

**Title:** Wound care practices: A survey of acute care nurses.

**Aims and Objectives:** To describe the self-reported wound care practices of acute care nurses practising in a large metropolitan hospital in Queensland, Australia.

**Background:** Wound infections occur in up to 30% of surgical procedures and are the third most commonly reported hospital acquired infection. The growing complexity and cost of wound care demands that nurses' use wound care knowledge based on best practice guidelines.

**Design:** Descriptive cross-sectional survey design.

**Methods:** A convenience sample of 250 medical and surgical nurses working in an acute care facility was invited to complete a 42-item survey. The survey was based on an extensive literature review and an environmental scan of wound care issues in major hospitals, Australia.

**Results:** The survey was completed by 120 acute care nurses for a response rate of 48%. Ninety (75.6%) respondents reported that 'wound appearance' was the most important factor guiding their choice of dressing product. Only 6 (5.0%) respondents considered the cost of a dressing product 'highly important'. Fifty-nine (50.4%) respondents reported being 'unaware' of the national standards pertaining to wound management, and only 41 (34.7%) respondents reported that their knowledge of wound products was 'good' or 'excellent'. The majority (n=89, 75.4%) of respondents used the hospital's wound care specialist nurses as the primary source of information in regards to managing acute wounds.

**Conclusions:** Although acute care nurses have a sound knowledge of wound healing processes, it appears that many do not use the recommended clinical guideline pertaining to wound care.

**Relevance to Clinical Practice:** While it is important for nurses to detect early wound complications, treatment plans based on wound assessments need to be informed by current clinical guidelines. In implementing the guideline, it is essential to firstly identify barriers and facilitators to knowledge transfer.

**Key Words:** acute care; clinical guidelines; knowledge; practice; quantitative approaches; surgical nursing; survey; wound care.

***“The author(s) declare that they have no conflict of interests”.***

**What does this paper contribute to the wider global community?**

- Nurses' knowledge of wound healing reflects current theory; however, there are gaps in their knowledge in respect to evidence-based guidelines pertaining to acute wound care practice.
- There is a link between nurses' awareness and use of evidence-based clinical guidelines.
- Exploration of perceived barriers in clinical guideline uptake in managing acute wounds may assist to increase nurses' awareness and usage of these guidelines.

## Introduction

Between 187 and 281 million surgical procedures are performed around the world each year; equating to one procedure each year for every 25 people (WHO 2009). In Australia during 2011, 1.9 million elective surgeries were performed, representing an average increase of around 4% each year (AIHW 2011). Acute wounds include surgical incisions and traumatic injuries, such as lacerations, abrasions, avulsions, penetrations or bites, and burn injuries. Acute wounds that occur as a result of surgery are closed by approximation of the wound edges, thus heal by primary intention (NICE 2008). These wounds normally proceed through a linear and timely reparative process that culminates in restoration of anatomic and functional integrity (Lazarus *et al.* 1994). Naturally these wounds are at risk of surgical site infections [SSI], defined as infections up to 30 days after surgery and affect the incision, deep tissue at the operation site or involve the organs or body space (Mangram *et al.* 1999). In fact, SSI account for up to 30% of surgical procedures and occur in up to 14% of hospital acquired infections (NICE 2008). A study conducted in the United States found that 1% of 75,000 episodes resulted in an SSI (de Lissovoy *et al.* 2009). SSIs are associated with significant morbidity and over one third of postoperative deaths, at least in part, have been associated to SSI (Astagneau *et al.* 2001). SSIs can double the length of hospital stay and thus increase the costs of healthcare and inconvenience to the patient (Andersson *et al.* 2010, Astagneau *et al.* 2001, de Lissovoy *et al.* 2009).

The cost of wound care to the NHS has been estimated to be between £814 and £6626 million per year (NICE 2008). In the US, hospital costs are in excess of US\$900 million (de Lissovoy *et al.* 2009). In Australia, hospital acquired infections add about 17.3% to treatment costs (Jackson *et al.* 2011), which equates to approximately AU\$6.7 billion given

an estimated AU\$38.5 billion is spent on hospital services in Australia each year (AIHW 2010). Despite these high costs, management of acute wounds remains a crucial realm of nurses' clinical practice. There is a growing body of literature on the management of chronic wounds; yet, a paucity of research exists that describes nurses' knowledge and practices in regard to acute wounds. Appropriate management of acute wounds during the immediate postoperative period will reduce the risk of complications such as SSI, and prevent these wounds from developing into chronic wounds. This study sought to describe acute care nurses' knowledge and practices in wound management.

