

Improving wound management outcomes in residential aged care

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The project was supported by an educational grant from Paul Hartmann Pty Ltd.

ABSTRACT

There is a well-documented need for alternative care models for wound management that achieve the desired outcomes for residential aged care residents utilising less qualified staff members. This small project used nurses' knowledge of wound management, patient wound outcomes and product usage to explore if increased knowledge and limited product availability could demonstrate an improvement in wound management.

Aim

The project used a sample of qualified nurses to explore if wound management outcomes could be improved in residential aged care by providing a program of education and a standardised wound management product/s.

Method

A three-phase method was implemented.

Phase 1 Prospective assessment

Nurses' knowledge of wound assessment and product selection was assessed using an online survey and wound photo flash cards. Current wound management practice was established using an audit of the medical record of the aged care residents in the two nominated aged care facilities.

Phase 2 Intervention

Face-to-face wound assessment, management and product choice education was offered to all nurses and a limited stock of wound management products were made available for resident wound management.

Phase 3 Retrospective assessment

Evaluation of the nurses' knowledge using the same online survey and wound photo flash cards. Retrospective audit of resident wound management documentation (now electronic — LeeCare™) was undertaken.

Results

Resident medical notes indicate a reduced time to heal in skin tears and pressure injuries following the intervention. Although product utilisation was documented as varied there was some indication that the dressings selected were appropriate for skin tears and within best practice guidelines. The pre-intervention survey of nursing knowledge demonstrated a high level of confidence and knowledge.

Conclusion

An inconsistent approach to wound management was demonstrated in those medical records reviewed.

The knowledge assessment of qualified nurses working in the two nominated residential homes indicated both an awareness of best practice wound management and a high level of wound management confidence.

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wound management and a high level of wound management confidence.

The medical records audit post intervention showed a reduced rate of incidence of skin tears and pressure injuries which may equally be attributed to absent documentation as well as the intervention. It should also be noted that the actual system of documentation changed from hard copy to electronic (LeeCare™) during the duration of this project

If residential aged care is to move to a less qualified workforce using protocol-driven practice then qualified staff will have to ensure documentation is appropriate and complete. It would seem that further work in this area of regulatory compliance is needed prior to any future projects being undertaken.

Keywords: wound management, wound documentation, product choice.

INTRODUCTION

Predicted increases in health care demands generated by an ageing population have focused the attention of health care providers and governments across the globe. It is becoming increasingly apparent that the number of qualified health care professionals required to provide the necessary health care services cannot be met. The shortage of trained health care professionals will be most keenly felt in settings where chronic staff shortages are traditional. Residential aged care is such a setting. If increased demands for health care services in this area are to be met, alternative care provision models will need to be explored^{1,2}.

Wound management in residential aged care facilities provides an ongoing challenge. Frail skin, deteriorating muscle/body mass and changes to cognitive function predispose this client group to skin tears and pressure injury³. The management of such injuries requires an understanding of contemporary wound management practices and predicative strategies. This skill set is missing in the large population of semi- or unskilled workers found in residential aged care.

This paper details the findings of a pilot project aimed at examining a model of care that provides clinical decision support for skilled, semi-skilled and unskilled health care workers in an effort to improve wound management in this sector. Vu *et al.*⁴ demonstrated in 2007 with a similar geographical cohort that a cost reduction in wound

management can be achieved with a multidisciplinary team approach, and this project aims to augment that work. Known as the Hartmann Wound Management Improvement Strategy (HWMIS), the system was comprised of a standardised formulary of wound management products plus a course of wound management education. The project was a collaboration between The School of Nursing and Midwifery, La Trobe University, Paul Hartmann Pty Ltd and the owner-operator of residential and aged care facilities in metropolitan Melbourne. Aspects of this project have been supported by a grant made available to the researcher by Hartmann and administered by La Trobe University.

The project: 'The influences of a wound and skin management system on wound outcomes in two metropolitan Melbourne aged care facilities' is approved by La Trobe University Ethics Committee; application no; FHEC 12/32.

AIMS OF THE PROJECT

This descriptive study aimed to:

1. evaluate wound management outcomes for residents of an aged care facility before and after the introduction of a wound management improvement strategy
2. establish a baseline of wound assessment knowledge of registered nurses employed in two nominated aged care facilities.

