was a challenge, specifically related to the skills required, the process and having adequate time to do it. Commitment by the individual nurses and the organisation needs to be considered, in the light of the potential benefits of allocating time and resources to establish the skills and implement the practice within the clinical context.

5.2.2 Questioning practice

The case study revealed that 50 % of the participants did not access research articles or found them confusing. Of the other 50%, 30% claimed to access databases only during policy review time, which was scheduled every one - two years. It is likely that questioning is happening, however answers are accessed from sources other than literature and research. Melnyk et al. (2002) acknowledges "there are times when scientific studies will not be available to answer burning clinical questions...clinicians must then turn to expert anecdotal evidence to guide their decision making". There is also acknowledgement that evidence-based practice does incorporate the expertise of the clinician and patient preference. The case study participants, however, indicate that accessing literature and scientific research evidence is not the first line of inquiry. They also identified gaps in the literature when their efforts to access material had not been fruitful. One could question a lack of information literacy skills as opposed to lack of information, but further research would have to be conducted to make that differentiation.

An underlying assumption of evidence-based practice is "that there are things we need to know in order to conduct our practice professionally" (Courtney, 2005, p75). The complexity of health care means that there are gaps in what knowledge is available to us, and the mechanisms in place to expose the gaps are systematic reviews, structured to provide direction to the questions for which answers are required (Courtney, 2005).

Case study participants indicated that in some clinical situations answers to clinical questions were needed in real time, and challenged the process which takes considerable time to arrive at a question rather than answer. It is not surprising that expert opinion and anecdotal evidence are sourced as a first option, anything else would be inappropriate in some contexts. Dobbs (2006) contends that there needs to be a commitment to providing optimal patient care, and nurses need to continually question and validate their practice. Individual contribution needs to be matched with organisational commitment with collaboration between parties to achieve widespread results. The significant determinant of research utilisation is, however, the urgency dictated by the patient's clinical presentation, and the speed with which research evidence can be sourced and translated into meaningful information that can inform practice.

5.2.3 Research education

Participants preparation for practice and the utilisation of research in their practice setting did not entirely correlate, rather there was a reliance on multiple factors which all needed to come together to make the implementation of evidence-based practice a reality, indicating that a theoretical understanding of evidence-based practice did not on its own secure its implementation. One of the participants with no postgraduate education was able to discuss the concept of evidence-based practice in some depth and her information literacy abilities and contribution to organisation policy guidelines indicated considerable skill development, and contribution to patient care and development of practice standards. When this was explored, the participant's response indicated it was all about developing 'critical thinking' and constantly questioning practice and following through to some satisfactory answer. Fonteyn & Ritter (cited in Higgs & Jones, 2002) supports this, contending that critical thinking is a requirement of professional nurses working in a context of intrinsic ambiguity, at times the inadequacy of information to inform practice and potentially having to make choices between conflicting approaches to care.
The participant with a high level of critical thinking was, however, a single voice with the other participants expressing comments such as 'we are clinicians not researchers'. There was a perception from participants that their preparation for practice and subsequent postgraduate pursuits had only partly informed their understanding of evidence-based practice and there were significant gaps in supporting the translation of research into

practice to support clinical problem solving. (American Association of Colleges for Nursing, 2003).

Participants indicated the need for more education on research, specifically related to the utilisation of research findings in their practice. There were comments which indicated that accessing research reports was the first hurdle, then the presentation of the research was not always user friendly, and its relevance not obvious. Generally participants felt poorly prepared to utilise research in their day to day practice; this pattern is supported by numerous authors in the literature reviewed (Veeramah, 2004). Although the participants of the study expressed a need for more education related to research and its utilisation in practice, there was also a plea for greater accessibility and availability of research reports which are short and user friendly, with clear and understandable research summaries with implications for their clinical practice setting (Sims et al., 2004). There was an added claim that, "there is often little evidence to back or refute certain practices" (Ward, 2000, p1). The reality of having the required information accessible in real time can be challenging. Complexity theory would suggest that research summaries deny the complexity of the individual patient experience, however in the absence of the information literacy skills required to source 'best practice' guideline, this was considered an appealing alternative.

Developing a synergistic relationship between education institutions and tutorial staff, and the clinical practice area and practitioners is a goal of the organisation. Participants report significant gains and an increased awareness about evidence-based practice and its implementation, since the organisation's support of nurses participation in postgraduate education and their advisory committees. This allows them to monitor and ensure the program includes skills and knowledge that are appropriate to their current context, including evidence-based practice and research utilisation in the clinical practice setting. There are, however, some contextual factors that have impacted on the nurses' abilities to practise optimally. There would also be some benefit in developing a relationship between researchers and practitioners to allow research to inform practice and practice to inform theoretical gains. Within the case, there is potential for this to be developed, as there are areas which are at the 'cutting edge' in terms of developing procedures for specific specialty practice interventions. There is already an established medical research culture

which could include nurses, and the potential for exploring research questions with an inter-disciplinary research team is exciting.

5.2.4 Information literacy

As Scollin (2001) states, "technology is readily available to (help nurses) make use of resources; however, if those who can benefit most from the technology...do not have the training, support, or access to make full use of these resources, then the benefit to enhance their knowledge is of little value".

The case study data is consistent with the literature, with practitioners working at the bedside relying on more senior staff sourcing the literature and research findings and integrating them into practice guidelines. 50% of the participants either do not read research, or find it confusing. Also different research findings, provide conflicting results and directions. The majority of participants across the various departments indicated that they did not think of accessing databases during their working day. There is a reliance on senior staff to have all the information literacy skills including sourcing the evidence, reading and critically appraising it, making a judgement, interpreting the findings and its application into practice guidelines (Valente,2003). Among those participants, who do source the literature themselves to inform practice guidelines, the frequency of the activity ranged from daily to every one - two years when policy reviews are required. There was acknowledgement that searching the literature was motivated by changing practice and professional and personal interest. Concern arises when the participants of the study indicate that reflection on practice may not be maximised owing to time constraints, or the lack of skill development, resulting in issues around identifying problems, and going through the process to establish what information is needed to solve clinical questions. There are also potential concerns, as awareness of variations in practice may not be identified (Barnard et al., 2005), consequently the identification of clinical problems and the need for research is not realised and potentially best practice is denied.