## **Background**

Over the past 30 years, scientific evidence has revolutionised changes in wound care practice from the traditionally held premise of dry to moist wound healing. While the notion of moist interactive wound healing is strongly advocated (AWMA 2010, Leaper *et al.* 2012, NICE 2008) its use in clinical practice remains variable (Drew *et al.* 2007). The shift to moist healing and the understanding that traditional wound products (e.g., gauze) do little to actively promote healing have informed contemporary wound care practice (Drew *et al.* 2007, Lazarus *et al.* 1994). The management of acute wounds, whether closed with sutures to heal by primary intention or left open to heal by secondary intention requires selection of a particular type of dressing based on an objective wound assessment (Drew *et al.* 2007, Nicks *et al.* 2010). There is an increasing number of dressing products containing antimicrobials such as honey, silver and cadexomer iodine available—nonetheless, there is little empirical evidence to support their efficacy in preventing SSI (NICE 2008).

The main purposes of a wound dressing is to allow appropriate post operative wound assessment, absorb exudates, ease pain and protect newly formed tissue (NICE

2008). Contemporary dressing products are designed to maintain a moist environment, without causing maceration to the surrounding skin as the dressing is permeable to moisture and gas (Drew *et al.* 2007). The choice of wound dressing can be difficult given the surge in the sophistication and sheer volume of materials available, and the specificity of the dressing type to the wound. A recent environmental scan revealed that availability of a wide range of dressing products was considered advantageous in wound management because healthcare professionals were given greater choice and could select the dressing product based on the patient's unique set of clinical needs (Gillespie *et al.* 2012). However, despite the wide range, clinicians do not always have the product-specific knowledge required to make an informed decision about which dressing is most suitable. Additionally, the availability of dressing product is largely controlled by hospital inventory and the choice, often driven by the surgeon's preference which may not always reflect current evidence and practice (Drew *et al.* 2007, Gillespie *et al.* 2012).

In performing wound dressings, there is continuing debate around two predominant dressing approaches taught to undergraduate nurses: Aseptic technique and wound field concept (i.e., 'clean' technique) (Bruen 2001, Ellis & Beckman 1997, Gillespie & Fenwick 2009). 'Aseptic' technique uses a non-touch method that has been assumed to promote healing and reduce the risk of infection (Bruen 2001, NICE 2008). Aseptic technique aims to prevent microorganisms on hands, surfaces and equipment. Accordingly, aseptic technique has been considered the gold standard approach. Nevertheless, it has been questioned whether aseptic versus clean technique influences the incidence of SSI (Bruen 2001, Gillespie & Fenwick 2009). In acute care and community settings, wound field concept has been advocated as a sound alternative to aseptic technique when performing wound

dressings (Ellis & Beckman 1997). The principle that underpins wound field concept is the recognition that wounds are, in themselves, unique micro environments that once exposed, are not sterile. Thus, contaminants of the patient and their wound will not further infect the wound. Only the addition of exogenous items introduced to the wound's surface, will cause further infection (Ellis & Beckman 1997). Some researchers emphasise that dressing technique has historically been based on ritualistic practices, rather than being principle-based (Bruen 2001, Gillespie & Fenwick 2009).

Another controversy in wound care pertains to the timing of the removal of a dressing during the post operative period (Mangram *et al.* 1999, NICE 2008). Beyond 48 hours, it is unclear whether an incision must remain covered with a dressing or whether showering or bathing is detrimental to wound healing (Mangram *et al.* 1999). It appears that early exposure of acute wounds is associated with an increased risk of contamination and SSI, yet some studies also suggest longer dressing periods have little benefit (Drew *et al.* 2007, NICE 2008). Presently, clinical guidelines generally recommend leaving the surgical dressing intact for up to 48 hours post operatively (Mangram *et al.* 1999, NICE 2008).

Clinical guidelines, standards and position statements relating to acute wound management have been published in the US, Europe and Australia (APWCA 2012, AWMA 2010, Leaper *et al.* 2012, Mangram *et al.* 1999, NICE 2008). In the US, the Centres for Disease Prevention and Control [CDC] (1999) provide recommendations for reducing SSI. Each recommendation is based on existing scientific data, a theoretical rationale, and contextual application. Recommendations encompass all aspects of clinical practice, from hand washing practices, antimicrobial prophylaxis to post operative incision care, and infection surveillance. The UK equivalent, the National Institute for Health and Clinical

Excellence [NICE] (2008) makes its recommendations using similar criteria to the CDC, and where possible, presents evidence from clinical trials. The Australian Wound Management Association [AWMA] has published standards that have been informed by the above-mentioned guidelines, which include wounds that are both acute and chronic in aetiology (AWMA 2010). Explicitly, these standards focus on the importance of clinical decision making in assessment and planning, accurate documentation, using a multidisciplinary approach to wound care, and wound care education and research. Clearly, good wound care practice requires a sound knowledge base.