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DEFINITIONS

For the purposes of the project:

- Wound management outcomes were defined as product utilisation patterns and episodes of care.
- Wound assessment knowledge was defined as the ability of a nurse to correctly assess a wound, determine a course of treatment and evaluate their care for a given case study.
- Standardised product inventory: the majority of residential aged care facilities often have an array of wound management products available. This can result in duplication of product type (that is, foam, film, gels) and contribute to potential confusion for the clinician. A standardised product inventory provides one item of each dressing type, often, but not exclusively from a single manufacturer. For this project the Hartmann suite of wound management products was selected.
- Course of wound management education: provided as a short course, the content covered basic anatomy, wound assessment and documentation and encompassed product choice for skin tears and pressure damage to skin integrity. This intense, two-hour education was delivered by a third party with no investment in this project. The lecture was offered on three separate occasions across both nominated sites of the project. A total of 19 qualified staff completed the education of a potential 65.

In addition, participating nurses were offered a one-hour wound product choice and product application lecture delivered by Hartmann personnel endorsed by the Australian College of Nursing (formally the Royal College of Nursing). This session was wound-specific and tailored to developing skills in clinical management of both pressure injury and skin tears.

DATA COLLECTION

The product utilisation patterns and the knowledge of the participating clinicians were examined before and after the implementation process. To manage associated risks, the pilot project examined the knowledge and wound management practice of *qualified* staff, specifically a sample of registered nurses (n=19). It is anticipated that the findings of this pilot project will become the basis for further studies in the area of wound product implementation in residential/aged care facilities.

Wound outcomes were examined using a retro- and prospective review of medical records (pre n=21/post n=6). Product utilisation was defined as the type of product used, and the classification of the product as either primary or secondary. An episode of care was defined as a documented wound management intervention (for example, dressing change) the medical record audits were conducted before and after the implementation of the wound management improvement strategy.

A convenience sample of qualified nurses (n=65) working within the nominated residential facilities was invited via a written offer to participate in this project; 19 accepted. Their consent to participate in

the study was implied with their voluntary completion of the online survey and anonymous withdrawal from study was made available via written and electronic methods. To help reduce the influence of confounding variables (for example, clinician experience, client co-morbidities) the project focused on the wound management knowledge and wound product choice for two types of acute wounds routinely experienced by elderly patients: pressure injury and skin tears. Whilst it is not an assessment scale for established pressure injuries, the Braden Scale was used to assess pressure injury and skin tears classified with STAR system. The sample was drawn from two separate residential aged care facilities.

Wound management and skin integrity knowledge

An audit of the nurses' knowledge was completed via:

- Survey Monkey™ short questionnaire using case studies and multiple-choice questions. Thirty-six questions took approximately 30 minutes to complete.
- Viva voce using wound photo flash cards. The qualified nurses were offered six laminated wound photographs of actual wounds (e.g. Flash card photo A) then asked to write in free text their personal product of choice to treat the wound. Each clinician completed this task independently and was asked to select products for the wound management plan from the Hartmann range, with which they were familiar.



Flash card photograph A

Information derived from the above surveys was used to design a comprehensive, two-hour, face-to-face lecture that comprised the wound management short course.

All education was made available on both sites of the study at times nominated to be convenient by the care managers. The sessions were advertised in advance and attendance of the clinical staff encouraged by senior management.

All results were analysed using descriptive statistics generated via SPSS™ analysis system 2012 (Version 20.0, IBM Standard Grad Pack; 1160YP2197041529).

WOUND MANAGEMENT OUTCOMES

Product selection

Prior to the implementation of the Hartmann wound management improvement strategy, wound product selection patterns demonstrated a degree of variability. When the product selection patterns from the existing inventory were examined prior to the intervention, some 13 different products were cited (Figure 1). Following the implementation of the wound management improvement strategy, product utilisation decreased to a selection of seven products (Figure 1).

