Health professionals’ decision-making in wound management: A grounded theory
Abstract

Aim: To develop a conceptual understanding of the decision-making processes used by health care professionals in wound care practice.

Background: With the global move towards using an evidence-base in standardising wound care practices and the need to reduce hospital wound care costs, it is important to understand health professionals’ decision-making in this important yet under-researched area.

Design: A grounded theory approach was used to explore clinical decision-making of health care professionals in wound care practice.

Methods: Interviews were conducted with 20 multi-disciplinary participants from nursing, surgery, infection control and wound care who worked at a metropolitan hospital in Australia. Data were collected during 2012-13. Constant comparative analysis underpinned by Strauss and Corbin’s framework was used to identify clinical decision-making processes.

Findings: The core category was ‘balancing practice-based knowledge with evidence-based knowledge’. Participants’ clinical practice and actions embedded the following processes: ‘utilising the best available information’, ‘using a consistent approach in wound assessment’ and ‘using a multidisciplinary approach’. The substantive theory explains how practice and evidence knowledge was balanced and the variation in use of intuitive practice based knowledge versus evidence based knowledge. Participants considered patients’ needs and preferences, costs, outcomes, technologies, others’ expertise and established practices. Participants’ decision-making tended to be more heavily weighted towards intuitive practice-based processes.

Conclusion: These findings offer a better understanding of the processes used by health professionals’ in their decision making in wound care. Such an understanding may inform the development of evidence-based interventions that lead to better patient outcomes.
Key words: nursing, acute care, clinical judgement, evidence-based practice, information access, pharmaceutical marketing, ward culture, multidisciplinary, patient advocate, qualitative
Why was this research or review needed?

- Practising evidence-based wound care is challenging because of the lack of high quality research evidence to inform clinical decisions.
- There is little research around decision making in wound care and its processes appear to be complex but largely hidden.

What are the three key findings?

- Findings include a core category, balancing practice-based knowledge with evidence-based knowledge is underpinned by three processes.
- Participants’ clinical practice is underpinned by ‘utilising the best available information’, ‘using a consistent approach in wound assessment’ and ‘using a multidisciplinary approach’.
- A theoretical contribution to wound care practice through the development of a framework for understanding health professionals’ decision making processes.

How should the findings be used to influence policy/practice/research/education?

- This theory provides a foundation on which to develop theoretically-based interventions that focus on supporting clinicians in their wound care decision making, irrespective of their discipline and level of expertise.
INTRODUCTION

Wounds are a major source of morbidity to patients and a substantial cost to health care organisations. Wound care costs are often concealed and not only include dressing products, but also encompass the ongoing costs associated with valuable resources such as nursing time and hospital bed days. The results of an audit conducted in the United Kingdom (UK) indicated that nursing time spent on dressing changes amounted to 88.5 full-time equivalents over one year, while wound-attributable inpatient costs were estimated to be between 19,000-31,000 bed days per annum (Drew et al. 2007). In the UK, economic estimates indicate that wounds account for approximately 4% of total health system costs and this proportion is increasing (Drew et al. 2007). In the USA, chronic wounds affect up to 6.5 million patients and cost in excess of US$25 billion annually (Sen et al. 2009). More than 2.6 billion dollars per year in Australia is spent on wound care (Mulligan et al. 2011).

The use of evidence based practice in wound care is essential in achieving better patient outcomes and has the potential to reduce hospital wound care costs. It is important to understand processes that underpin decision-making in this vital area of clinical practice. The aim of this study was to develop a conceptual framework to explain the decision making of health professionals in wound care. The findings reported will inform the implementation of evidence-based initiatives in an Australian university hospital.

Background

Clinical decision-making is defined as the process of gathering information to enable clinicians to make a judgement about a course of action (Elwyn et al. 2012, Luker & Kenrick 1992). The nature of clinical decision-making has been the subject of extensive debate, with theorists divided between two schools of thought: Some view clinical decision-making as a
logical positivist process that is enacted using a reductionist linear approach (Kenrick & Luker 1996). However others believe that decision-making is based on intuition, a process which is not easily reducible and cannot be presented as a logical schema (Benner 1984). Factors inherent in clinical decision making include expertise; the amount, accuracy and relevance of available data; and the knowledge available for addressing a specific health care problem (Benner 1984, Luker & Kenrick 1992, Wiest 2006). Still, others argue that clinical decision-making may be influenced by aspects of the environment that are not necessarily directly associated with the decision task (McCallum et al. 2013). Findings from an earlier observational study of critical care nurses suggested that clinical decision-making was influenced by the availability of up-to-date technology and experienced staff and interpersonal relationships (Bucknall 2003).