In summary, there remains debate and uncertainty around some aspects of wound care in the acute post operative period. More specifically, the consequential changes that have revolutionised wound care practices have brought with them an explosion of dressing products that interact with the wound environment as opposed to merely being an inert covering over the wound. Indeed changes in wound care have significantly and necessarily impacted on the practices of acute care nurses. Undoubtedly, to provide appropriate surgical care to patients in the immediate post operative period, it is imperative that nurses have the requisite knowledge that reflects best practice. As a first step, it is important to describe nurses' current level of knowledge to glean insights into their clinical practices in wound management. The results of this study will provide a beginning foundation for developing interventions to improve the use of evidence in wound care practice.

## **METHODS**

### **Aim**

The aim of this cross-sectional study was to describe nurses' self-reported knowledge and practices in the management of acute wounds. **We did not intend to make group comparisons, only to describe, and therefore have not used a hypothesis testing approach.** In this study, an acute wound was defined as a wound that heals by primary intention—that is, where the wound edges are re-approximated using sutures, clips, or glue, either alone or in combination (Lazarus *et al.* 1994, NICE 2008).

### **Setting and Sample**

The setting for this study was a 450 bed metropolitan hospital located in Queensland, Australia that caters for all surgical specialties except cardiac and transplant surgeries. A convenience sample of 250 nurses practicing in seven wards, four surgical and three medical wards was invited to participate. The sample included both registered and enrolled nurses working in various clinical roles, and employed in either a full time or part time capacity. In this hospital, surgical patients were often admitted post operatively to medical wards when there were no available beds. Consequently, it was important those nurses working in medical wards be included because they were involved in the care of patients with acute wounds.

### **Survey Development and Data Collection**

Informed by previous literature on wound care practices and modalities (AWMA 2010, Gillespie *et al.* 2012, Mangram *et al.* 1999, NICE 2008, Nicks *et al.* 2010, Queen *et al.* 2004, Webster *et al.* 2012), the 42-item survey was divided into two sections, and included fixed choice categorical questions (yes/no) and items used a Likert rating scale (Appendix A).

The section of the survey that used a 5-point Likert responses asked respondents to rank their responses either using (1) most important through to (5) not at all important, or (1) always used through to (5) never used, to the questions specified. The first section included 35 questions on respondents' knowledge about wound healing processes, surgical site infection, surgical dressing products, and clinical guidelines pertaining to acute wounds. The remaining seven questions in the next section covered general demographic information to elicit age, years of nursing experience, nursing role, education level, and hospital division.

The questionnaire was piloted with five senior nurses, two of whom were wound care specialists. Three questions were removed because of ambiguity and limited relevance, and minor revisions were made to the wording of several of the remaining questions. Pilot data were not included in this study.

Following the pilot, survey packets were distributed in a manner that ensured respondents could complete the survey privately and anonymously. The study was presented and the survey distributed to respondents at staff meetings, and during shift handover. In an attempt to maximise the response rate, the survey was redistributed at a two week interval, impromptu individual and group inservices were given, and visits and telephone calls to Nurse Unit Managers and department educators was also carried out. The survey was conducted from August to September, 2012.

### **Ethical Clearance**

Institutional approval was given by the university and the hospital Human Research Ethics Committees. An information sheet explained the nature of the study and respondents

were assured of anonymity, that participation was voluntary and that they had the right to withdraw at anytime. Informed consent was implied by the return of the completed survey form.

## **Data Analysis**

The data were analysed using Predictive Analysis Software Statistics (Version 20; IBM, Chicago, IL, USA) for Windows (formerly SPSS). Descriptive statistics were used to describe the sample characteristics and impute survey item responses. The results were analysed using absolute (n) and relative (%) values for categorical data while **medians and interquartile ranges (IQR)** were used for continuous data. Some surveys returned contained missing data for several questions, however all surveys were included in the analysis.