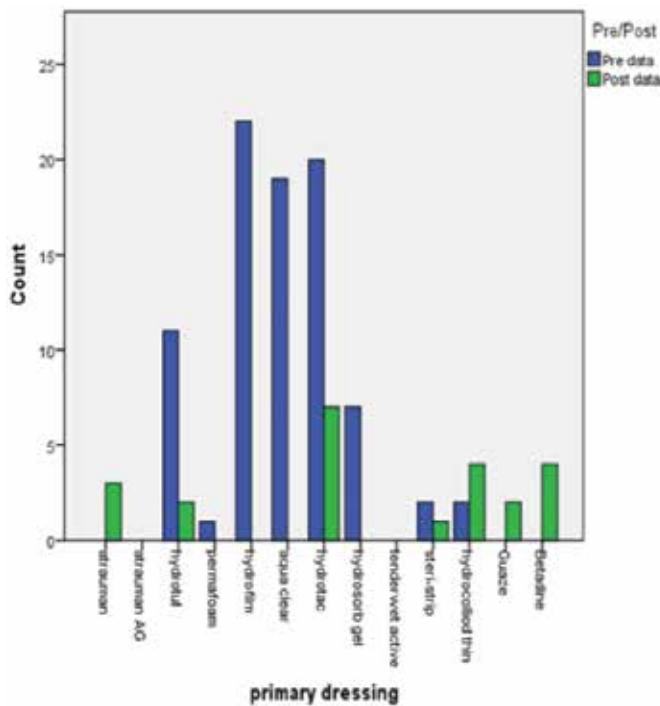


Figure 1: Frequency of primary dressings cited

A similar trend was evident in the data pertaining to wound cleaning products and primary wound contact products such as betadine and Silversulfadiazine (SSD) cream. Prior to the implementation, a total of five products were cited. This decreased to three post implementation.

The selection of a secondary dressing demonstrated the same downward trend. Prior to implementation, the number of products cited totalled four. Following implementation this was reduced by 50% to two products only.

When the frequency of product use was examined, similar findings were evident. Overall frequency of product utilisation was reduced following the implementation of the wound management improvement strategy. Products frequently cited in the pre-implementation phase such as Hydrotac®, Aquaclear®, and Hydrofilm® demonstrated a marked reduction post-implementation.

Episodes of care

The mean number of wound management episodes demonstrated a marked reduction following the implementation of the project (Table 1).

Table 1: Number of wound care episodes

Pre/Post		Episode			Sum
		Mean	Median	Standard Deviation	
Pre/Post	Pre data	4	3	2	410
	Post data	2	2	1	47

The propensity of the nurses to reduce the frequency of dressing changes was also evident in the data following the implementation of the wound management improvement strategy. Prior to the intervention, 84.4% (n=54) of wound dressings were changed daily. This was reduced to 20% (n=3) following the intervention. This change in dressing practice was also reflected in the number of wounds that were changed as needed (PRN) (Table 2).

Nurses’ knowledge

The online survey was completed by 31% of staff (n=19). Of those 74% (n=14) completed the flash card viva voce survey

Participant demographics

The majority of respondents were female, aged 49 years or older and had a certificate or undergraduate degree of nursing. One-third (n=3) had undertaken postgraduate education in wound management, with only one respondent holding a tertiary qualification in this area.

Pre-implementation findings

When asked to rate their level of confidence in providing best practice wound management, the majority of respondents stated that they were reasonably confident (Table 3).

This trend was not correlated with knowledge scores achieved in the survey. Scores for the wound management knowledge survey revealed that the majority of respondents obtained 64% (mean 36.68 out of a possible 57) of the correct responses. The highest score was 75% and the lowest score 54%.

Twenty-five per cent (n=15) of potential respondents completed the wound photo flash card test. The results indicated a similar outcome to that achieved in the knowledge test, with the majority of respondents achieving 30% (mean 1.5 out of a possible 5 (SD 1.12)).

Results from the flash card test indicated a similar pattern to that demonstrated in the product selection data above. When asked to select a wound product for a given wound photograph (for example, Flash card photograph A) responses were generally varied. Table 4 illustrates the range of products selected for one case.

Post-implementation

The aim of comparing the pre-implementation data with the post-implementation data was not possible due to a post-implementation response rate of 0%. Despite the online survey and flash cards being made available to staff for four weeks and a reminder visit to both sites by the researcher, previous respondents were either not prepared or did not have sufficient time to complete the follow-up knowledge test.