Only three qualitative studies published over the last 20 years have described clinical decision-making in wound care (Hallett et al. 2000, Lamond & Farnell 1998, Luker & Kenrick 1992). Luker and Kendrick (1992) found that decisions were informed by knowledge, based either on research, practice underpinned by experience, or common-sense. In the same study, these researchers also found that the most predominant influence on decision making was ‘practice-based knowledge’ (Luker & Kenrick 1992). Several researchers have described the difficulties inherent in defining wound care decision-making by nurses in terms of the ‘novice’ and the ‘expert’ and the salience of making the ‘correct’ decision (Birchall & Taylor 2003, Gartlan et al. 2010, Keast et al. 2004, Lamond & Farnell 1998). ‘Expert decision-making’ was characterised by the health practitioner’s ability to focus on the important aspects of the situation. Based on the insights of domiciliary nurses, Hallett et al. (2000) found that decision-making in wound care, while largely intuitive, also appeared to be founded on a reductionist, diagnostic approach. Nevertheless, in the last 20 years, wound care practices have evolved.
This study was conducted for three reasons: First, wound care practices appear variable and the use of clinical guidelines, inconsistent (Gillespie et al. 2014). Therefore identifying what shapes decision-making is useful to advance wound care research and practice. We considered decision making as a process, guided by the acquisition of information needed to make a judgement about a course of action among several alternative possibilities. Second, it appears that clinical decision-making is largely contextual. Decision-making approaches clinicians use may vary depending on the clinical subspecialty. Finally, in wound care practice, there is a paucity of research that conceptualises the relations among decision making processes.

The Study

Aim

In this study our aim was to develop a conceptual framework to explain the types of decision making processes used by health professionals in wound care practice. We sought to identify and describe interrelated processes of health professionals’ decision-making in wound care, in relation to all wound types.

Design

An interpretive paradigm embedded in a grounded theory approach (Strauss & Corbin 1998) was used to explore participants’ decision making in wound care. Theory generation allowed us to develop a conceptual framework to inform the development of evidence-based strategies.
Setting / Participants

Purposive and then theoretical sampling techniques were used to collect data from health professionals practising in various clinical roles and disciplines in an Australian public hospital. At the time of this study, the hospital had 450 beds and catered for all clinical specialties except cardiac and transplant surgeries. Data collection and analysis occurred reciprocally. Initial sampling was determined by area of expertise and where participants’ clinical roles overlapped or directly included wound management. The types of wounds participants managed varied and included acute (i.e., surgical), chronic (e.g., ulcers, pressure injuries) and complex (e.g., fungating lesions, fistulae). Sampling of participants or data sources was determined by the emerging concepts (Strauss & Corbin 1998). Theoretical sampling occurred as information provided by one participant directed selection of further participants or data sources, refining data collection and analysis. As the study progressed, description of decision making processes expanded, necessitating the deliberate selection of participants with particular knowledge. Using predefined sample sizes potentially poses ethical challenges and theoretical saturation may not be achieved. We informed the ethics committee a priori that up to 30 participants would be interviewed with the caveat that data collection would cease earlier or a further request made to increase participant numbers. Participants reflected a variety of ages, clinical specialties, years of experience and multiple discipline perspectives.

Data Collection

Semi-structured interviews and focus groups were conducted during 2012-13, audiotaped and transcribed, which allowed the first author to write observational notes. During interviews, a conversational approach to interviewing enabled participants to provide
rich descriptions of the factors that influenced decision-making processes in wound care. An interview guide was used and initial and ongoing questions (Table 1). Firstly, questions were general and subsequent questions explored participants’ responses in greater depth. As concepts emerged, the interview guide was revised and questions became more focussed, related to emerging concepts. Prior to each interview, participants completed a demographic questionnaire of characteristics (age, gender, education, years of clinical experience, clinical role) to contextualise the findings and describe the group. Physicians and clinical nurse specialists were interviewed individually due to availability constraints. Group interviews were conducted with nurse participants who belonged to the same staff category to minimise potential status differentials and ensure group homogeneity (Klueger 1994). Interviews were conducted at the participant’s convenience, in a quiet area away from the clinical environment.