## **RESULTS**

### ***Sample Demographics***

From a sample of 250 nurses, 120 surveys were returned yielding a response rate of 48%. The median age of respondents was 41.0 years (IQR 24.0 years) and ranged from 21 to 64 years. **Median** years of nursing experience across the sample was 10.5 years (IQR 21.0 years), with a range of 1 to 46 years. The majority of this sample identified as registered nurses (68.6%). Two thirds (64.4%) of respondents' highest qualification was at degree level and a modest 3.4% held masters qualifications. These and other demographic characteristics are detailed in table 1.

### ***Clinical Knowledge and Practice***

Respondents were asked to answer eight statements regarding the conditions needed for wound healing, classic signs of wound infection and factors that contribute to surgical site infection. Ninety-three (77.5%) respondents correctly identified that optimal wound healing required 'the provision of a moist warm environment', while 27 (22.5%) identified other factors. Ninety-six (80.0%) respondents correctly identified general signs of infection as, 'extending erythema, increased exudate, purulent discharge, malodour, and increased pain'. The overwhelming majority (n=117, 97.5%) of respondents correctly stated that poor hand washing practice, patient co-morbidities, and poor aseptic technique contribute to surgical site infections.

Respondents were asked to answer 10 categorical questions about their clinical practice and awareness/use of clinical standards. Respondents were asked whether they followed the *AWMA Standards of Wound Management* (2010). Fifty-nine (50.4%) respondents in this sample were 'unaware' of the national practice standard, while only 29 (24.8%) reported 'always' using these standards (figure 1). When asked when the surgical dressing should be removed for the first time, 51 (44.3%) respondents identified 'day 5 -7 post operatively' while a smaller 31 (27.0%) nominated the recommended time period of 'day 1-3'. These results are illustrated in figure 2. Nurse respondents were also asked about their perceived knowledge of acute wound care products. Forty-one (34.7%) respondents reported that their knowledge was either 'good' or 'excellent' (figure 3). Respondents were also asked to rank, in order of importance, the characteristics of the ideal wound dressing. Seventy-six (65.5%) respondents indicated that the most important characteristic was the ability of the dressing to remove excess exudate and toxins. Thirty-three (28.4%)

respondents indicated that visibility of the wound through the dressing was most important. These results are detailed in table 2.

Respondents were asked a series of questions about wound dressings, and ranked, in order of importance, seven listed factors that guided their choice of wound dressing. A large majority (n=90, 75.0%) of respondents stated that wound appearance was a highly important factor in determining the choice of dressing product. In contrast, only 6 (5.0%) respondents considered the cost of a dressing product 'highly important'. These results are displayed in table 3. Respondents were asked about the indications for use of negative pressure wound therapy (NPWT) to treat acute wounds. Most (n=104, 87.4%) respondents correctly identified that NPWT was used to 'stimulate granulation tissue formation, remove exudate and infectious material, and provide a closed moist wound healing environment'.

Respondents were asked to rank, in order of preference, seven listed primary sources of information they use for evidence-based wound care practices. The vast majority (n=89, 75.4%) of respondents 'always' utilised wound care specialist nurses in the hospital while a smaller number (n=14, 12.6%) of respondents used the world-wide web as a primary source of evidence-based information. These results are shown in table 4.

## **DISCUSSION**

To our knowledge, this is one of the only studies to describe nurses' knowledge and practices in acute wound care. In essence, these results indicate that there are practice gaps in nurses' knowledge in acute wound care, which is fundamental to providing safe and effective wound care. Our results suggest that nurses' knowledge on wound healing and

assessment reflects current theory. The majority of nurses in this sample were able to differentiate between the signs of infection and the signs of inflammation. Clearly nurses' ability to perform accurate, regular wound assessment is required to ensure that progress, or lack of progress in wound healing is quickly identified (AWMA 2010). Carville *et al's* (2004) earlier wound prevalence study suggests that comprehensive wound assessment practice reduces overall healing times and costs. While that study included other types of wounds (e.g., traumatic, chronic) and was conducted in the domiciliary setting, results nonetheless highlight the significant role that wound assessment has in patient outcomes. Undoubtedly, timely wound assessment is crucial in detecting wound healing complications (e.g., SSI, haematoma, dehiscence) in the immediate post operative period (NICE 2008). In the current study, the majority (73%) of nurses incorrectly identified the recommended post operative time period as being 1-3 days for dressing removal as per the guideline. This result is perhaps not surprising in light of the ongoing disparity in wound care practices. Other studies including a Cochrane review highlight contentious issues around criticality in the timing of dressing removal (Dumville *et al.* 2011, Nicks *et al.* 2010, Page & McCucheon 2004).