Online resources within the case organisation are less than adequate, although the organisation is exploring the most appropriate database to purchase for online onsite support for clinical decision making. This goes only part way to achieving support for practitioners in their clinical practice: information literacy skills need to be developed and

supported with education. Pravikoff et al. (2005) contend that practitioners must be able to assess their own information-retrieval and evaluation skills and recognise the gaps, and access continuing education that will enhance information literacy skills. I would suggest that, within the case study, the capability of the individual nurses to the level described above is variable, with some well placed to evaluate their skills and source appropriate education to meet their needs. However this is not consistent, requiring a commitment by the individual and organisation to resourcing the upskilling and training to utilise information resources effectively to improve patient care.

There is a reliance on all of the above factors being in place, with emphasis on the individual nurse critically reflecting, education opportunities being readily available, organisational commitment to resourcing high quality information, and leadership to facilitate the implementation. Weakness in any of those factors will likely slow the process of implementing evidence-based practice. Within the case study there are departments that are better placed to deliver evidence-based practice and others that are lacking some of the components necessary to make that transition. An organisational objective, to deliver evidence-based practice across all practice areas, requires an evaluation of the areas that need support to identify the missing links, and critically reflect on those things that contributed to the success of evidence-based practice implementation and replicate it organisation wide.

Some participants of the study indicated being overwhelmed by the volume of material available over the internet, and expressed concern about the time required and their ability to differentiate 'good' research and 'bad' research, or perhaps more accurately to identify the research relevance to their practice. The literature supports the concern regarding the volume of literature, with reports from Verhey (cited in Barnard et al, 2005) of the amount and complexity of information available and relevant to nurses increasing exponentially, and estimated to double every five years. Underuse of nursing literature is well documented , indicating time constraints, knowledge and skill deficits, and cultural influences and the degree of emphasis placed on utilisation of research in the clinical practice setting (ibid, 2005). This is consistent in part with some areas of the case study, but there are some individuals who rise above that to demonstrate the skills to achieve evidence based practice, some of whom are able to utilise their skills in their practice and others thwarted by organisation imposed limitations.

5.2.5 Translation of evidence into practice

The case study participants' perception of whether evidence-based practice is delivered was directly related to their organisation policy guidelines, and their assumption that policy statements were indeed linked to the research evidence. When challenged, some were confident that research evidence was integrated but others were not, but were comfortable following the guidelines, which were endorsed by their organisation. There is a perception that evidence-based practice is delivered in a limited way within the case study, and this was supported by Ciliska (2005) during her Joanna Briggs Oration when she stated that "in most institutions, there is still a considerable gap between research evidence and what happens in practice". Her review of literature reported on 18 studies, revealing that 6 of 8 studies found improvements in patient outcomes, and 3 of 5 identified process of care improvements, when guidelines informed practice rather than routine care. Diagnostic uncertainty is relatively common and complexity a feature of clinical practice (Plsek & Greenhalgh, 2001). Although policy guidelines are a feature of healthcare delivery and certainly well established within the case study, Plsek and Greenhalgh contend that there are "few situations in modern healthcare....which have such a high degree of certainty and agreement, and rigid protocols are often rightly abandoned" (2001, p7). Reliance on having the solution within practice guidelines for every presenting clinical scenario is unrealistic, and according to Coutney there are "substantial gaps in the knowledge available to us" (2005, p75). Sacket et al suggests that most patient encounters require new information about some aspect of their care and "asking answerable questions is not as easy as it sounds, but it is a skill that can be taught" (cited in Courtney, 2005, p76). It involves the extensive range of skill development discussed earlier.

Vaughan (cited in McAllister & Osborne, 2006) states "We all know it is relatively easy to be presented with information about best practice, based on current knowledge, but far more difficult to make things happen which will change the care we offer" (2003, p315). The translation of evidence-based practice into the clinical context has proved challenging for some areas of the case study.

The discussion about translation of evidence-based practice into clinical practice fits more appropriately into the contextual discussion following. There are many contextual and cultural influences that either facilitate or provide barriers to its implementation.

Complexity of the clinical area and factors that may influence the delivery of evidence-based practice.

5.3 The culture of context

The culture of the organisation as a whole is described by the participants as positive and progressive, with direction and aims consistent with providing care which is evidence-based, delivered consistently across all boundaries of specialty practice. Within the organisational culture, inquiry identified inconsistencies in the various departments, detracting from the overall aim. There were also inconsistencies within the culture of nursing, with positive and negative attitudes having some impact. According to Plsek & Greenhalgh (2001) complexity theory would say that any formal attempt to improve existing health care can be aided or thwarted by informal 'shadow systems'. This is explained as each health professional within their own context is nested in other systems and contexts, all interacting and evolving together, and it is impossible to understand anything without reference to the entire system. This makes organising any form of discussion difficult and contradicts allocating subject headings. However, in order for me to make sense of the data and provide some clarity of thought, I have done precisely that, acknowledging there are areas of over-lap, and in valuing all the data, have tried to find its most appropriate home for discussion within the subject headings.

5.3.1. Culture of inquiry

Within the case study there are departmental differences which include a culture of inquiry with some limitations within the wards, and the contrasting OT culture of control where policies and procedure are prescriptive and the basis for practice. The analysis of existing policies and procedures to clarify inclusion of current research would be a valuable exercise. Observation of practice to clarify its consistency with the policy statements also needs to be considered. It may be argued that evidence-based practice is indeed practised however, I would argue that it is limited in its application and does not allow for the

complexity of healthcare, where unpredictability and paradox are ever present (Plsek & Greenhalgh, 2001). The complexity of patients' presenting problems requires looking beyond policy statements, which deal only with the predictable clinical scenario and do not accommodate flexibility when confronted with the many variables patients bring to their peri-operative experience, and the unpredictability of their response to the interventions they may be exposed to.

In exploring the culture of inquiry within the case, the characteristics of individual nurses' indicate professional maturity, confidence and competence, and when combined with personal and professional commitment to improving practice will advance practice standards. Doane and Varcoe write about relational inquiry and have informed my discussion around the implementation of a culture of inquiry in the clinical context. They invite practitioners to "take a stance of inquiry to knowledge development and to nursing practice" (2005, p262). They consider placing what the practitioner knows to the background, and bringing to the foreground what the practitioner does not know and becoming an inquirer. Doane and Varcoe (2005) contend that the practitioner is then better able to see beyond what is already known, and simultaneously use existing knowledge as a basis from which to evaluate current knowledge and practice, and develop and incorporate new knowledge. A stance of inquiry is a dynamic process and places the practitioner to a position of 'unknowing', open to having existing knowledge critically analysed and questioned. This will lead to further learning, ongoing development, change and the refining of knowledge and practice (ibid, 2005). Even the most senior nurses within the case with extensive experience and expertise might, at times, find this challenging. However with organisational support and leadership, such a culture is demonstrated within the case. For nurses less experienced it is something for them to work towards.

