



Original research

## Setting the surgical wound care agenda across two healthcare districts: A priority setting approach



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### ABSTRACT

**Introduction:** Surgical wound care requires an interprofessional approach; however, there is considerable variation in practice and a lack of robust evidence to guide clinicians. Thus, it is important to identify priority areas from the perspectives of end-users to target efforts to both generate and implement high quality evidence.

**Objective:** To rank the top four priority questions in wound management across two health districts to inform future research and implementation efforts in wound care.

**Methods:** A multisite modified nominal group technique was used to build consensus. Two interactive two-hour workshops were held across two health services districts. Participants were recruited from nursing, allied health and medicine. In preparation for the workshops, a standard operating procedure was developed, and 25 wound care priority questions identified, a priori. Descriptive statistics were used to analyse workshop data.

**Results:** Across districts, 38 health professionals participated in the workshops. From a list of 25 clinical questions, the top 10 were determined, and from these, the top four. The number one priority question identified by 23/38 (60.5%) participants across districts related to patients' understanding/knowledge of their wound treatment. The number two priority question 15/38 (39.5%) participants voted on focussed on patient involvement in wound care.

**Conclusions:** Overall, the priority questions reflect the need to encourage patient participation in wound care. These wound care priorities can be used to inform future research and improvement efforts in wound care.

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### Summary of Relevance

#### Problem or Issue

There is considerable variation between clinical recommendations and what is observed in day-to-day surgical wound care. However, little is known about the research priorities that are important to bedside clinicians in providing evidence based surgical wound care.

#### What is Already Known

Understanding priorities helps stakeholders and researchers target areas of research and implementation need.

#### What this Paper Adds

The priority questions identified by clinicians reflect the need to encourage patient participation in surgical wound care. Future research is needed to identify strategies that increase patients' knowledge and understanding, patient participation, and wound care education and decision-making in surgical wound management.

## 1. Background

Worldwide, an estimated 4,511 operations per 100,000 population occur annually, equating to one surgical procedure each year for every 22 people (Surgeons, 2019). This equates to approximately one operation for every 25 people. In Australia, in 2016/17, one in four hospitalisations involved a surgical procedure (Australian Institute of Health and Welfare, 2018). Most acute wounds that occur as a result of surgery heal by primary intention; an incision closed primarily by fixing the edges together with sutures, staples, adhesive glues, or clips (World Health Organization, 2016). However, some surgical wounds may be left open to heal due to infection risk, or significant loss of tissue. Healing occurs through the growth of tissue from the wound base upwards, a process described as secondary intention (NICE, 2008).

Surgical wounds are the most common wounds seen in hospitals and if not managed appropriately, are at increased risk of surgical site infection (SSI). Yet, their management remains an area with considerable variation in practice (Gillespie, Chaboyer, Kang, et al., 2014). A lack of robust evidence, confounded by a plethora of product choice (Gillespie, Chaboyer, Nieuwenhoven, & Rickard, 2012), complex patient needs and fragmentation of care, creates challenges in treating wounds (Gillespie, Chaboyer, St John, Nieuwenhoven, & Morley, 2014). The findings of previous research suggest that there are significant differences between recommended practices and what is actually observed in day-to-day surgical wound care (Ding, Lin, Marshall, & Gillespie, 2017; Chaboyer, St John et al., 2014; Gillespie et al., 2012). Further, busy health professionals are often unaware of the research evidence that exists (Gillespie, Chaboyer, Allen, Morely, & Nieuwenhoven, 2013), and the clinical challenges they identify represent important opportunities for research and implementation.

Knowing what priorities are important to health providers as end-users, matters. Research priority-setting partnerships provide an opportunity for the equitable participation of end-users, which can improve the relevance, quality, and implementation of research (Crowe, Fenton, Hall, Cowan, & Chalmers, 2015). Formal priority setting for areas of knowledge generation and translation is needed to target gaps in treatment and services (Chalmers et al., 2013). In this way, ownership of research findings is fostered and is more likely to promote meaningful translation of findings into clinical practice and service delivery. Understanding priorities helps stakeholders and researchers target areas of research and implementation need. In wound care there are many evidence-practice gaps, thus it is important to identify priority areas from the perspectives of end-users to address the most critical gaps. Previous pilot research in surgical wound management indicates that there

is scope to improve current practices (Ding, Lin, & Gillespie, 2016; Ding et al., 2017; Lin et al., 2018).

### 1.1. Aim

The current study reports the results of two consensus-building workshops in which the aim was to identify health professionals' perceived surgical wound care priorities that would inform future research and implementation efforts in wound care. In this study, we used the aforementioned definition developed by the World Health Organization (2016) to define surgical wounds.