Of concern is the finding that only 50% of nurses knew about the national wound management guideline. This result may be indicative of the ward and/or organisational culture, which has been identified in previous research as a determinant of the uptake and use of clinical guidelines (Baker *et al.* 2010, Eccles *et al.* 2005, Sinuff *et al.* 2007).

Behavioural and organisational factors may either act as impediments or incentives to drive implementation and adherence to clinical guidelines. Indeed, implementing practice change in hospital environments remains one of the most vexing challenges, and there are often

more failures than successes (Wallin 2009). Some researchers assert that an 'enabling culture' is a way forward (Sinuff *et al.* 2007). Such a culture is characterised by shared knowledge and a regard for guidelines, and is essential to reducing practice variation and improving the quality of patient care (Sinuff *et al.* 2007).

To our knowledge, this is one of the few studies that have described the sources that nurses commonly use to obtain information on wound care practices. Notably, almost 75% of the nurses surveyed reported using the hospitals wound care specialist nurses as the primary source of wound care information rather than seeking information drawn from journals and specialist associations. This may be a consequence of several factors: First, the nurses working on the wards do not have ready access to the internet in their workplace. While acute care nurses in this study had access to localised wound management policies, these policies do not necessarily reflect the AWMA wound care guidelines. Second, many of the nurses surveyed are likely not financial members of the AWMA, and thus do not receive the most up-to-date information about contemporary wound care practices. Finally, the high accessibility of the hospital wound care team coupled with nurses' time constraints means that nurses are more likely to seek an immediate response to their wound care conundrums. Importantly, the accuracy and reliability of the information given by wound care specialist nurses is contingent on their behaviours and practices—which may not always be based on best practice.

Approximately 65% of nurses in this study reported that their knowledge of wound products was either 'satisfactory' or 'inadequate'. This result is may be expected given the explosion of wound care products that flood the market each year. The pace of evolving technology in wound care products makes it difficult for nurses to maintain current

knowledge of new developments (Gillespie *et al.* 2012). Research has tended to focus on interactive dressing products that are highly technical and expensive (e.g., silver, honey, and cadexomer iodine impregnated dressings) (Queen *et al.* 2004), yet these products encompass only a small portion of products used in the ward setting. Some argue that the selection of suitable post operative dressings is often under-rated, and the consequences of poor product choice have bearing on the timeliness of wound healing (Aindow & Butcher 2005). Yet, contention abounds not only in relation to the selection of dressing product, but also in regard to whether dressings are necessary at all in wound management. In their Cochrane review, Dumville *et al.* (2011) concluded that is no empirical evidence to support the role dressings have in reducing SSI rates in surgical wounds. Moreover, their results failed to demonstrate any clear advantage of one dressing over another in terms of improved wound healing, pain control or scarring (Dumville *et al.* 2011). Despite that warm, moist environments are beneficial to wound healing; there is no evidence to suggest that prolonged periods of wound exposure is harmful (Page & McCutcheon 2004). Clearly, if the wound fails to heal, expensive dressing products are a waste of money if the cause of the problem is not correctly identified.

In the context of the present study, that the majority of nurses preferenced their dressing choice based on wound appearance rather than on surgeon's preference, time constraints and cost, is an important finding. For this sample of acute care nurses, it appears that wound assessment is pivotal to informing the choice of dressing product. Wound assessment, using a holistic approach underpins effective and appropriate wound management, and is given much credence in clinical guidelines and other wound care literature (AWMA 2010, Ennis *et al.* 2005, Gillespie & Fenwick 2009, Holm *et al.* 1988, NICE

2008, Wu & Mustoe 1995). However, this sample's reported lack of knowledge on dressing products may be attributed to limited product availability and clinicians' reluctance to deviate from 'tried-and-true' dressing choices, albeit that some decisions are made in the absence of best available evidence (Gillespie *et al.* 2012). A simple interim strategy to assist nurses in choosing a suitable dressing from what is available from shelf inventory is to construct a wall chart that can be placed in the treatment rooms of each ward, listing the different dressing categories (e.g., hydrocolloid, hydrogels, alginates etc) and their applications to the types of acute wounds commonly seen.

### **Limitations**

We recognise that this study has several limitations. First, the single hospital may be different from other hospital sites in Queensland. Yet, this hospital is typical of other public hospitals in this region. Second, a response rate of around 50%, while reasonable, is less than ideal, and reduces the ability to generalise beyond the hospital from which the sample of nurses was drawn because of non-response bias. Finally, the data reported herein are based on self reported practices; and consequently, may not necessarily reflect actual practice.