5.3.2. Relationships

The relationships between nurses and medical staff were raised by all of the participants as a potential barrier to the implementation of evidence-based practice. This is supported in the literature, with Valente (2003) stating that nurses' "lack of autonomy and unequal relationship to physicians and other health professionals" constitutes a significant barrier to the use of research findings in clinical practice. Sams et al. (2004) identified lack of

collaboration and medical staff buy-in increased the nurses' burden in attempting to implement evidence-based nursing practice. They go on to say patient management requires a multi-disciplinary approach, and medical disinterest is a significant barrier. With a lack of medical staff buy-in and junior nurses' unwillingness to challenge or confront the medical staff, there were significant limitations in providing best practice to the patient.

Nurse /Medical staff relationships were a significant issue and further literature was explored to confirm the data findings. Sirota reports on a survey on nurse/physician relationships. "68% of 1,100 nurse respondents, doubted that physicians understood nursing" (2007, p52). There are various quotes from this survey that I will share, as they are relevant to the case study and reflect participants' responses.

> Nurses report that negative behaviour (identified as rude, unpleasant, dismissive, belittling or intimidating), appear to be related to gender issues, power gaps, hierarchical traditions, or an attitude that nurses are their handmaidens, rather than valued professional collaborators (ibid, 2007, p53).

The case study highlights another issue related to medical staff being the revenue generators for the organisation, adding another dimension and contributing to the power dynamic.

> Nurses report that physicians may take them for granted, don't know or understand what nurses actually do, don't listen to what nurses have to say about patients, don't take nurses' assessments seriously, and fail to incorporate nurses' assessments into care plans... (ibid, 2007, p53).

Communication and collaboration are an integral feature of an efficient synergistic team, deficiencies can contribute to misunderstandings, errors and ongoing conflict. Despite this, there are still incidents of nurses preserving the traditional view of physician superiority, demonstrated by the need to defer to the physician (ibid, 2007). There are examples of this within the case study, with senior nurses feeling the need to communicate any change in nursing practice to the medical staff, which invariably resulted in a negative response. Dobbs (2006) contends that some nurses are reluctant to change existing procedures owing to a perceived lack of authority. The experience of other nurses, who had the confidence to assume professional autonomy and implement nursing changes without consultation, were frequently received positively by their medical colleagues.

The Nurse/Physician relationship survey was a comparison of the same survey conducted in 1991, and the question of whether there had been some improvement in nurse/physician relationships within a ward context was inconclusive. However, Sirota (2007) reports improvement in some contexts, identifying the OT area, where teamwork is crucial. This is consistent with the case study, where there were participant reports of more discussion, inclusion in decision making, workloads and other practice issues, between medical and nursing staff. It does not however, correlate to the generation or integration of research evidence in nursing activity within the OT environment of the case. There is discussion in the literature by the professional organisation, Australian College of Operating Room Nurses (ACORN) of perioperative nurses lagging behind other specialty nursing practice areas stating, "perioperative nurses are not engaging in developing and publishing the evidential basis considered necessary for contemporary perioperative practice" (Osborne and Gardner, 2004, p18). There was a perceived respect by the participants for the medical body of knowledge, and awareness of medical evidence-based practice, and OT nurses contributed to its implementation. This was not reciprocated, with medical staff being dismissive of nursing literature and nurse led research. Courtney contends that "while evidence-based practice was initially limited to the practice of medicine, it became clear that unless all the members of the health team embraced evidence-based practice it would have limited impact" (2005, p7). The nurse/medical staff relationship in the OT of the case is a complex one and begs further exploration.

- Is there an improved relationship in this context, because the nurses respect medical evidence and authority without challenging or changing the status quo by attempting to integrate changes to their nursing contributions?
- Is it a mutual respect acquired from constant team work and the development of a working synergy, with a dependence on each other?
- Or is it the nature of the work they are involved in with acute interventions, potential destabilising of the patients' physical condition and dealing with increased patient acuity needing advanced practice skills?

Nurse/Nurse relationships are equally complex with issues of power dynamics influencing individuals' ability to practice evidence-based practice. Junior nursing staff, coming to the practice area of the case with a Bachelor of Nursing degree and some formal preparation to practice evidence-based practice, are socialised into a culture by nursing staff having

had no such formal instruction. There is the potential for senior nurses without information literacy skills not valuing research in the practice setting. This is supported by Pravikoff et al. (2005) who found that the most frequently stated barrier to the implementation of evidence-based practice was a lack of value for research in practice.

New graduates within the case have experienced stress and anxiety with the volume of new information when developing clinical skills, learning appropriate behaviours and understand the norms and values associated with the clinical area and organisation within which they work (Newton & McKenna, 2007). In the unique culture and working environment of the OT where nursing is carried out on a stage, in front of a scrutinising audience of doctors, technicians and experienced nurses, junior nurses are likely to perform to the team expectations without challenging them, in their effort to 'fit in' (Graling, 2004). Attempts to question standards of practice and process issues within the case study have been met with horizontal violence, with reports of nurses having their university qualification under-mined and subsequent feelings of vulnerability, and lacking in confidence. There is the potential for junior staff to follow their senior colleagues lead, and focus on workplace orientation at the expense of developing their skills related to evidence-based practice. This form of socialisation reinforces that research belongs in the education/ academic world, and there is a failure to incorporate it in their clinical experience.