## 2. Methods

### 2.1. Design

We used a consensus-building approach to rank healthcare professionals' four most important priority questions in acute and complex wound management. Underpinned by action research, we used a modified nominal group technique (NGT) to develop consensus in two 2 hr priority setting workshops. In NGT, data is systematically collected from all participants resulting in contributions from all, reflecting a myriad of views (Harvey & Holmes, 2012). NGT allows rich discussion and debate, termed 'structured brainstorming', which generates new research questions, identifies solutions, and establishes priorities for action (Asmus & James, 2005; Harvey & Holmes, 2012; Potter, Gordon, & Hamer, 2004). The collaborative nature of NGT increases stakeholders' ownership of the resultant research, and so increases the likelihood of changing clinical practice and policy (Vella, Goldfrad, Rowan, Bion, & Black, 2000).

In this study, the protocol for conducting NGT was modified based on guidance by Potter et al. (2004). The steps we followed are listed below:

- 1 Introduction and explanation;
- 2 Silent ranking of priority questions;
- 3 Ranking priority questions in a series of oral round robins; and
- 4 Group discussion, clarifying and identifying practice/research gaps in the priority list.

### 2.2. Development of priority questions

A list of 25 clinical questions was generated based on the wound care literature (Ding et al., 2016; Dumville et al., 2016; Gillespie, Chaboyer, St John et al., 2014), available clinical practice guidelines (Anderson et al., 2014; National Institute for Health & Care Excellence, 2013; World Health Organization, 2016) and the clinical expertise of several research team members who were wound care practitioners. Over a series of meetings, the research team discussed the questions, and made minor revisions to several questions to ensure clarity. Questions covered the following five areas of surgical wound care practice; *information/evidence sources, patient involvement, cost effective strategies, wound care education, and wound assessment and documentation*. Five questions were included in each area of wound care practice. As the target audience for the NGT workshop was practising clinicians, it was important to frame the questions from a clinical perspective rather than presenting them as research questions.

### 2.3. Setting and recruitment of participants

This study was set in two tertiary referral hospitals, 70 kilometres from each other in Queensland, Australia. Hospital A had 750 beds, with 8 surgical units and performs approximately 18,000

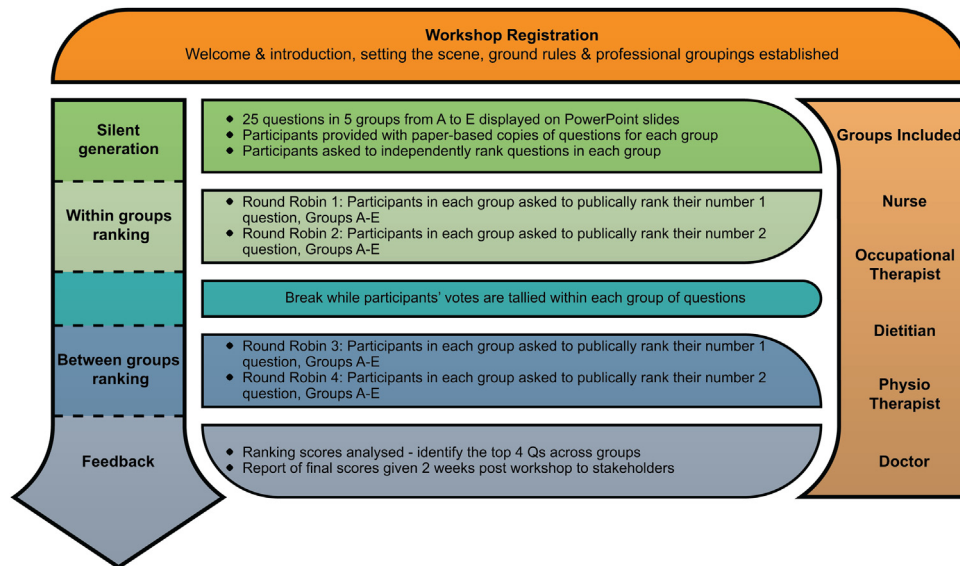


Fig. 1. Schematic of workshop processes.

surgeries per year. Hospital B had 550 beds, with 11 surgical units and performs roughly 21,000 surgeries per year.

We used several recruitment strategies, which included one or more of the following: staff email, screensavers notifications on hospital computers, and discussion of the study at senior nursing and allied health level meetings, and ward walk-arounds. Health professionals who were directly responsible for bedside patient care were made aware of the study using an 'Expression of Interest' process. Health professionals who: had at least one year of experience post qualification, regularly cared for patients with acute and/or complex wounds or were wound specialists or managed wound care services were eligible to participate. Students were excluded. Additional participants over and above the recommended total number of 12 participants per NGT session as suggested by Potter et al. (2004) were invited to allow for withdrawals.