**Ethical considerations**

Approvals were given by the hospital and university Human Research Ethics Committees. Participants were given an invitational letter detailing study information. Participants were asked to sign a consent form and advised of their right to confidentiality and anonymity and to withdraw at any time.

**Data analysis**

Textual data were analysed using grounded theory approaches (Strauss & Corbin 1998). Analysis was inductive and data were categorised using constant comparative methods. First, open coding was used to examine each line of the textual data and codes were attributed to words or sentences to categorise the data according to their meaning or actions.
The codes arose directly from the textual data (Charmaz 2000). Emergent codes were compared iteratively with existing codes to examine similarities or differences (Strauss & Corbin 1998). Similar codes were grouped together to form subcategories and description was given to ensure consistency in coding and augment the audit trail. As analysis progressed, relationships between codes and subcategories were developed through axial coding. Constant comparative analysis continued until each category was saturated or when no new information or categories emerged.

The categories and subcategories were subsequently examined using the conditional / consequential matrix, to explain how these related to the core category (Strauss & Corbin 1998). The causal, intervening and contextual conditions were activities or actions that shaped challenges or problems related to this phenomenon. The consequences were the outcomes of the participants’ decision-making to manage the challenges associated with wound care. Using this analytical matrix enabled us to identify relationships among the concepts that underpinned wound management decision-making and enabled development of an explanation of the relationships between processes. Finally, a conceptual framework was constructed based on interrelated decision-making processes.

**Rigour**

This study is underpinned by the hallmarks of credibility, auditability, transferability and reflexivity (Guba & Lincoln 1994, Kitto et al. 2008, Strauss & Corbin 1998). To establish credibility, the alignment between participants’ experiences or actions was scrutinized and taken back to them to confirm the authenticity of the researchers’ interpretations. Where possible, participants’ own words were used to illustrate the processes of theory development. Auditability was supported by memos which were linked to pieces of
data confirmed by codes and through producing clear documentation around conceptual comparisons. Transferability of findings to other similar contexts was rendered through maximum variation by interviewing a variety of participants relative to demographics and experiences and actions described. Lastly, reflexivity was achieved through the researchers’ acknowledgement of the impact of their personal and professional subjectivities and the selection of participants and research topic may have on the interpretation of findings (Kitto et al. 2008).

**Findings**

Interviews were conducted with 20 multi-disciplinary participants in 4 focus groups and 6 individual interviews (Table 2). Most participants were female (80%). Interviews ranged from 25 to 45 minutes. Participants’ ages ranged from 23-60 years, with a median age of 37.5 years (IQR = 20.0 years). Years of clinical experience ranged from 2-35 years, with a median of 12.5 years (IQR = 13.0 years).

**The theory: Balancing evidence-based knowledge with practice-based knowledge**

The phenomenon (i.e., core category) to emerge from the data was ‘balancing evidence-based knowledge with practice-based knowledge’. The phenomenon incorporated three interrelated but distinct decision making processes: using the best available information, using a consistent approach in wound assessment and using a multidisciplinary approach. The causal condition, the need to manage the wound care issue, problem or practice, contextual conditions (i.e., workplace culture, information access, political and clinical context, product choice) and intervening conditions (i.e., knowledge, experience, attitudes, interpersonal relationships), shaped the contextual challenges in making decisions to manage the wound
care issues. The substantive theory explains the tensions experienced by health professionals in balancing practice-based knowledge with evidence-based knowledge during decision making (Figure 1). The theory generated reinforces the existing gap between current research evidence and actual wound care practices. While the basis of decision making is ostensibly founded on using best evidence, the reality of clinical practice is reflected in decision making that is more heavily weighted towards using pragmatism. Thus there is an imbalance as participants’ actions more often lead to decision making that was underpinned by practice-based knowledge—and informed by clinical experience and intuition. The consequences of using practice-based knowledge versus using the best evidence are manifest in variations in guideline use and wound management approaches. The different decision making processes used to inform the use of a consistent approach in assessment frequently lead to pragmatic decisions around product selection and achieving treatment goals. The need to find a balance between the two decision making approaches embedded in using a multidisciplinary approach culminates in continuity of care, use of appropriate care plan processes and individualised care.