Inter-departmental nurse relationships are also a potential area of interest within the case, with ward nurses and OT nurses working in different contexts. Although there are similarities, there are also significant differences related to their scope of practice and specialty practice expectations, patient acuity, team contribution, and function. Inter-departmental and intra-professional dynamics present another variable, with team loyalties given priority over professional loyalties, should conflict present. Plsek and Greenhalgh (2001) contend that complex systems typically have fuzzy boundaries. Relationships' can change, and nurses' can simultaneously be members of several systems, complicating problems solving, and response to change unpredictable or unexpected. Participants indicated some tensions between departments when practice issues were not consistent, indicating a need for an organisational focus and a more global appreciation of the 'team', one example highlighting cross boundary difference given, related to intravenous access site and line management. Plsek and Greenhalgh (2001) suggest that rules or policies need

not be shared, explicit or even logical when considered by different nurses from different specialty foci. They go on to say that as personnel from the various specialty practice areas interact, tension and paradox can never be fully resolved. However, a complex system can adapt its behaviour over time. In the context of providing evidence-based practice, "there is an insoluble paradox between the need for consistent and evidence-based standards of care and the unique predicament, context, priorities, and choices of the individual patient" (ibid, 2001, p4).

Complexity theory acknowledges that, in any team, personnel behaviour may not be predictable, and when actions are interconnected, there can be significant contextual changes providing a dynamic component to the work environment (ibid, 2001).
How individual relationships work became a function of leadership, with some influenced by power and control and others partnership collaboration and an enhanced creativity.

5.3.3. Infrastructure support

The case study participants all acknowledge that the organisation as a whole demonstrates its support for evidence-based practice, in its commitment to resourcing the technology. Sims et al. (2004) discuss accessibility of research at the point of care is essential, and access to evidence synthesis in real time another consideration. The process of information literacy is a daunting one for a large percentage of the nursing workforce, and that is certainly true of the case study nurses and study participants. Valente suggests that "nurses want short, reader-friendly research reports designed for implementation in a busy, acute, and short staffed area...." , she goes on to state "they (nurses) want clear and understandable research summaries with clear implication for practice" (2004, p2). Participants and nurses of the case would echo the above 'want list'. With the added claim that, "there is often little evidence to back or refute certain practices" (Ward, 2000, p1). The reality of having the required information accessible in real time can be challenging. Sams et al. (2004) contend that technology needs to be viewed as a capital investment and compete with other care needs. Access to the internet in the clinical practice area of the case is a reality, and although database availability is lacking, there is a process in place to purchase that level of support.

Regardless of the organisational commitment to the resourcing of technology to support the delivery of evidence-based practice, there needs to be global support. Sackett et al discusses the rapid spread of the evidence-based practice movement as a response to:

- The lack of research-based information to support clinical decision making,
- The lack of research-based guidelines to use in clinical practice,
- The overwhelming volume and variability of new journal information and
- The inadequacy of traditional sources of information (eg textbooks out of date) (as cited in Coutrney, 2005, p6).

Major structures for promoting evidence-based practice emerged, one of which is the Joanna Briggs Institute, established in 1996 to "bring together a range of practice-orientated research activities to increase effectiveness of healthcare and improvement of health care outcomes" (Coutrney, 2005, p13). There has been considerable growth in the Joanna Briggs Institute since its establishment, and it is now a dynamic international collaboration involving 25 countries with over 400 researchers. Despite the availability of this research resource of systematic reviews, less than half the participants of the case were aware of its existence or work, while others acknowledged that the body of research knowledge was growing, however, there was still some way to go to achieve easy access of information for timely decision making.

5.4 Leadership

There was acknowledgement among case study participants that leadership in the local contexts played a significant role in the implementation of evidence-based practice and a culture of inquiry, with appreciation of collaboration and the inclusive (nursing) nature of the process in sourcing evidence. This is only part of the requirement to successfully implement evidence-based practice as Sams et al. (2004) recommend, to bridge the theory practice gap and provide quality care, working in teams, especially interdisciplinary teams allows for a collaborative approach utilising each group's respective strengths.

In the present healthcare environment, where continuous service improvement and quality mechanisms are expected to be in place, with emphasis on the delivery of care which is evidence-based, it would be a realistic expectation that significant gains would have been made in this area. Fitzsimons et al contend however that "only a minority of organisations

had an up-to-date corporate strategy that included nursing and midwifery research and development" (2006, p748).

Committed leadership with a vision for the future, and a determination to manage significant internal change is required to successfully achieve and maintain evidence-based practice in the clinical practice setting (Sams et al., 2004). They go on to say, nurse leaders working towards the strategic integration of evidence-based practice, must be prepared to:

- Establish a new culture based on the use of evidence
- Create the capacity for organisational change
- Sustain that shift through revisions in the service infrastructure. (2004, p407).

Bernik suggests "passion is probably the single prerequisite to cultural change, for those inclined to attempt it. If you are not passionate about it, don't even bother" (2001, p61). The case study participants all confirmed the organisational support, driven by the nursing leadership within departments, for the delivery of evidence-based practice. They had committed multiple resources to the integration of research in practice guidelines Fitzsimons et al. states "there is... international evidence of progress in this arena, but many sources emphasise that further efforts are required to realise our potential" (2006, p749).

Despite significant gains within the case study to the implementation of evidence-based practice, in view of the literature reviewed there needs to be more emphasis to advance it further, and leadership can provide a powerful driver. Fitzsimons et al. (2006) suggest the establishment of a strategic climate, with a central focus of research and development. They go on to share their research findings which "confirmed progress, but also reinforced the need to develop clear vision, enhance leadership potential and forge effective partnerships to advance the research and development agenda". With the view that leadership is a feature of professional practice, and acknowledging the complexity of the environment nurses work, Perra contends that 'integrated leaders enthusiastically embrace the concept of change, risk taking, and flexibility: they foster a like attitude in their followers" (2001, p71). She goes on to explain the importance of developing leadership skills in all staff, and provides some characteristics needed to thrive on the challenge of change. They include respectful trusting relationships, integrity, learning to achieve staff

participation, communication, and ability to clarify values and bring the vision to life. "Leaders must be secure enough in their own worth to risk giving up power....to share power....and create a safe environment for employees to test their skills" (ibid, 2001,p70).

