Implementing pressure ulcer prevention in a Welsh nursing home

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Pressure ulcers represent expensive adverse events and are a significant cause of pain and distress to patients. This article examines a SKIN bundle approach that was implemented in a Welsh nursing home to assist in the prevention of pressure damage. An educational intervention specifically designed to aid implementation was put in place and a series of audits were performed to collect nursing team members’ knowledge of pressure ulcer prevention and occurrence. The authors outline how staff’s knowledge scores increased dramatically following education and how pressure ulcer prevalence subsequently remained low.

KEYWORDS:
- Wound care
- Pressure ulcers
- Nursing home
- SKIN bundle

Pressure ulcers are a cause of pain, embarrassment, loss of independence, poor quality of life, depression, social isolation and distress for those affected, as well as being potentially life-threatening (Keen, 2009). They also represent expensive adverse events that contribute to potentially avoidable health and social care costs (Dealey et al, 2012; Niederhauser et al, 2012). At 2008/9 prices, the Department of Health (DH, 2010) estimated the cost of treating a category 4 pressure ulcer as £12,000–£17,000. Organisations increasingly have to pay out large sums of money in litigation for pressure ulcers (Iglesias et al, 2006; Vale and Noble, 2006).

The prevalence of pressure damage among nursing home residents is unknown, however, James et al (2010) reported a prevalence rate of 26.7% in Welsh community hospitals with similar populations.

WHAT IS A PRESSURE ULCER?

The European Pressure Ulcer Advisory Panel (EPUAP) and the US National Pressure Ulcer Advisory Panel (NPUAP) collaborated to define a pressure ulcer as ‘a localised injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear’ (EPUAP/NPUAP, 2009).

Pressure damage can be relatively limited, presenting as discolouration or discomfort in the superficial skin layers, or severe, involving muscle, fascia and other structures as well as the skin (EPUAP/NPUAP, 2009).

SKIN BUNDLES

A care ‘bundle’ is a collection of evidence-based interventions, which are systematically delivered to a population of individuals with a particular need (Robb et al, 2010). In this context, SKIN is an acronym for:
- Surface/skin inspection
- Keep moving
- Incontinence
- Nutrition.

These are the key features of care that need to be addressed if an individual is to be protected from the development of pressure ulcers.

In Wales, this formed part of a high-profile initiative designed to reduce harm to hospital patients known as the 1,000 Lives Campaign (NHS Wales, 2010). The SKIN bundle was piloted in one of the health boards with the aim of significantly reducing pressure ulcer occurrence. Following positive evaluation by the piloting health board, the Welsh government directed all remaining health boards to implement the piloted SKIN bundle concept, or to adopt similar initiatives (NHS Wales, 2010).

Recognising how the SKIN bundle implementation had benefited hospital patients, the
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tissue viability link nurse at Cwrt Enfys sought the help of the tissue viability nurse specialist in bringing the concept to the nursing home. It was hoped that use of the SKIN bundle might assist in the prevention of avoidable pressure damage in Cwrt Enfys residents through the delivery of targeted interventions for all those at risk of pressure ulcer development (see box above right for a definition of avoidable pressure damage).

**METHOD**

Cwrt Enfys is a care home with more than 90 beds. However, it was agreed that SKIN bundle implementation should initially be started in only one unit — it would then be rolled out to the other units once the documentation had been tested.

A unit known as Tŷ Enfys, which has some of the most frail residents, was identified as the pilot unit. An initial pressure ulcer point prevalence audit was carried out by the tissue viability link nurse and tissue viability nurse before the SKIN bundle was introduced to Tŷ Enfys. Data about pressure ulcer occurrence were collected using an adapted version of the EPUAP data collection tool (Vanderwee et al, 2007).

The tool collects details of each patient’s age, gender, length of stay, pressure ulcer risk, repositioning frequency, whether pressure redistributing equipment has been used, and the location and category of any pressure damage.

The pressure ulcer risk assessment score used in the original EPUAP tool was the Braden Scale (Prevention Plus, 1998). However, for the purposes of this audit, the risk assessment tool was changed to the Waterlow score (Waterlow, 1998), as this was the risk assessment tool being used by the Cwrt Enfys nursing staff.

Also, the original EPUAP (1999) tool used the descriptions ‘non-blanchable erythema’; ‘blister/abrasion’; ‘superficial ulcer’; and ‘deep ulcer/necrosis’ to categorise the most severe pressure ulceration, whereas for the purposes of the current audit, the descriptions used were those from the more recent EPUAP/NPUAP (2009) guidelines. For example, ‘superficial ulcer’ in the original EPUAP tool became ‘category 3 pressure ulcer’ in the adapted version of the tool.

In this study, an audit of the residents’ skin was performed before and after the introduction of an educational session, which sought to introduce the concept of the SKIN bundle to staff in the hope that they would use it in their everyday practice.