Using the best available information

Using the best available information encompassed actions participants used to seek out wound care information to guide decision making. ‘Adhering to best practice’ was epitomised by hand washing, being familiar with the hospital’s wound care policies, maintaining asepsis and environmental hygiene. Yet nurse participants described common practices that negated best practice principles. For instance, the widely accepted practice of washing the patient’s exposed wound in the shower:
Running head: Decision making in wound care

There’s no way that communal bathrooms are cleaned between patients. Even if the patient [using the bathroom] hasn’t had a wound, you don’t know that they weren’t colonised with something. We are hitting the patient with shower water and aerosolising where that water is hitting, so that probably is detrimental. (Infection Control Nurse Consultant, interview 6)

Using research-based evidence in wound care was often difficult in a clinical culture resistant to change. ‘Challenging entrenched practices’ was defined by health professionals’ insistence on perpetuating outdated practices that novices and new graduate nurses were expected adopt:

A lot of people refuse to change their practice. They’re set in their ways, ‘this is what I am doing and this is the way I have done it for 20 years and why should I change it? Evidence based what [ironic]?’ (RN 11, Group 3, interview 8)

Conversely, some senior nurses and wound care experts described units that promoted a culture of enquiry, enabling nurses to question the current practice status-quo:

On some of the wards that I’ve worked in, they very much encourage and challenge the surgical staff. A full frontal challenge, ‘You’re using that dressing? Why are you planning this form of treatment? Have you considered something else?’ (Tissue Viability Nurse, interview 4)

In the midst of time constraints, participants made pragmatic decisions and sought information that was easily accessible and provided ‘instant solutions’ based on previous experience. In many instances practised based decisions led to participants using secondary sources of information, offered by colleagues. The information given by others was often imbued by previous clinical knowledge and experience, which was not always current and sometimes conflicted with best practice:
I had one [chronic wound] very recently and the doctor wanted a vac [vacuum dressing] on it. But it was a really dirty wound, it needed debriding, it needed cleaning first, like we all know that you shouldn’t be using a vac dressing until you have prepared your wound. (RN 3, Group 1, interview 1)

‘Using biased information’ was described in relation to sourcing information through product ‘reps’. Participants held a healthy scepticism in relation to the lack of ‘objectivity’ associated with the information given by product representatives:

They [product representatives] present research to support their products. So you have to keep in mind that they push their products. So their research might be very directed towards what they are trying to encourage. (Clinical Educator, interview 10)

Yet, participants’ mistrust regularly ran counter to their actions as the bulk of the wound care information they accessed was derived from companies. This imbalance culminated in an increased presence of product representatives on site, with representatives strategic in setting up in-service opportunities. ‘Peddling products’ encapsulated the ‘aggressive marketing’ techniques used by pharmaceutical representatives to sell their company’s wares. The ‘commercial push’ and ‘hard sell’ was considered ‘not so responsible’ and occurred at the expense of presenting objective information:

The only dressing product for which there is level 1 evidence is iodine. Nothing else. There is no evidence. It’s all circumstantial. It’s all industry driven and funded and it’s all a load of rubbish. (Physician, interview 2)

‘Selecting products based on branding’ emphasised participants’ preference for established brand names. Participants were far more familiar with product trade names as
opposed to their generic names. Most participants had limited knowledge about wound physiology and the interactive properties of the dressing products they used routinely:

...they don’t say ‘it’s a hydrocolloid or an alginate dressing’, they know the trade names and they know what [wounds] they’re familiar with putting them on. So it’s really just by using a particular dressing on a wound that they know that it works. They don’t know anything behind the actual physiology of wounds.

(Tissue Viability Nurse, interview 4)

Practised-based decisions around product selection were built on participants’ familiarity with a particular dressing product. While many companies manufactured similar types of wound care devices, participants preferred products from companies they were familiar with and had dominated the market over many years:

First is best. [There is a] type of mentality and I agree is not necessarily correct, but that is what happens. So I am probably always going to favour [the brand name I know]. (Physician, interview 2)

Objective data obtained through wound assessment had less influence on decisions around product selection than did participants’ previous knowledge and experience—even in the absence of evidence to support product superiority.