### **CONCLUSIONS**

It appears that while nurses in this study had a sound knowledge-base of wound assessment and wound healing, they lagged behind in using clinical guidelines to inform other aspects of wound care practice. As acute wounds have the potential to become chronic in nature, it is essential that nurses be aware of, and follow best practice to ensure

optimal patient care. Nevertheless until barriers to guideline implementation are identified in the first instance, uptake will be slow.

### **Relevance to Clinical Practice**

The results reported here have implications for the implementation and uptake of wound management guidelines in the hospital setting. Our findings suggest that there is a link between nurses' awareness and use of the guideline, and some of the knowledge deficits identified in wound care. While accurate wound assessment is paramount to providing effective care, this alone will not benefit the patient with an acute wound—it is a single, but essential first step in the treatment plan. Clearly it is important for nurses to have the skills to detect early wound complications. However, treatment plans based on wound assessments need to be informed by the best available evidence. As a way forward, identification of departmental/organisational-specific barriers is crucial to facilitating behavioural change. Once the barriers are identified, implementation strategies tailored prospectively are more likely to improve professional practice than merely disseminating guidelines (Baker *et al.* 2010). Application of a one-size-fits-all approach will not address contextually-specific issues. Although part of implementation may necessarily include tailored clinical education, this strategy alone is not enough (Wallin 2009). Based on identified barriers, other implementation strategies might include open and consistent communication, informal champions, multidisciplinary collaboration, reminders and audit feedback (Sinuff *et al.* 2007).

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## TABLES

Table 1: Characteristics of nurse respondents (n\*=120)

Demographics	n*	%
Gender		
Female	103	85.3
Role Classification		
Enrolled Nurse	10	8.4
Registered Nurse	81	68.6
Clinical Nurse / Clinical Nurse Specialist	24	20.3
Nurse Manager	3	2.5
Highest Level of Education		
Certificate	11	9.3
Diploma	13	11.9
Degree	76	64.4
Postgraduate Certificate	8	6.8
Postgraduate Diploma	6	5.1
Masters Degree	4	3.4
Employment Status		
Part time	70	58.8
Full time	47	40.2
Hospital Division		
Surgical	37	31.9
Medical	33	28.4
Both	19	16.4
Other	27	23.3

\*Missing values not replaced

Table 2: Characteristics that make a surgical dressing ideal (n\*=120)

Characteristic	Highly Important n* (%)	Important n* (%)	Neutral n* (%)	Not very Important n* (%)	Not at all Important n* (%)
Removes excess exudate and toxic components	76 (65.5%)	30 (25.9%)	5 (4.3%)	1 (0.9%)	4 (3.4%)
Impermeable to bacteria	68 (58.1%)	24 (20.5%)	14 (12.0%)	6 (5.1%)	5 (4.3%)
Strong adherence	45 (38.1%)	31 (26.3%)	23 (19.5%)	9 (7.6%)	10 (8.5%)
High moisture vapour transfer rate	36 (32.1%)	36 (32.1%)	33 (29.5%)	4 (3.6%)	3 (2.7%)
Water resistance	35 (29.9%)	26 (22.2%)	34 (29.1%)	15 (12.8%)	7 (6.0%)
Visibility of wound	33 (28.4%)	26 (22.4%)	31 (26.7%)	17 (14.7%)	9 (7.8%)

\*Missing values not replaced

Table 3: Factors that influence the choice of surgical dressing (n\*=120)

Factor	Highly Important n* (%)	Important n* (%)	Neutral n* (%)	Not very Important n* (%)	Not at all Important n* (%)
Wound appearance	90 (75.0%)	21 (17.5%)	7 (5.8%)	1 (0.8%)	1 (0.8%)
Patient condition	57 (48.7%)	23 (19.2%)	17 (14.2%)	10 (8.5%)	10 (8.5)
Availability	43 (35.8%)	40 (33.3%)	28 (23.3%)	7 (5.8%)	2 (1.7%)
Surgeon's preference	37 (31.6%)	42 (35.9%)	25 (21.4%)	10 (8.5%)	3 (2.6%)
Water resistance	19 (16.4%)	34 (29.3%)	38 (32.8%)	19 (16.4%)	6 (5.2%)
Time constraints	7 (6.7%)	15 (14.4%)	35 (33.7%)	23 (22.1)	24 (23.1%)
Cost	6 (5.0%)	12 (10.0%)	39 (32.5%)	21 (19.1)	32 (29.1)