Fyffe and Hanley (2002) recommend establishing current capacity, strengths and weaknesses, when developing future strategies, so that areas can build incrementally on what has been achieved to date. The case study is in a good position with some areas of limited success and positive culture towards evidence-based practice and others able to benefit from them. The key areas for development described by Fitzsimons et al. (2006) include vision, leadership and partnership, and their insights follow;

- A clear articulated vision to progress research utilisation in clinical practice, which reflects the needs of the patient and core business of the organisation, and is supported by stakeholders at all levels, needs to be established and communicated within the case.
- Effective leadership to "provide the vehicle to translate vision into operational goals that can, in turn, be used to implement action plans and evaluate progress. This ...requires leaders to think strategically both within their own remits and in the broader context" (ibid, 2006, p749). Organisational support within the case to identify and further develop leadership within their existing staff, plus recruiting leadership potential will enhance the process further. Making strategic involvement more explicit within leadership roles, will also work towards making cross boundary processes more clear and consistent.
- Effective partnerships too achieve successful outcomes. True interdisciplinary research to produce mutually beneficial research outcomes can provide a valued and effective contribution at all stages of the patients experience. Local, national and international partnerships can produce significant gains. This is realistic within the case study, where some specialty practices and practitioners are at the 'cutting edge' developing techniques and procedures, providing a unique opportunity to contribute to the body of knowledge. The case has much to offer in documenting those practices which are exploring new techniques and procedures. Mechanisms need to be put in place to take some leadership and share their specific contributions to the body of knowledge.

The leadership approach in the various specialty practice areas of the case study follows different paradigms. Traditional methods of controlling the process or overcoming resistance have resulted in a frustratingly slow uptake and spread of evidence-based practice in the healthcare environment (Plsek & Wilson, 2001). The case study would support this, and highlights the potential for a 'patchy' appreciation of research and its implementation in practice, which has the potential to create tension and even conflict.

Complexity based organisational thinking focuses on the organisation as a whole and suggests that goals and resources are established collectively. Plsek and Wilson (2001). "Complexity thinking suggests that relationships between parts (individuals and department's) are more important than the parts themselves, that minimum specifications yield more creativity than detailed plans" (ibid, 2001, p1), producing what is described as a generative relationship. Practice guidelines are potentially detrimental as they fail to accommodate the inevitable unpredictability of the patient experience, and fail to take advantage of the natural creativity of staff. Creative progress with generative relationships working across the boundaries of the organisation as a whole would seem to embrace the concept of partnership and collaboration, and allow the emergence of innovative, complex behaviours to achieve significant gains in patient outcomes. Whole system aims encourage generative relationships, and some consistency in practice standards. Individual departments focusing on their own practice setting, without the bigger organisational participation and support, may result in the attention to the overall aim of better patient care being lost (ibid, 2001).

"Leaders at all levels need to develop a more sophisticated view of the role of variation in complex systems. This can be accomplished by exploring with others the degree of certainty and agreement around both the 'what' and 'how' of a given issue, along with an understanding that innovation requires occasional variation even when all seems certain and agreed" (ibid, 2001). Departmental differences and variations are a reality within the case study, according to complexity thinking variations are natural and innovation can provide a positive vehicle to achieving best practice within various contexts.

Clancy (2003) discussed the virtue of courage as it pertains to leaders. Ethical dilemmas are a feature of nursing and present themselves regularly in day to day practice. Clancy considers "moral courage" to be a "willingness to risk shame and social disapproval for

doing one's duty. It requires making a stand, often alone and in isolation"(2003, p129). There is a requirement for ongoing reflection of values and morals in the ordinariness of clinical practice, and the development of a deep sense of conviction to be an ethically fit leader (ibid, 2003).

The case highlights variations in leadership approaches, with some traditional command and control and others more collaborative and inclusive. There are also differences in individual's sense of "self worth", specifically related to valuing their own professional nursing body of knowledge as opposed to their medical colleagues. There are also examples of situations of knowing what is right according to the research, and being unable to advance evidence-based practice due to the barriers within the organisation. Central, to this is described by Perra as having the integrity, which is the moral compass that enables leaders to act on their beliefs....giving them the willingness to look critically at their practice and that of their staff and enabling them to identify opportunities for improvement and to facilitate changes" (2001, p72).

5.5 Ethics

Ethical inquiry is one aspect of nurses' responsibility for others, and doing what is right. Relating this to patient care challenges what is good practice. According to Doane and Varcoe traditionally dominated nursing models for ethical decision making have been inadequate and they suggest an "emphasis on the everydayness of morality (e.g., that every minute of nursing practice involves ethics) and an understanding of ethics as a deeply personal process that is lived in the complexity and ambiguity of everyday nursing work" (2005, p283).

It is difficult to give a 'yes' or 'no' answer to the question of whether evidence-based practice is delivered, from the case study data. The data analysis indicates that the delivery of evidence-based care is based on the integration of evidence in the policy guidelines. Presuming the policy guidelines are followed and incorporate research evidence, I would argue the complexity and ambiguity of any given unique situation might be overlooked. Clinical decision making and the integration of evidence-based practice in that process is therefore problematic within the case study, as either the evidence is not sourced to inform the clinical decision, or if it is, it might not be integrated.

Pearson et al. suggest 'that because nursing actions are frequently dependent on the judgement of doctors and because the majority of nurses practise within a bureaucratic hierarchy, relative autonomy is low" (2006, p225). The question asked of participants, were they aware of any examples of patient care or staff safety being compromised, owing to the failure to deliver what their interpretation of what the research indicated to be best practice, received affirmative answers. There were various examples of this, but the most concerning was the administration of cytotoxic drugs, and their handling outside a lamina flow unit, yet such a unit is considered essential for personnel protection. With only few staff members involved directly, efforts to bring practice in line with best practice guidelines were thwarted by their medical colleagues. The reason given for this decision was that the increased cost which would have to be absorbed by the patient. Considering the Health and Disability requirements and Occupational Health and Safety guidelines, this constitutes a breach of ethically appropriate behaviour, and with the weight of both those departments individually and collectively supporting corrective action, current practice was allowed to continue. There was management awareness of this practice however, and it was being dealt with.

According to the nurse/physician survey reported by Sirota "many nurses report that physicians may take them for granted...don't understand, respect, or care to listen to nursing perspectives...different perceptions... often result in misunderstanding and conflict between nurses and physicians and can become a breeding ground for anger and dissatisfaction" (2007, p53). She goes on to say, that in order to change the status quo, there needs to be strategies put in place which encourage addressing problems directly, rather than just complaining about them.