*Using a consistent approach in wound assessment*

Using a consistent approach in wound assessment included actions that influenced the tenuous balance between practised-based and evidence-based knowledge decisions. While assessment of simple surgical wounds was considered ‘straightforward’, participants encountered many more challenges with chronic and complex wounds. ‘Sharing specialist
knowledge’ demonstrated the salience of creating learning opportunities during the wound assessment process regardless of their previous clinical experience:

If someone is doing a dressing they’ll sometimes come to someone who is a bit more senior and say, ‘What do you think I should put on this?’ and three of us will have a look and we’ll go, ‘this is what we think and from what our experience is’ and that’s how the staff just learn from other staff. (RN 9, Group 2, interview 5)

The act of seeking out others’ expertise assumes that the guidance given is consistent and evidence-based, but this was not always the case.

‘Balancing product costs with outcomes’ underpinned dressing selection decisions in an effort to minimise associated costs with product purchase, both of which were prohibitive and unsustainable. A circumspect approach was required when selecting products:

The decisions we make are going to be expensive or more expensive and we have to decide on making those decisions because we have access to the health public purse which is shrinking.... (Physician, interview 7)

Practised-based decisions around the benefit of using particular wound care products were delicately balanced between the burden of cost and optimising patient outcomes:

.....we have got to use what our community can afford but then again a wound breakdown, how much does that cost with patients being in hospital for weeks and months? So when you equate to that, then it’s worthwhile.... (Tissue Viability Nurse, interview 3)

Although certain dressing products were exorbitantly expensive, there were occasions where these products were deemed appropriate based on an empirical assessment of the patient’s
overall physical condition. Ultimately such decisions were pragmatic and based on experiential knowledge about ‘what [product] works’.

In ‘being consistent’ in assessment and documentation, decision making was underscored by:

Assessment, patient assessment....as systemic standardisation, it’s all about standardisation of practice (Tissue Viability Nurse, interview 3)

Nevertheless the imbalance in the use of practised-based versus evidence-based decisions occurred when two health professionals gleaned completely different clinical perspectives while assessing the same wound. Thus decision making was driven by experiential knowledge. While diagnosis of wound aetiology and assessment were important, a systematic approach to assess the patient was also needed. ‘Understanding the goals of treatment’ encompassed using preventative strategies, managing complications and providing rationales:

As long as you have got good reason and you can tell them [medical staff] exactly why you shouldn’t be using it [particular wound product]. (RN 3, Group 1, interview 1)

The increasing availability of wound products imposed changes in the ways clinicians performed wound care, especially with complex wounds. ‘Using innovative technologies’ in wound care products offered participants revolutionary solutions to treating chronic and complex wound pathologies:

In the last 10 years, the vacuum assisted dressing has made a massive difference to the way we treat wounds and I think that’s because of the science, it’s clever. (Physician, interview 7)
Yet, the convenience of having state-of-the-art products was juxtaposed with the growing perplexity participants experienced as they struggled to keep abreast of new product developments:

What most people find confusing is when product reps bring out new stuff all the time, you can’t keep up with it. Something [new product] comes in and you are not really sure how it works or what you should do with it. (RN 9, Group 2, interview 5)

**Using a multidisciplinary and holistic approach**

Using a multidisciplinary and holistic approach in decision-making was characterised by the tensions participants experienced in balancing tasks associated providing responsive wound care and the need to treat patients as individuals. Decisions based on a holistic understanding of the patient’s individual circumstances enhanced health professionals’ ability to give care appropriate to meet the patient’s needs. ‘Advocating for patients’ involved speaking up for the patient and challenging wound management decisions that were either outmoded or inappropriate for the patient’s clinical condition:

So it [wound] needed other attention first and we are advocates for the patient. (RN 3, Group 1, interview 1)

While opinion was occasionally divided on whether the proposed treatment would proffer long term benefit to patient care, decisions around advocacy were underpinned by intuition and an unspoken personal knowledge of the patient.