#### 2.4. Ethics approval

Approval for the study was given by the university (HREC/2017/723) and hospital (HREC/17/QGC/235) Human Research Ethics committees. On the day of the workshops, participants completed a brief demographic profile and signed a consent form.

#### 2.5. Data collection

Prior to the workshop, all research team members worked from a standard operating procedure developed in advance and shared during a preparatory training session, involving a workshop mock-up. The first named author facilitated the workshops and four other team members provided administrative support. Prior to commencement of each workshop, participants were given written information about the study, the objectives of the workshop, and the level of involvement. They were also advised that the 2 hr session would be audiorecorded to capture the discussion and they were required to provide informed consent. Fig. 1 presents the workshop processes.

Each workshop began with the first step in the workshop process, viz, a brief introduction followed by an explanation of the purpose of the workshop. We used a modified NGT to allow for the time constraints; rather than using a silent generation of ideas, participants

were presented with a workable list of priority questions in groupings from A to E (5 questions per group, with 25 questions in total). During the silent generation stage, participants were asked to rank questions in each group, from "1" being the most important, through to "5" being the least important in priority. To allow participants time to consider these independently, priority questions were also printed on A4 sheets and given to participants.

Following participants' private ranking of priority questions, a total of four round robins were undertaken. The first two round robins focused on ranking *within groups of* questions. During round robins 1 and 2, participants were asked to publicly rank their "number 1 question" and their "number 2 question" within each group (A-E) of five priority questions and encouraged to state *why* they chose the question. Ranking during round robins 1 and 2 were recorded on butchers' paper and affixed to a whiteboard at Hospital A, or entered into a spreadsheet and displayed via a screen at Hospital B (see Fig. 2a). After the first two round robins, we asked participants to break for 10 minutes (with refreshments served) while team members calculated the top two priority questions in each group (A-E), based on tallies. In the second half of the workshop, round robins 3 and 4 focused on ranking priority questions across *groups of* questions (see Fig. 2b). During these next two round robins, participants were asked to rank the top four priority #1 questions (1A and B), and top four priority #2 questions (2A and 2B). Once scoring was complete, priority questions in each of the five groups were ranked and checked by a member of the research team prior to presenting to workshop participants. After rankings were finalised, participants were asked if any important clinical problem/question was missed, or if there were any gaps in the results.

#### 2.6. Data analysis

For each workshop, the prioritised lists of questions for each category were entered in Microsoft Excel 2016 for real time recording. Following the workshops data were analysed using descriptive statistics. Demographic characteristics of participants were analysed in SPSS (IBM, version 24, NY) using frequencies/percentages and medians/interquartile range (IQR) depending on the level of the data.

	ROUND ROBINS 1	COUNT	ROUND ROBINS 2	COUNT
Q1		3		3
Q2		1		4
Q3		3		5
Q4		4		0
Q5		8		6

(a) Round Robins 1 and 2 for 'Group A' questions

	ROUND ROBINS 3	ROUND ROBINS 4
GROUP A #1		
GROUP B #1		
GROUP C #1		
GROUP D #1		
GROUP E #1		

(b) Round Robins 3 and 4 - #1 priority questions

Fig. 2. (a and b) Examples of tallies of 4 round robins across a group of 5 questions and the final rankings of priority questions at Hospital A.

### 3. Results

#### 3.1. Participant characteristics

Across the two districts, a total of 38 health professionals from nursing, allied health and medicine attended the workshops. Reasons for non-attendance included work commitments and illness. In total, 3/38 (7.9%) participants were male. The average age across the samples was 44.2 years (range 24 to 61 years). Across the whole sample, 11/38 (28.9%) participants held Masters degrees. Table 1 shows the breakdown of attendees' demographic characteristics for each hospital site.

#### 3.2. Priority setting

Of the 25 priority questions, the top four questions in each workshop were ranked (see Table 2). The number one priority question identified by 23/38 (60.5%) participants across both districts was 'How does the patient's understanding and/or knowledge affect the care of their surgical wounds?' The number two priority question(s) 15/38 (39.5%) participants voted for were two questions that focussed on patient involvement in wound care. We broadly categorised the top four priority questions into three themes; *patients' knowledge and understanding*, *patient participation in wound care*, and *education and decision-making*. Participants stated that wound care should: involve patients, be evidence-based, use a holistic

Table 1  
Participant characteristics (N = 38).