Potter (as cited in Pearson et al., 2006) contends that "autonomy – independence and the capacity to make decisions, and act on them is conceptually incongruent with the growing emphasis in nursing cooperating with patients as partners". Cultural safety in its broadest interpretation is an accepted competency within nursing's scope of practice, and now evidence of participation, partnership and protection is regulatory. Sackett et al puts the patient and their values central to decision making in evidence-based practice with their definition, "the conscientious, explicit and judicious use of current best evidence in making decisions about the healthcare of patients", this was extended to include "the

practice...integrates clinical expertise and patient values with the best available research evidence" (as cited in Courtney, 2005, p4). Working on the principle of giving autonomy to those at highest risk from their disease process or medical intervention or both, the patient needs to be allowed the opportunity to be involved or even determine their care. Respect is an ethical expectation, and being respectful of others right to "be", and to self determine is central and needs to be at the core of service delivery. According to Doane and Varcoe "relational practice is in essence a humanely involved process of respectful, compassionate, and authentically interested inquiry into another's (and one's own) experiences (2002, p401). Hartrick contends, if nurses practiced relational practice, they "have the opportunity to make a profound difference in peoples' health and healing experiences" (1997, p527).

The organisational mission statement "care without compromise" might be challenged. According to all participants medical staff determine practice, despite many examples of current care being at odds with what the literature describes as best practice. One participant added "*care without compromise, only if the surgeons agree*".

The participants of the case, the researcher and literature have revealed answers to the research question. Some limitations of the research have been identified, and will be detailed in the following chapter, which also offers a conclusion and recommendations to advance the inquiry further.

CHAPTER SIX

Conclusions and Recommendations

The aim of the project has been met. Participant nurses' understanding of what evidence-based practice is, and how it influences their clinical decision making, has been revealed.

The case, as it was represented by the participants, is consistent overall with the literature reviewed. The strategic intent of the organisation is clear in its aim to resource and support staff to deliver evidence-based care; the limitations revealed by the participants are well represented and documented in the literature, and indicate that, despite people's best efforts, there are complexities within complexities, making the shift to evidence-based practice in its entirety across all specialty practice areas difficult to achieve. The need for additional resources and relationship collaboration, in the form of academic support from outside the bounds of the case, may prove beneficial and enhance organisational capacity and support to achieve the strategic aim of providing evidence-based practice.

Some limitations of the research have been identified and discussion related to these follows. Some recommendations have emerged during the research process and some suggestions for further research to explore practice issues have been identified.

Limitations of the study

Having completed, it is apparent that some limitations exist, which I acknowledge here. The first issue is the number of participants, limited by time but also consistent with qualitative research. The sample size of 10 means there are limitations to the extent to which conclusions can be drawn. In addition, the participants came from three different preparation for practice programs, making it difficult to generalise experience and practice. However, this does not detract from the value of the individual participants' contributions to the findings and discussion, sharing their insights and experiences.

Since the commencement of the study, a number of the participants have left the organisation, reminding us that the case study is merely a snapshot, aiming to identify some issues for further discussion. Results should therefore be considered preliminary to avoid the danger of generalisation.

The research methods could also be viewed as a limitation. They included participant focus groups and individual interviews. In qualitative research, because it is inherently individual, differences in perspective arise. Consideration should be given to possible distorting of the facts to present an argument to advance the individual cause, or distorting the past in order to feel better about the present and possibly future. The presentation of the data is the result of the researcher's interpretation, and the possibility of the researcher taking the analysis and discussion where she saw it going may be considered another limitation. Efforts to negate this have included the careful monitoring of the data to verify interpretation of findings. There is the possibility that the responses of the participants reflected what they thought the researcher wanted to hear. This may be compounded by the fact that the researcher had previously taught the participants or was in some working relationship with them. As has been previously explained, none of the participants were current students, so it was hoped that the time delay in seeking their contribution would reduce this likelihood.

Although there was consideration given to triangulation of data, a major weakness in the study included not observing practice in the clinical setting, or auditing documentation of practice, and not reviewing policy guidelines to determine whether best evidence was indeed incorporated and practiced. There would be some added benefit in conducting a survey related to information literacy skill and its utilisation, to clarify every ones understanding was the same. Such a study would have to be larger than this present one.

Further testing, obtaining data from a wider range of participants, may support or reject the findings of this study.

Personal assumptions revisited

The original assumptions held by the researcher at the beginning of the research are revisited in this chapter. Although education is a key component in the preparation for nurses to provide care which is evidence-based, there are many variables that need to be considered and addressed to secure the support for evidence to be translated into practice.

The first assumption, that education is the key, was found to be sustained in part only, by the participants' contribution to the research. There is no doubt that education can inform and support nurses in their practice. However there are two issues that need to be considered. I am reminded that one of the participants, who had had no formal instruction on evidence-based practice, was able to clearly articulate and demonstrate her heightened awareness of evidence-based practice, what it involves and how she integrates evidence in her practice. The organisation needs to harness such natural creativity and allow individuals to contribute to the organisation strategic aim of delivering care which is evidence-based. Despite the education and natural creativity, the culture of the clinical setting has a major influence on whether evidence-based practice is implemented. There are examples within the participant group of people who have had formal education to support the development of skills to delivery evidence-based practice, but organisational barriers limit there ability to practise it. The workplace culture is influenced by relationships, which opens up another dimension, and which has contributed to some nurses feeling thwarted in their efforts to delivery evidence-based practice. Participant contributions suggest that a culture 'make-over' in some areas of the organisation, to establish a culture of inquiry and individual contribution to practice standards, needs to be undertaken. Regardless of the organisational commitment to funding postgraduate education, if the workplace culture does not allow the graduates to translate their newly learned skills into their clinical practice and develop them further, evidence-based practice will remain a theoretical concept for them and potentially frustration will be the outcome of their learning.

The second assumption relating to inter-disciplinary awareness of evidence-based practice within the different health professional groups of the case would be enhanced with a nursing workforce informed and delivering evidence-based practice. This assumption was not sustained by the participants' contribution to the research question. Power dynamics was a reported feature of the case, with medical colleagues controlling care, based on their experience and preference rather than sound evidence, especially if the evidence came from a source other than medical. There were also reports of a negative research culture among nursing colleagues. How to deal with these phenomena is a challenge that needs to be addressed. The concept of an 'evidence-based champion', indicated previously, as an organisation-wide appointment could make significant in-roads to establishing intra-disciplinary and inter-disciplinary collaboration. Such an appointment would need to

source and demonstrate integration of evidence from various disciplines to inform and support the clinical settings complexity.