\*Missing values not replaced

Table 4: Information sources used in relation to dressing products (n\*=120)

Information source	Always Used n* (%)	Often Used n* (%)	Sometimes Used n* (%)	Rarely Used n* (%)	Never Used n* (%)
Hospital Wound Care Specialist Nurses	89 (75.4%)	18 (15.3%)	6 (5.1%)	2 (1.7%)	3 (2.5%)
Hospital policies and Procedures	70 (60.7%)	25 (21.8%)	12 (10.0%)	6 (5.1%)	3 (2.6%)
Journal articles on Hospital website	40 (36.4%)	22 (20.0%)	24 (21.8%)	12 (10.9%)	12 (10.9%)
Australian and/or European Wound Care Association	23 (20.7%)	26 (23.4%)	34 (30.6%)	19 (17.1%)	9 (8.1%)
Representatives from wound product manufacturing companies	19 (16.5%)	26 (22.6%)	47 (40.9%)	13 (11.3%)	10 (8.7%)
Hospital library	19 (17.3%)	17 (15.5%)	28 (25.5%)	23 (20.9%)	23 (20.9%)
World wide web (i.e., Google)	14 (12.6%)	23 (20.7%)	24 (21.6%)	21 (18.9%)	29 (26.1%)

\*Missing values not replaced

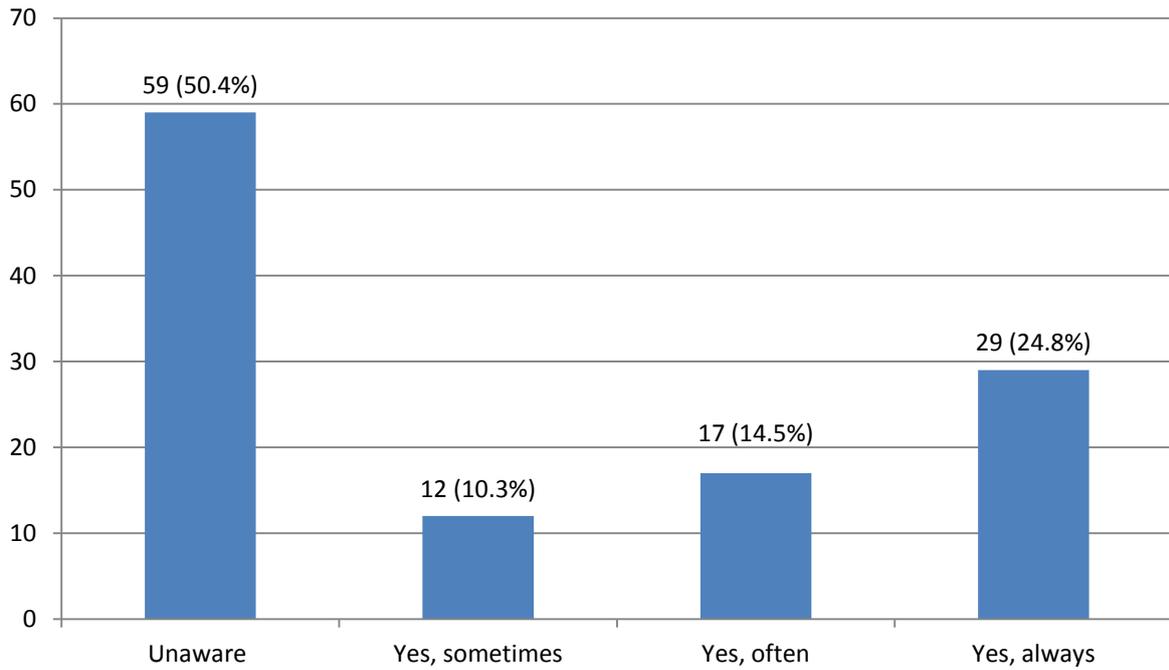


Figure 1: Bar graph showing use of national wound management guidelines (n=117\*)