‘Treating patients as individuals’ encompassed practised-based decisions that were informed by health professionals’ tacit knowledge of the patient’s individual circumstances:
You have to treat every patient uniquely and this is why cookbook medicine doesn’t work because it doesn’t allow this. (Physician, interview 7)

Often, such decisions also relied on ‘gut feelings’. For instance, providing individualised care involved actions such as talking to patients to gain a better understanding of their home situation:

Taking the time to talk to patients and getting a patient history, learning why that patient is the way they are, learning what they do in the home, why they are they malnourished, are they eating or are they giving their food to their pets? (Tissue Viability Nurse, interview 3)

This was especially important for patients who presented with complex wound issues (e.g., chronic vascular ulcers), where ‘their whole life then revolves around this wound.’ As the wound care issues increased in complexity, participants predominantly used practised-based decision making.

‘Collaborating with others’ exemplified knowledge-based decisions founded on scientific rationales for developing a patient-centred, comprehensive care plan:

We get the dietician involved, the OT [occupational therapist], the doctors are involved, so it’s not just nursing staff driving something, it’s a very multidisciplinary approach. (Clinical Educator, interview 10)

More commonly, evidence-based decisions were underscored by actions that promoted a team approach focussing on diagnosis and led to better outcomes. ‘Valuing others expertise’ included interactions which encompassed showing professional respect, sharing dialogue and listening to others:
They [doctors] expect us or the wound team to just basically make the decision on it really, whatever, they’re happy to put it on to us. (RN 9, Group 2, interview 2)

Discussion

The substantive theory generated illustrates the pressures in ‘balancing evidence-based knowledge’ with ‘practice-based knowledge’. Wound care is underpinned by three decision making processes; using the best available information, using a consistent approach in assessment and using a multidisciplinary approach. Our participants often made practise-based decisions that were not evidence-based—despite the credence given to evidence-based approaches. Although participants described the importance of using research to inform their wound care practice, many decisions were driven by experiential knowledge derived from clinical exposure. In an earlier study, similar results were found with practice-based knowledge being identified as the single largest influence (57.5%) on nurses’ wound care decision making (Luker & Kenrick 1995). Some researchers have described the ad hoc manner in which wound care guidelines are applied; on average in 67% of treatment decisions (Grol 2001). Others suggest that between 30–40% of patients receive care that is not in accordance with available high quality evidence; while another 20–30% of patients receive care that is actually contraindicated (Schuster et al. 1998). Although clinical guidelines are useful decision aids, they do not take into account individual patient’s needs.

The influence of the clinical environment on nurses’ decision making in relation to information seeking has been well established (Bucknall, 2003, Hallett et al. 2000, Luker & Kenrick 1992). Our findings illustrate the influence that contextual conditions (i.e., workplace culture, access to information and time constraints) have on decision making.
Thompson et al. (2004) describe the notion of ‘decisional complexity’ relative to time imperatives, multiple decision goals and disparate or conflicting options. In our study, health professionals tended to fall back on using intuitive decision making particularly when managing either chronic or complex wounds. Time constraints added to decisional complexity and shaped participants’ information seeking behaviour: Before an episode of wound care, despite having ready access to hard copy printed clinical guidelines or recommendations, participants favoured accessing knowledge based on experience or sought the advice of colleagues. Conceivably, clinicians use lower level, but widely available information (Thompson et al. 2004). If the evidence-based information has been ‘proven’ to work based on past experience, clinicians are more likely to incorporate it into everyday practice. Seeking colleagues’ advice demonstrates a reliance on ‘human sources’ of information as a primary means of informing situations where clinicians remain uncertain (Bucknall 2003, Thompson et al. 2004).