**THE FIRST AUDIT**

Once verbal consent had been obtained, the two nurses questioned each resident and inspected their skin, while also recording the findings. There were 28 residents in the unit on the morning of the audit and the skin of all the residents was inspected. The residents’ demographic information was as follows:

- Nine residents were male and 19 were female
- Ages ranged from 68–101 years
- Twenty-two were at least 80 years old, with 13 of these being aged at 90.

Pressure ulcer risk assessment

Residents’ Waterlow score ranged from 6–26, with 10 residents scoring 15–19 (high risk), and a further 10 residents scoring at least 20 (very high risk).

Skin inspection

No residents were found with pressure damage, which gave a prevalence rate of zero. Several residents had a history of pressure

**Red Flag Avoidable pressure damage**

‘Avoidable’ means that the person receiving care developed a pressure ulcer and the provider of care did not do one of the following:

- Evaluate the person’s clinical condition and pressure ulcer risk factors
- Plan and implement interventions that are consistent with the person’s needs and goals and recognised standards of practice
- Monitor and evaluate the impact of the interventions
- Revise the interventions as appropriate (National Patient Safety Agency [NPA], 2010).

This paper highlights the importance of taking an organisation-led systematic proactive approach to pressure ulcer prevention. The study demonstrates the effectiveness of using evidence-based practice in a strategic approach (SKIN bundle) to enhance nursing care, including documentation.

Nursing staff working in private nursing homes do not have the same access to training and educational opportunities as those in public health nursing homes. However, the study demonstrates how pressure ulcer prevention initiatives can promote best practice (both clinical skills and documentation).

The study is small yet relevant to the ongoing challenge for nursing homes — to prevent these largely avoidable distressing, often painful ulcers in a patient population highly predisposed to and, therefore, at increased risk of, pressure ulceration.
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damage that had healed, which highlighted the vulnerability of the residents, but also the excellent nursing care that had facilitated healing and prevented any recurrence of skin breakdown.

Also, 12 residents were found to have red areas over bony prominences, all of which were blanching, demonstrating the very high level of pressure ulcer risk in this particular population (blanching of red skin indicates that the skin is marking very easily, but that there is not yet actual pressure damage because the micro-circulation is still intact).

**Additional Findings**
The audit found that immobile residents were already being frequently repositioned and the use of pressure-reducing support surfaces was appropriate in most cases. There were no powered support surfaces in use and none of the residents required a powered support surface, as those at very high risk were being repositioned once or twice per hour.

In a few cases where easily marking skin was found, advice was given about the need for a pressure-reducing foam cushion. However, the majority of residents were being nursed on a good quality high-specification foam pressure-reducing mattress, which were noted to be in good condition.

**EDUCATION**
Successful prevention requires nurses and healthcare support workers caring for those at risk of pressure ulcer development to have adequate knowledge about pressure ulcers and prevention interventions (Jones, 2007; Tweed and Tweed, 2008). It followed that in order for the nursing team at Cwrt Enfys to provide evidence-based care they needed knowledge of the recommendations set out in the EPUAP/NPUAP (2009) guidelines.

A self-administered multiple choice questionnaire was used to collect data about the nursing staff’s pressure ulcer prevention knowledge. This consisted of 10 questions derived from the EPUAP/NPUAP (2009) guidelines, and included each of the main factors needed for pressure ulcer prevention, namely:

- Definition
- Pressure ulcer classification
- Risk factors
- Repositioning
- Skin care
- Nutrition
- Support equipment
- Education of healthcare staff.

Findings
Questionnaires were returned by 24 healthcare support workers and 10 nurses. Each questionnaire was numbered, with responses from healthcare support workers being numbered from 1–24 and responses from qualified nurses being numbered from 25–34. Some questionnaires were returned with two or three responses to particular questions. In these cases, the answer of ‘don’t know’ was entered into the database.

From a possible total of 340 correct responses, 153 responses
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were correct. The qualified nurses correctly answered 58% of questions, while the healthcare support workers correctly answered 40% of questions. Figure 1 illustrates how the total number of correct responses was distributed among the staff.

**Teaching session**

A teaching session was designed by the tissue viability nurse, which aimed to address the gaps in knowledge revealed by the audit. This took the form of a one-hour training session, including informal discussions around a Powerpoint presentation, which incorporated the SKIN bundle concept. The presentation used photographs illustrating the main recommendations set out in the EPUAP/NPUAP (2009) guidelines.

The tissue viability nurse delivered the first training session to a small number of staff, including the tissue viability link nurse. The link nurse then went away and disseminated the training to the remaining healthcare support workers and nurses, keeping records of attendance. Once all the staff had been trained, the same questionnaire was used to re-audit their knowledge.

**Findings post-education**

Questionnaires were returned by 20 healthcare support workers and 11 nurses. Each questionnaire was numbered, with responses from healthcare support workers being numbered from 1–20 and those from qualified nurses from 21–31. From a possible total of 310 correct responses to the questions, 297 responses were correct (96%). Figure 2 illustrates how the total number of correct responses was distributed following the education.