\*Missing values not replaced

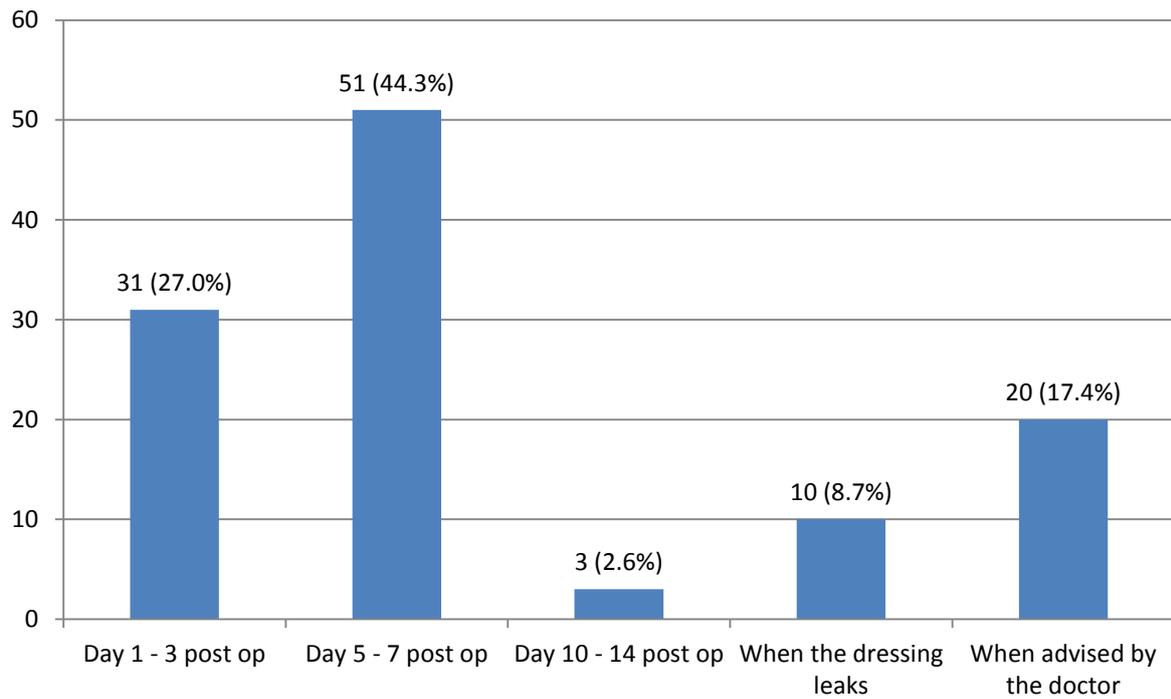


Figure 2: Bar graph showing frequencies of response for first time dressing removal (Day ... post op) (n=115\*)

\*Missing values not replaced

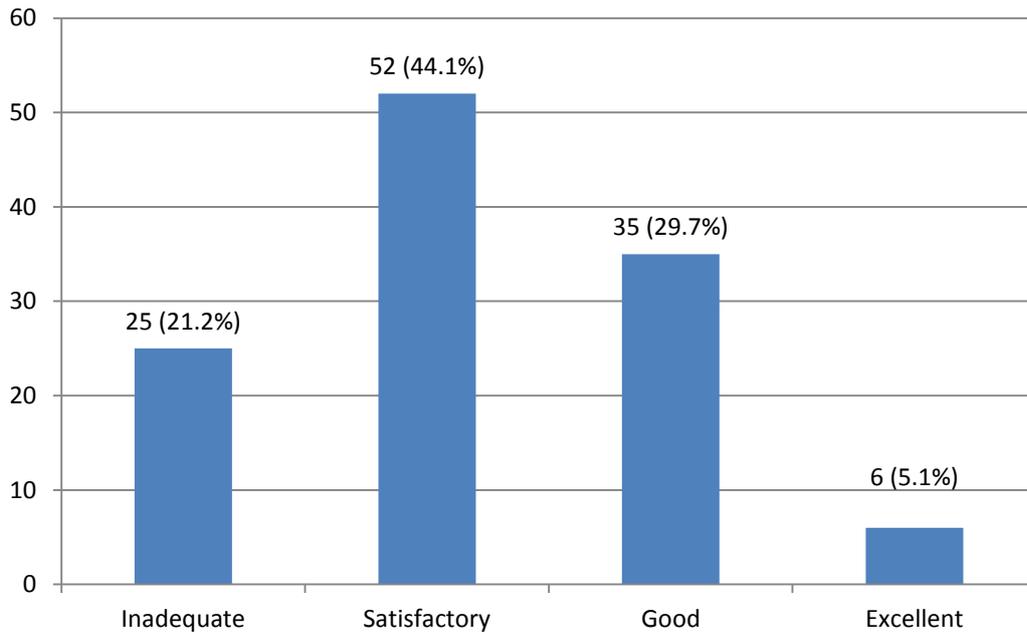


Figure 3: Bar graph showing nurses' perceived knowledge of dressing products (n=118)

\*Missing values not replaced