The propensity for health professionals to use practise-based processes during wound assessment is hardly surprising given the variation in clinical expertise, the plethora of wound care products and the costs of these products. Clinicians are constantly challenged to provide evidence-based wound care in the absence of high quality research and as such, limits the extent to which evidence-based decision making is enacted (Grimshaw et al. 2004). Our participants described the difficulties associated with assessment of chronic and complex wounds, particularly when clinicians’ held disparate views regarding dressing choices. Other researchers reported similar findings suggesting that conflict in clinical judgement arises when there is disagreement in treatment options and/or inadequate expertise (Bucknall 2003, Lamond & Farnell 1998). In our study, decisions around cost were not always obvious, with participants emphasising the need to consider patient and organisational factors when making decisions on treatment options. Adding to the ‘decisional complexity’ was the overwhelming
availability of wound care products—impacting on participants’ treatment decisions. Clearly clinicians may be hard-pressed to make such decision based on the evidence alone as some are based on ‘tacit’ or personal knowledge of the patient (Benner 1984) and the organisation. Moreover, available therapeutic options in wound care are often influenced by many stakeholders. While experiential knowledge from these stakeholders is a necessity, if one or more of these stakeholders do not make an evidence-based decision, the treatment outcome may be less than optimal (Luker & Kenrick 1992).

In this study, decision making using multidisciplinary and holistic approaches was tempered with knowledge of the patient and the expertise of others. Patients with chronic wounds often have complex medical needs and diverse social circumstances; therefore a ‘one-size-fits-all’ approach to diagnosis and treatment options may be ineffective (Luker & Kenrick 1992). Having an understanding of patients’ preferences and past experiences may inform clinicians’ decisions from a holistic perspective (Hallett et al. 2000). In our study, decisions involving collaboration with health professionals from other disciplines in treatment decisions was underpinned by a factual, scientific knowledge of circumscribed expertise. However, such collaborations were more likely to occur with increased patient complexity. Researchers have acknowledged that patient complexity is one of the most influential factors in clinical decision making (Thompson et al. 2004).

**Strengths and Limitations**

While this study has several strengths, we acknowledge its limitations. First, the single hospital locale may limit transference to other settings because the health professionals in this hospital may in some way, be different. Nonetheless, there was representation from a cross section of disciplines which permitted diverse perspectives. Second, the findings are
based on participants’ perceptions, not the majority of clinical staff. Yet, participants and data were chosen using theoretical sampling and the experiences presented are based on interdisciplinary perspectives. Thus, there may be conceptual transference to other clinical settings. Third, the different methods of interview may have given rise to different group dynamics and thus influenced participants’ responses. Notwithstanding, the lead author conducted all interviews and similar issues explored, with data saturation achieved. Finally, the quality of a ground theory should be assessed by the criteria fit, relevance and modifiability (Strauss & Corbin 1998). As such, the theory generated is an ever-evolving process rather than a finished product. While this theory may need further refinement and application in other acute care settings, it nevertheless contributes to gaining a conceptual understanding of decision making processes used in wound care practice.

**Implications for practice, education and research**

The theory generated has implications for clinical practice and translational research. From an organisational perspective, a culture shift towards one that values learning and evidence based practice is essential in addressing outmoded clinical practices. From an education perspective, creating education opportunities for health professionals in relation to the management of chronic and complex wounds may be beneficial. Translational research into the barriers and enablers of the three decision making processes illustrated through this theory is timely. Working with clinical stakeholders to identify contextual factors that hinder and enable the use of evidence-based decisions gives them ownership of the process. Consequently, strategies introduced promote the use of evidence-based decisions in wound care are more likely to be sustained.
CONCLUSION

Evidence-based practice is consistently advocated as a means to improve the quality of clinical practice. Yet, the broader perspective of decision making identified herein emphasises the criticality of interpersonal, cultural and organisational factors in optimising informed decisions that will lead to better patient outcomes. Clearly, decision making in wound care practice is a dynamic, reciprocal process that is underscored by contextual and intervening conditions. Clinical decision making in wound management involves both propositional and intuitive processes, which if used judiciously, may complement each other and yield optimal patient outcomes.
References


Elwyn, G; Frosch, D; Thomson, R; Joseph-Williams, N; Lloyd, A; Kinnersley, P; Cording, E; Tomson, D; Dodd, C; Rollnick, S; Edwards, A & Barry, M. (2012). Shared Decision Making: A Model for Clinical Practice. *J Gen Intern Med* 27, 1361-1367.


Grimshaw, J; Thomas, RE; MacIennan, G; Fraser, C; Ramsay, CR; Vale, L; Whitty, P; Eccles, MP; Matowe, L; Shirran, L; Wensing, M; Dijkstra, R & Donaldson, C. (2004). Effectiveness and efficiency of guideline dissemination and implementation strategies. *Health Technol Assess* 8.