Demographic Characteristic	Hospital A n = 19 <sup>a</sup> Median (IQR)	Hospital B n = 19 <sup>a</sup> Median (IQR)
Age (years)	42.0 (27.0)	46.5 (23.0)
Years of clinical experience	4.0 (7.0)	11.0 (21.3)
Gender	n (%)	n (%)
Male	2 (10.5)	1 (5.2)
Discipline/Role		
Endorsed Enrolled Nurse	2 (10.5)	2 (10.5)
Registered Nurse	10 (52.6)	16 (84.2)
Occupational Therapist	2 (10.5)	0
Physiotherapist	3 (15.7)	0
Dietitian	0	1 (5.2)
Physician	1 (5.2)	0
Highest level of qualification		
Certificate/Diploma	2 (10.5)	3 (16.7)
Bachelor's degree	9 (43.3)	7 (38.9)
Graduate Certificate	3 (15.7)	4 (23.3)
Master's degree	7 (36.4)	4 (23.3)
PhD	0	0

<sup>a</sup> Some missing data.

approach, use standardised documentation, and be undertaken by health professionals with the appropriate clinical skills.

### 4. Discussion

The aim of this study was to identify the top four wound care priorities across two health service districts. The approach we used to achieve stakeholder engagement was consultative and consensus-based. We sought a process of hearing the views of workshop participants equally and encouraged respectful and collaborative dialogue among all participants. The inclusion of front-line clinicians in the prioritising process reflects the national quality and safety agenda for end-user involvement in research (Australian Commission on Safety & Quality in Health Care, 2017). Participation of end-users in the research process is more likely to enhance the relevance of the findings and facilitate its uptake among clinicians who are in essence, research consumers (Crowe et al., 2015). Clearly, consumer collaboration and consensus is required to better align research with the priorities of end-users (Chalmers et al., 2013; Crowe et al., 2015).

Based on the priority questions participants ranked highest, group themes, *patient's knowledge and understanding* and *patient's participation in wound care*, reflect the importance of a core component of patient participation; that is, sharing information and knowledge (Sahlsten, Larsson, & Sjöström, 2009). The top question identified in both hospitals was: "How does the patient's understanding and/or knowledge affect the care of their surgical wounds?" The fourth placed questions by Hospitals A and B respectively were: "What role does the patient play in post-operative surgical wound care?" and, "In what ways can nurses help patients become involved in their wound care?" Sahlsten et al.'s (2009) well cited concept analysis identified that participation requires meaningful information and knowledge exchange between patients and nurses. The priority questions identified by workshop participants align with the Australian National Safety Standards; namely, *Standard 2, Partnering with patients in their own care* (Australian Commission on Safety & Quality in Health Care, 2017). Perhaps the recent change in National Safety Standards, alongside widespread adoption of these standards by the two study sites, increased participants' awareness and appreciation of the importance of patient participation and decision making in clinical care. Importantly, internationally, these priority questions corroborate the results of a recent global survey of patients and



**Table 2**  
Top ranked 4 priority questions for each hospital district.

Hospital A (n = 19)		Hospital B (n = 19)	
Top 4 Priority Questions	n (%)	Top 4 Priority Questions	n (%)
* How does the patient's understanding and/or knowledge affect the care of their surgical wounds?	13 (68.4)	* How does patients' understanding and/or knowledge affect the care of their surgical wounds?	10 (52.6)
How are decisions made in surgical wound care?	12 (63.1)	What role does the wound care team play in evidence-based surgical wound care?	8 (42.1)
What principles should be used to guide the education staff given to patients about surgical wound care?	10 (52.6)	What wound care information should be documented in the patient's medical record?	11 (57.8)
x What role does the patient play in postoperative surgical wound care?	7 (36.8)	x In what ways can nurses help patients become involved in their wound care?	8 (42.1)

**Group themes:** \*patients' knowledge and understanding; x patient participation in wound care, education and decision making.

carers relating to pressure injury – education was respondents' top priority (Haester, Cuddigan, Carville, & Group, 2019). However, current research shows that nurses did not always involve patients in their surgical wound care (Lin et al., 2018). Clearly involving consumers in health research that occurs within the health service gives increased transparency and accountability (McKenzie, Bulsara, Haines, Hanley, & Alpers, 2016). Future researchers could focus on undertaking in-depth interviews with health consumers and their families who have experiences with acute and complex wounds to understand their perspectives on priorities ranked in the consensus building workshops.