The third assumption indicated that contextual issues that influence the delivery of evidence-based practice could be overcome to some extent by education. This was not sustained by the participants' contribution to the research. Complexity theory directed the exploration of relationships and the connections and inter-dependencies within the case. The participants identified that despite education and formal instruction, and the motivation to provide evidence-based practice, barriers prevented them. Barriers came from various areas within the case, with particular reference to inter-disciplinary and intra-disciplinary sources. Overcoming such resistance is a difficult task, with some staff taking the line of least resistance and complying with their medical colleagues. Other participants, however, indicated persistence in challenging their medical and nursing colleagues to achieve their optimal aim of delivering evidence-based practice consistently. I wonder if interdisciplinary initiatives such as journal clubs might develop a level of team cohesion and heightened awareness of the different professional contributions that contribute to the patients' healthcare experience. No health professional group is of lesser value than others, with all having significant contributions to make to the delivery of care. With the patient as the common denominator, and the ethical responsibility to provide 'best practice' to achieve beneficience and non-maleficience, there needs to be a concerted effort to break down barriers that are impeding the legislative requirement to deliver healthcare which is evidence-based. Further research may provide insight as to the multiplicity of forms of resistance and more particularly perceived solutions to making a difference in the work place in terms of its support to achieve the strategic direction of delivering evidence-based practice.

As the research progressed I was challenged to consider what was 'adequate' in terms of the case and the strategic aim to deliver evidence-based care. The participants indicated, and I believe they 'believed', that the integration of research in the organisational policies constituted adequacy. The literature supports this as the reality rather than the ideal (Ciliska, 2005). There was no audit of policies within the research process, nor was there observation and assessment of clinical practice, to identify whether practice complied with policy statements, and to confirm integration of current research. Presuming research is

integrated, accreditation standards may be achieved. I challenge their definition of adequacy. There are two considerations that need to be worked through.

- How do individuals respond to situations of complex healthcare needs, when policy statements do not and cannot incorporate the complexity of patient needs?
- How do individuals respond to situations that require immediate responses, when time to source best practice guidelines is a luxury not afforded the nurses?

Both considerations are common occurrences in clinical practice. Research evidence may or may not be available, requiring clinical judgment based on experience and expertise, a broad knowledge base and expert advice.

So the question I ask myself now is, is research integration in policy statements enough? The participant contributions to the research question and the literature reviewed have helped me to achieve some clarity in my perception of 'adequacy' related to the delivery of evidence-based practice.

- I believe that all staff should have information literacy skills to support their individual contribution to evidence-based practice, and to ensure that their patient care is based on current evidence. Developing reflective practice skills to identify clinical questions, and the skills to source information, analyse and synthesise it into their practice, will support nurses in those situations where clinical questions need answering to support patient care decisions. Evidence-based practice is about reducing uncertainty, which is a feature of many situations in contemporary healthcare.
- It is not acceptable to have staff who do not know what they do not know, regarding evidence-based practice, nor it is acceptable to have staff informed in evidence-based practice and with the skills required to deliver it thwarted by organisational barriers. There are individual and organisational responsibilities to address issues that impede the delivery of evidence-based practice. In order to progress practice, life long learning is required, and each individual nurse is responsible for sourcing the education to meet the demands of contemporary practice. Further research is needed to explore such issues and seek solutions to barriers that impair the nurses' ability to achieve their professional and legislative requirements to deliver care to their patients which is evidence-based.

Recommendations

The recommendations arise from the data analysis and subsequent discussion supported by the literature. Although relevant to the case in particular, I believe the case to be representative of contemporary nursing practise in the New Zealand context, and so the recommendation could be generalised for wider application.

- A review of current education program contents at both under-graduate and postgraduate level is needed. The need for research–and evidence-based practice education that is congruent with clinical practice should be a priority, with clear applicability and relevance.
- There needs to be consideration given to establishing practical workshops that are clinically relevant to the nurses' practice setting, to enable nurses with no formal instruction on evidence-based practice to learn about it in a formal way that supports them in their practice.
- Senior nurses' encouragement of all staff to question practice and review literature to seek best practice guidelines to support clinical decision making, has been identified within the case. This provides examples of positive role models and leadership to demonstrate delivery of evidence-based practice in some specialty areas. In other areas within the case, the appointment of dedicated personnel to develop, implement and maintain policy standards has some merit, but should not be at the expense of staff development. Policy makers working in isolation do not prepare individual staff for the occasions when policies do not support clinical decisions when some unpredictability or unknown clinical questions present, requiring interpretation and response.
- Making the best use of education budgets would suggest that postgraduate education should be encouraged. Nurses need information literacy skills, and the skills to implement evidence-based practice, to ensure nurses have the competencies and capability to explore practice issues, develop critical thinking and provide care which is evidence-based. Attending specialty conferences has some merit in supporting professional development, when combined with postgraduate education, but without skills in critical analysis, may not provide the skill development to support nurses deliver care which is informed with current research evidence.

- Establishing 'evidence-based champions' within the organisation could have a positive effect in supporting staff development and establishing a culture of inquiry. If there were organisation-wide appointment, cross boundary differences may reduce or dissolve. The benefits of such an appointment may include cost containment, reduce resource utilisation (eg disposable use) related to differing practice and procedure standards, provide more consistency through out the organisation with staff training implication and risk management benefits.

In drawing this thesis to a conclusion, there are some questions which prompt further exploration to give greater depth to the inquiry. The research question, within the complexity theory framework has challenged the researcher to achieve both depth and breadth to the discussion. Due to the ubiquitous nature of the focus, namely evidence-based practice, and the complexity of the environment in which it is practiced, extending the number of participant's and including a greater diversity of contribution, namely new graduates and interdisciplinary input may be fruitful and give an appreciation of the case as a whole. I am conscious of the fact that in exploring only one discipline of the multidisciplinary team, the current research process is flawed as it is inconsistent with the tradition of complexity theory, which focuses on the organisation or system as a whole and sees the relationships as more important than the parts. In separating out any part of the system, denies relevant contributions and may destroy what it seeks to understand. Consequently I would recommend a broader, more inclusive inquiry in any further study.

Suggestions for further research activity

- Multidisciplinary team research to explore issues associated with the delivery of evidence-based practice would be of interest and provide an appreciation of an organisation as a whole, including the inter-connections, inter-dependencies and relationships which make up the organisation and give it its complexity. Healthcare and practice standards are evolving. The various health professional disciplines are interpreting and implementing practice changes as individual professional groups rather than as a collective team, which should be the reality in clinical practice and how care should be delivered to each patient.