Pachowsky, M; Gusinde, J; Klein, A; Lehrl, S; Schulz-Drost, S; Schlechtweg, P; Pauser, J; Gelse K & Brem, M. (2011). Negative pressure wound therapy to prevent seromas and treat surgical incisions after total hip arthroplasty. *International Orthopaedics (SICOT)*.


Thompson, C; Cullum, N; McCaughan, D; Sheldon, T & Raynor, P. (2004). Nurses, information use and clinical decision making --the real world potential for evidence-based decisions in nursing. *Evid Based Nurs* 7, 68-72.
### Table 1: Interview guide

<table>
<thead>
<tr>
<th>Initial Questions</th>
<th>Concept-related questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Tell me about how you make decisions in wound management?</td>
<td>• How do you decide where to seek wound care information?</td>
</tr>
<tr>
<td>• Describe some of the issues that have a bearing on decision making in wound</td>
<td>• What information did you need to make the decision?</td>
</tr>
<tr>
<td>management?</td>
<td>• What helped you to make the decision?</td>
</tr>
<tr>
<td>• What sorts of wounds do you have to manage?</td>
<td>• How did you decide that this information was useful/not useful?</td>
</tr>
<tr>
<td>• How did you decide what wound management strategies to use?</td>
<td>• What sources did you seek the information from?</td>
</tr>
<tr>
<td></td>
<td>• Under what circumstances would you ask a colleague for advice about wound care?</td>
</tr>
<tr>
<td></td>
<td>• How did you decide that your colleagues knew about wound care?</td>
</tr>
<tr>
<td></td>
<td>• What sort of advice did your colleagues give you?</td>
</tr>
<tr>
<td></td>
<td>• How did you decide that this advice was appropriate?</td>
</tr>
<tr>
<td></td>
<td>• How do you decide on the patient’s treatment plan?</td>
</tr>
<tr>
<td></td>
<td>• How did you know the treatment plan would work?</td>
</tr>
<tr>
<td></td>
<td>• What you did you do when the treatment plan did not work as you had expected?</td>
</tr>
</tbody>
</table>
Table 2: Number of participants interviewed, the method of interview and specialty

<table>
<thead>
<tr>
<th>Number of Participants</th>
<th>Method of interview</th>
<th>Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Registered Nurses</td>
<td>Focus Group</td>
<td>Surgical ward A</td>
</tr>
<tr>
<td>2 Registered Nurses</td>
<td>Focus Group</td>
<td>Surgical ward B</td>
</tr>
<tr>
<td>3 Registered Nurses</td>
<td>Focus Group</td>
<td>Surgical ward C</td>
</tr>
<tr>
<td>5 Registered Nurses</td>
<td>Focus Group</td>
<td>Surgical ward D</td>
</tr>
<tr>
<td>4 Registered Nurses</td>
<td>Individual</td>
<td>2 Tissue Viability Nurses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Infection Control Nurse Consultant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clinical Nurse Educator</td>
</tr>
<tr>
<td>2 Physicians</td>
<td>Individual</td>
<td>2 Surgeons</td>
</tr>
<tr>
<td>Total 20 participants</td>
<td>10 interviews</td>
<td></td>
</tr>
</tbody>
</table>
USING A MULTIDISCIPLINARY & HOLISTIC APPROACH

USING A CONSISTENT APPROACH IN WOUND ASSESSMENT

IMBALANCE

PRACTISED —BASED KNOWLEDGE

EVIDENCE-BASED KNOWLEDGE

UTILISING THE BEST AVAILABLE INFORMATION

• Using biased information
• Selecting product based on branding
• Peddling products

• Advocating for patients
• Treating patients as individuals

• Collaborating with others
• Valuing others’ expertise

• Balancing costs with outcomes
• Being consistent
• Using innovative technologies

• Sharing specialist knowledge
• Understanding the goals of treatment

• Adhering to best practice
• Challenging entrenched practices

• Balancing costs with outcomes
• Being consistent
• Using innovative technologies

• Balancing costs with outcomes
• Being consistent
• Using innovative technologies

BALANCE

Figure 1: Substantive theory of clinical decision-making in wound care practice

31