The third group theme, *education and decision making* is based on the priority questions ranked by Hospital A participants, “How are decisions made in wound care” and “What principles should be used to guide the education staff given to patients about wound care?” Selection of these questions suggests that participants lack confidence or guidance in providing wound care. While this may be true more broadly, few studies have examined decision-making in wound care. Findings of these qualitative studies suggest that decision making is informed by ‘practice-based knowledge’ rather than being based on evidence, the idea of novice versus expert decision-making, and the salience of making the ‘right decision’ (Gillespie, Chaboyer, St John et al., 2014; Hallett, Austin, Caress, & Luker, 2000; Lamond & Farnell, 1998). The complexity of the decision-making and the influence of the clinical environment on nurses' decision-making is well described (Gillespie, Chaboyer, St John et al., 2014; Hallett et al., 2000; Thompson, Cullum, McCaughan, Sheldon, & Raynor, 2004). For instance, despite having online access to evidence based resources, nurses may still chose to use what has been ‘proven’ to work in the past (Gillespie, Chaboyer, St John, et al., 2014; Thompson et al., 2004). Priority questions around decision-making require further exploration.

In terms of the third theme, Hospital B participants were more concerned with “What role does the wound care team play in evidence-based surgical wound care?” and “What wound care information should be documented in the patient's medical record?” suggesting they want more clarity on how health care teams can work more effectively in wound care. Results of earlier research using retrospective chart audits indicated a lack of consistency, accuracy and completeness in the information documented in patients' medical records (Gartlan et al., 2010; Gillespie, Chaboyer, Kang, et al., 2014; Keast et al., 2004). In another study, 75% of surgical nurses surveyed reported using the hospital wound care specialist team as their primary source of information (Gillespie et al., 2013). It appears that little has changed since the publication of these earlier studies: The results of the current study suggest there remains confusion around what information should be documented (to ensure the whole care team has access to the relevant information), and how the wound care team can be used to deliver evidence-based practice.

Notably in this study, the priority questions were not written as ‘research’ questions per se; rather, we avoided using jargon to ensure they were easy to understand, reflecting a more pragmatic and clinical focus. The priority questions differed in focus and scope and were informed by previous research in wounds and expert feedback from clinician collaborators. For instance, the wording and language used to frame the questions may necessarily change as they are further refined to become research questions. In refining the priority questions, more specific wording (e.g. incorporating outcome measures) will be needed. Thus, future work is needed to map the questions against published and ongoing research and systematic reviews prior to identifying questions that address gaps in the evidence, and the priority questions may undergo refinement using the PICO criteria and their feasibility.

#### 4.1. Limitations

We recognise some limitations with using a modified NGT approach. First, as the sample was drawn from two public hospitals in one Australian state, limits the extent to which results may be generalised. Nonetheless, these hospitals are typical of many tertiary facilities. Second, males, physicians and allied health professionals were underrepresented; workshop attendees were predominantly nurses. Thus, there may be a potential bias due to the self-selecting nature of the sampling. Yet nurses provide the bulk of wound care (Gillespie et al., 2019). Third, we recognise that individuals were self-selecting, and inevitably may promote a personal or institutional perspective. Still, this was to some extent mitigated by achieving maximum variation in recruiting health professionals from different clinical areas. Fourth, differences in priority questions based on discipline/role could not be determined because the workshops were designed to develop consensus and not planned to detect differences attributed to discipline and other demographic characteristics. Fifth, we presented participants with an *a priori* list of questions rather than using a silent generation of ideas. As such, a modified NGT was used to integrate with the workloads and time constraints of participants. Finally, there is the possibility that some participants may have been reluctant to contribute during the workshops. Notwithstanding, NGT is recognised as a method to prevent “social loafing” (Asmus & James, 2005).

#### 5. Conclusions

In this study, we used a consensus building approach to rank priority questions in wound care that are important from clinicians' perspectives. These interactive workshops represent small steps in an endeavour to drive clinically focussed research to answer questions of immediate relevance and importance. Future research in wound management could focus on developing answerable ques-

tions that address patients' knowledge and understanding, patient participation, and wound care education and decision-making.

### Ethical statement

Approval for this human research of negligible to low risk was given by Griffith University (HREC/2017/723) and the Gold Coast University (HREC/17/QGC/235) Human Research Ethics committees. The study complies with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for reporting observational studies.

### Conflict of interest

The authors declare no conflict of interest.

### Author agreement

- the article is the author(s) original work.
- the article has not received prior publication and is not under consideration for publication elsewhere and all authors have seen and approved the manuscript being submitted.
- the author(s) abide by the copyright terms and conditions of Elsevier and the Australian College of Nursing.

### CRediT authorship contribution statement

The paper properly credits the meaningful contributions of co-authors and co-researchers.

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