- To explore more specifically clinical decision making. Evidence-based practice is a part of this process, however there are other areas of interest which need to be explored and would be of interest. Further inquiry would be appropriate in the context of evolving practice standards, where there are no constants and professional and societal expectations are changing.

I believe the case represents contemporary nursing practice in the New Zealand context, in terms of nursing demographics and the complexity of care delivered. There are areas of breakthrough, where evidence is integrated into practice, and there are also nurses with the skills required for the delivery of evidence-base practice. Contextual factors play a large part in individual nurses ability to practice according to their professional and legislative requirements. At best, however, evidence-based practice is limited in its application, with concerns associated with the complexity of the clinical context, education, individual nurses and organisational cultures. Despite evidence-based practice being a professional and legislative requirement of the practising nurse, there remains a significant gap between what the professional and legislative documentations state and the reality of clinical practice. This must be of concern to the Nursing Profession, service providers, and more particularly the patients with a healthcare episode expecting to receive best practice.

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Information Sheet

A Research Project
Exploring some insights into

"What practising nurses understand by the term evidence based practice and how it shapes their clinical decision making."

I am seeking research participants for a project, which explores what practising nurses understand by the term evidence based practice and how it shapes their clinical decision making.
This information sheet has been compiled to provide information on the research project, clarifying the rights of research participants, and giving some indications of the time commitment required of participation.
Contributions will involve a focus group and an interview.

Please note that there will be a requirement to sign a written consent sheet and return it to me via Mrs Alison Viskovic, College of Education, Massey University, Wellington, prior to the commencement of the research project.
I hope you will be interested in participating in this project. If you have ANY questions after reading the information provided, please contact the researcher directly.

This research project is being undertaken by Myra Wilson (the researcher) under the supervision of Mrs Alison Viskovic. It is part of a Massey University Master Paper: Master in Education (Adult Education). This work is a Thesis and will complete the qualification.
Contact details for both the researcher and supervisor are provided at the end of the information sheet. If you have ANY questions, please contact the researcher directly.

The purpose of this research project is to explore what practising nurses understand by the term evidence based practice and how it shapes their clinical decision making. The aims are:

To clarify the understanding of evidence based practice, that practising nurses working in the clinical area base their clinical decision making.

To identify any gaps in the translation and integration of research into clinical practice

To provide future direction for professional development, and support initiatives, to support practising nurses in their clinical practice.

To enhance the delivery of evidence based nursing practice.

It is anticipated that further research questions may emerge and critical review of the current status will grow the body of knowledge that will inform future professional development and practice.

The persons with access to the data collection will be limited to the researcher and supervisor. Every effort will be made to ensure the confidentiality of individual research participants and their contributions. Participants will provide their own unique identifier, however there will be no such identification in the research findings, nor the final write up.

Focus group

Time Commitment: 45 – 60 minutes

Rights:

- I understand that my participation in the focus group will be confidential to the group involved and the researcher, and the discussions during the focus group will respect all contributions and not be discussed outside the official research focus group.
- I understand that I can withdraw from the focus group at any time and deny its contribution to the research data.
- I understand that I can withdraw from the research project at any time and that the signed consent is not binding. This includes my ongoing participation and the withdrawal of data provided by me.
- I understand that the researcher may need to contact me following the focus group to clarify information provided and further explore the question.

- I understand that I can request to view the results of the research and that the researcher will provide the information I request directly.

Interviews

Time Commitment

It is anticipated that each interview will require a 45 – 60 minute time commitment.

Research Participants Rights:

- I understand that I can choose to be interviewed in my workplace or at another venue mutually acceptable to the researcher and myself.
- I understand that the researcher wishes to audio tape the interview – however:
  - I can choose not to have the interview recorded
  - I can ask for the recorder to be turned off at any time during the interview.
- I understand that I can withdraw from the research project at any time and that the signed consent is not binding. This includes my ongoing participation and the withdrawal of data provided by me.
- I understand that the researcher may need to contact me following the initial interview to clarify information provided and further explore the question.
- I understand that I can request to view the results of the research and that the researcher will provide the information I request directly.

IF in the unlikely event there are indications of unsafe practice that the researcher believes needs to be addressed, this will be discussed with the participant(s) in the first instance, and indication will be given that the researcher may feel obliged to communicate concerns to the employer, in the interest of public safety.

Please complete the Consent Form attached and return it in the stamped and addressed envelope provided to:

Mrs Alison Viskovic
College of Education
Massey Univeristy
WELLINGTON

If you have any questions regarding any aspect of the research project, please contact either:

Myra Wilson (researcher)

[redacted]

[redacted]

OR

Mrs Alison Viskovic (supervisor)
Massey University
WELLINGTON
Telephone: 04 801 2794 extension 6713
Email: a.r.viskovic@massey.ac.nz

This project has been reviewed by a Sub-Committee of the Massey University Human Ethics Committee, Palmerston North Application 05/69. If you have any concerns about the ethics of this research, please contact Dr John G O'Neill, Chair, Massey University Campus Human Ethics Committee.
PN telephone 06 350 5799 x 8635, email humanethicspn@massey.ac.nz

The study has received ethical approval from the Central Regional Ethics Committee. CEN/05/08/059
If you have any queries regarding your rights as a participant in this study you may wish to contact Health and Disability Advocate, telephone
Mid and lower North Island 0800 42 36 38 (4 ADNET)

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A Research Project
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Consent Form

This consent form will be held for a period of ten (10) years.

I have read the research information sheet, and details of the research project have been explained to me, and to my satisfaction.
All my questions have been answered and further questions that may emerge will be address at any time during the research project.

I agree / do not agree to the interview being audio taped.
(please delete the appropriate response)

I agree to being a research participant, and understand the conditions set out in the research information sheet.

Signed:_____ Date:_____

Please PRINT Full Name:_____

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Appendix 2

Anticipated List of Questions for the Focus Group and Interview

The questions listed are to be directed to all the research participants

1. How do you define evidence based practice (EBP)
2. Did your formal education incorporate EBP – if so how
3. How do you source evidence to inform your clinical decisions
4. What informs/influences your clinical decision making
5. What are the challenges/constraints for you in delivering EBP
6. How do you perceive you can be better supported to deliver EBP
7. What makes an expert an expert in your context

Any other contribution that the research participants might like to add
And any answers that arise from the responses to the above questions