DISCUSSION

This project has highlighted some significant aspects of wound management in two residential, metropolitan aged care facilities in Melbourne. Prior to the project being commenced, both aged care facilities had benefited from several months of Hartmann product familiarisation. Qualified nurses from both sites had opportunities to attend the short wound management lectures. The uptake of this education was slow and reluctance was evident from many

Table 2: Dressing change frequency

		Dressing frequency				
		daily	twice daily	three times per day	four times per day	PRN
		Row N %	Row N %	Row N %	Row N %	Row N %
Pre/Post	Pre data	84.4%	4.7%	4.7%	.0%	6.3%
	Post data	20.0%	.0%	.0%	.0%	80.0%

practitioners. Wound product use remained varied. This may be explained by many reasons, including education, product knowledge and the non-exclusivity of product choice. Once this project commenced, the dressing cupboards were effectively ‘cleaned up’ and levels of stock reduced, education on product choice was offered and a basic wound management plan was agreed to by all stakeholders.

The data from this project demonstrates that there is variety in the age, experience and postgraduate education of RNs within the study sites. The flash card data gives a clear indication that product choice is variable and not consistent with the independent wound management nurse practitioners’. The nurse practitioners’ product choice illustrates, by comparison, that RNs are independently choosing products and not always adhering to their validated policy, which is based on the STAR classification system and associated management plan.

RNs have demonstrated the knowledge to assess, manage and offer best practice for both skin tears and pressure injuries but fail to document their assessment and wound plan in a clear, consistent manner. This is, of course, not unique to employees of the study sites, but it is well recognised in literature that nurses are poor documenters³⁻⁵. It should also be noted here that following the introduction of the commercially available ‘LeeCare™’ electronic note system to some facilities, wound

Table 3: Self-reported confidence

Confidence level			
Not confident	Very confident	Reasonably confident	Not my decision
0	2	16	0

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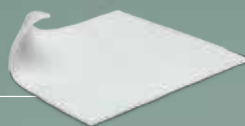
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Table 4: Products selected for a given case study.

Flash card A							
hydrotac	hydrosorb	intrasite gel	cutalin	mesalt	flaminal	betadine	tenderwet
1	1	5	2	1	2	1	2

management documentation has improved in both content and legibility. However, any electronic system is a reflection of those using it and there is no audit data available to demonstrate that all skin tears and pressure injuries are documented. Consequently, as this project relied heavily on medical records for outcomes, when the hard copy documentation system was changed to LeeCare™, the data collection was negatively affected.

LIMITATIONS

- This project relied heavily on the medical records of residents in the nominated care facilities to obtain wound outcome data. The patient documentation available to the researcher lacked rigour.
- It was not possible to accurately estimate product usage over such a long period of time for pressure injuries and skin tears. These wounds are essentially only a proportion of the wounds residents suffer; therefore, product usage is calculated for all wound types, and not exclusively for pressure injuries and skin tears.
- The small convenience sample of RNs who took part in this project has been untraceable due to the project's anonymity design, preventing follow-up of replication of this data set.
- The complete absence of post-intervention data from the RNs prohibits comparative analysis.

CONCLUSION

The data provided by this small pilot project gives some indication to several reasonable conclusions.

There is generally an inconsistent approach to wound management demonstrated in the reviewed patient data illustrated in this project.

It would appear that the utilisation of product and the frequency of wound dressing changes was decreased in conjunction with the implementation of the Hartmann suite of wound management products and targeted wound management education. It may give rise to the suggestion that the propensity of the nurses to reduce their dressing practice from daily to PRN as demonstrated by total episodes of care in the post data will reflect in a more cost-efficient wound management system.

The absence of post data for the registered nurse cohort prevents any conclusions being drawn about the effect of this intervention on knowledge. There is a clearly demonstrated inconsistency of product choice for both types of wounds studied and a variable knowledge base illustrated by the practitioners involved. This may be credited to the quality of postgraduate qualifications achieved by the cohort.

However, the limitations of this project prevent the findings being applied to other residential aged care populations and further studies examining wound management support for skilled, semi-skilled and unskilled clinicians in this arena are required.

CONFLICTS OF INTEREST

The project was supported by an educational grant from Paul Hartmann Pty Ltd. The author is not employed by Paul Hartmann Pty Ltd.

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