**SKIN BUNDLE IMPLEMENTATION**

The SKIN bundle was well established in the community hospital close to Cwrt Enfys and Figure 3 outlines the documentation used. Consent was gained from the company owning Cwrt Enfys and slight changes were made to the hospital SKIN bundle documentation, for instance,
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In the second audit, the residents’ demographic information was as follows:
- Eleven residents were male and 20 were female
- The age range was 61–101
- Twenty-two residents were aged at least 80; with 14 of these being at least 90.

**Pressure ulcer risk assessment**
The second audit found the residents’ Waterlow score ranged from 8–30, with 12 residents scoring 15–19 (high risk), and a further 15 residents scoring at least 20 (very high risk).

**Skin inspection**
One resident was found with pressure damage, giving a prevalence rate of 3%. She was found to have category one pressure damage to her left heel, which was only identified for the first time during the audit. She had become unwell during the night and was awaiting a visit from the doctor who subsequently started antibiotic therapy for a chest infection. As soon as the non-blanching erythema was identified, her heels were protected appropriately, and several days later the damage had resolved.

This incident highlights how easily this population of people can develop pressure damage as soon as they become unwell.

**Additional findings**
The second audit also found that residents at high risk of pressure damage were being repositioned as frequently as they needed to be and that vulnerable heels were generally being ‘floated’ above support surfaces.

**DISCUSSION**
Evidence-based guidance such as the EPUAP/NPUAP (2009) guidelines can assist practitioners with the integration of research findings and expert knowledge into care. Successful implementation, however, depends on factors such as clinicians’ motivation, a supportive professional practice environment, commitment from managers and institutional support.

All of these factors were present during implementation of a SKIN bundle approach at Cwrt Enfys — indeed, all of the units in the home are now using the SKIN bundle approach. Another large neighbouring nursing home has also followed the example of Cwrt Enfys and successfully implemented the SKIN bundle concept, with yet more minor changes to the documentation.

Qualified nurses and unqualified support staff needed to learn and work together, with support from managers, to implement the SKIN bundle. This is supported by Samuriwo (2010), who found that the majority of interventions to prevent pressure ulcers were delegated to healthcare support workers. Before the targeted education at Cwrt Enfys, the staff’s knowledge was not consistent with the most recently published evidence-based guidance and SKIN bundle implementation resulted in a measurable improvement in pressure ulcer prevention knowledge.

The questionnaire was self-administered, which it could be argued introduced bias. However, accompanying instructions asked staff to complete the questionnaire individually and without consulting sources of information such as the internet, but this could not be guaranteed. The reliability of the knowledge was further compromised by the length of time it took for each nursing team member to complete a questionnaire, as consultation could have been taking place during that time. However, a strict time limit was not applied as, in order to be effective, the initiative required the voluntary engagement of the whole nursing team.

Also, to encourage full participation by as many of the nursing workforce as possible, the questionnaire was limited to 10 items. Although this meant a shorter completion time, it restricted the extent to which knowledge about pressure ulcer prevention could be explored.

The limitations of measuring pressure ulcer occurrence during
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this initiative also have to be acknowledged. As it was not possible for the tissue viability nurse to validate all the potential incidents of pressure damage, two-point prevalence audits were used as an alternative, which limited data collection to two points in time over an 11-month period.

Although any interpretation of the findings must, therefore, be treated with caution, use of the EPUAP data collection methodology described by Vanderwee et al (2007) allowed comparison of data with that of the study by James et al (2010). The prevalence rates of zero and 3% in Ty Enys contrast markedly with the 26.7% prevalence rate that James et al (2010) found in Welsh Community Hospitals using the same EPUAP methodology.

The managers at Ty Enys noticed that SKIN bundle implementation led to a marked — although unmeasured — improvement in documentation related to pressure ulcer prevention. General communication between healthcare support workers and qualified nurses about residents’ wellbeing also improved — because the healthcare support workers found themselves signing for interventions and skin checks, every small concern was reported to the nurse on duty.

Prevention interventions such as repositioning, skin inspection and equipment checks became more methodical, systematic and thorough. When it was occasionally discovered that a resident’s skin had developed a problem, the relevant SKIN bundle charts were scrutinised so that the issue could be discussed with the staff providing care when the problem had developed.

CONCLUSION

Pressure ulcers are expensive adverse events and a significant cause of pain and distress to patients. In this study, a SKIN bundle approach to care was implemented in a nursing home to assist in the prevention of pressure damage. An education session specifically designed to aid implementation was accompanied by a series of audits. These facilitated data collection about nursing team members’ knowledge of pressure ulcer prevention and also the occurrence of pressure ulcers.

Knowledge scores increased dramatically following staff education and pressure ulcer prevalence remained low. As the nursing staff were well-supported and given time for training, as well as being encouraged to change the format of the SKIN bundle documentation to suit their needs, there was little resistance to implementation.

With time, the SKIN bundle became accepted by all of the staff as the easiest way of ensuring that the necessary pressure ulcer prevention measures were delivered and documented. The nursing team took pride in the way they cared for the residents and were able to ensure all avoidable pressure damage was prevented.

REFERENCES


