Improving wound and pressure area care in a nursing home


Summary

Wound and pressure ulcer prevention are key quality indicators of nursing care. This article describes a collaborative project between a community skin care service and a nursing home. The aim of the project was to establish whether the implementation of a wound and pressure ulcer management competency framework within a nursing home would improve patient outcomes and reduce the severity and number of wounds and pressure ulcers. Following the project’s implementation, there was a reduction in the number of wounds and pressure ulcers, hospital admissions and district nursing visits. Nursing home staff also reported an increase in their knowledge and skills.

Authors

Kate Sprakes, team leader, Skin Care Service, and Julie Tyrer, nurse specialist, Skin Care Service and clinical quality facilitator, Nursing Development Team, Liverpool Community Health NHS Trust, Liverpool. Email: kate.sprakes@liverpoolpct.nhs.uk

Keywords

Nursing homes, older people, pressure ulcers, wound care

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THE AUTHORS of this article are members of a skin care service within a local NHS community provider. The aims of the service are to improve health outcomes for the local patient population by promoting standardised, integrated, best practice in wound care. The service supports community nurses in the clinical assessment and management of complex wounds, such as large dehisced surgical wounds, non-healing wounds, acute and chronic dermatological conditions and severe pressure damage.

The authors identified a gap in service provision in the independent sector relating to wound care and the prevention and management of pressure ulcers. Individual members of the team had discussed the number and severity of referrals received in relation to nursing home patients. Since 2006 district nursing teams in Liverpool have been linked to specific nursing homes to support nursing home staff in managing all aspects of nursing care. Since then district nursing services have received a high volume of referrals requesting advice and support in wound care, and in pressure ulcer prevention and management. This has had an effect on the district nursing workload, increasing the stress of district nurses and the cost to the primary care trust. These costs are related to district nursing contacts (visits), inappropriate prescribing of wound care products and hospital admissions.

As the population ages, the resource burden associated with managing wounds and pressure ulcers is likely to increase. Patients residing in nursing homes are some of the most vulnerable patients in the local population. However, evidence-based care for wound assessment and management, and the prevention and management of pressure ulcers, is often lacking. This was supported by the authors’ observations and incidences of poor practice.

The authors therefore proposed a project that would attempt to establish whether wound and pressure ulcer training, and the implementation of a competency framework, would have a positive effect on patient outcomes in an identified nursing home by reducing the severity and number of wounds and pressure ulcers. Funding was received from the Queen’s Nursing Institute, a charitable organisation that supports developments in community services. The project was implemented between May 2009 and April 2010.

Literature review

A pressure ulcer is ‘localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear. A number of contributing or confounding factors are also associated with pressure ulcers; the significance of these factors is yet to be elucidated’ (European Pressure Ulcer Advisory Panel (EPUAP) and National Pressure Ulcer Advisory Panel)
Pressure ulcer grading tool

<table>
<thead>
<tr>
<th>Category/stage I non-blanchable erythema</th>
<th>Category/stage II partial thickness</th>
<th>Category/stage III full thickness skin loss</th>
<th>Category/stage IV full thickness tissue loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intact skin with non-blanchable redness of a localised area usually over a bony prominence. Darkly pigmented skin may not have visible blanching. Its colour may differ from the surrounding area. The area may be painful, firm, soft, warmer or cooler compared with adjacent tissue. Stage 1 ulcers may be difficult to detect in individuals with dark skin tones. May indicate ‘at risk’ persons.</td>
<td>Partial thickness loss of dermis presenting as a shallow open ulcer with a red or pink wound bed, without slough. May also present as an intact or open or ruptured serum-filled or serosanginous filled blister. Presents as a shiny or dry shallow ulcer without slough or bruising (indicates deep tissue injury). This category should not be used to describe skin tears, tape burns, incontinence associated dermatitis, maceration or excoriation.</td>
<td>Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle are not exposed. Slough may be present, but does not obscure the depth of tissue loss. May include undermining and tunneling. The depth of a stage III pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have subcutaneous (adipose) tissue and stage III ulcers can be shallow. In contrast, areas of significant adiposity can develop extremely deep stage III pressure ulcers. The bone or tendon is not visible or directly palpable.</td>
<td>Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present. Often includes undermining and tunnelling. The depth of a stage IV pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have subcutaneous (adipose) tissue and these ulcers can be shallow. Stage IV ulcers can extend into muscle and/or supporting structures (fascia, tendon or joint capsule) making osteomyelitis or osteitis likely to occur. Exposed bone or muscle is visible or directly palpable.</td>
</tr>
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</table>

(NPUAP) 2009). Table 1 shows the EPUAP and NPUAP (2009) pressure ulcer grading system. Pressure ulcers are associated with considerable human and financial cost. The cost of treating a pressure ulcer varies from £1,064 (grade 1) to £10,531 (grade 4). Costs increase with ulcer grade because the time to heal is longer and because the incidence of complications is higher in more severe cases. The total cost of treating pressure ulcers in the UK is £1.4-2.1 billion annually (4% of total NHS expenditure). Most of this cost is related to nurse time (Bennett et al 2004).

Pressure ulcers are a major burden on patients. They lead to sickness and reduced quality of life, creating significant difficulties for individuals, their carers and families (NHS Institute for Innovation and Improvement 2009). Pressure ulcers can cause pain and become infected, which sometimes leads to sepsicaemia or bone infections. In addition, underlying muscle or bone may be destroyed. Pressure ulcers can become life threatening and lead to longer hospital stays (National Institute for Clinical Excellence (NICE) 2001).

Pressure ulcers can occur in any patient, but are more likely in high-risk groups such as older adults, or those who are obese, malnourished or have underlying conditions such as diabetes or peripheral vascular disease. Pressure ulcers have been associated with an increased risk of secondary infection and a two to fourfold increase of risk of death in older patients in intensive care units (Bo et al 2003). Grey et al (2006) found that in-hospital mortality in this patient group is 25-33%. As pressure ulcers are largely preventable and may be indicative of clinical negligence, litigation associated with pressure ulcers in the UK could also begin to increase (Bennett et al 2004).

Pressure ulcers were once considered an occasional and unfortunate by-product of hospital care, but are now viewed as preventable and unnecessary (Collins 2001). Wound care and the prevention and treatment of pressure ulcers are recognised as key quality indicators of nursing care (Department of Health (DH) 1993, NHS Institute for Innovation and Improvement 2009).

In relation to pressure ulcer management in care homes, specific critical areas have been identified where care falls below the expected standards (O’Hare 2008, Phillips and Buttery 2009), including:

- Risk assessment and documentation on admission.
- A prescribed care plan that documents interventions, assessment schedules and outcomes.
- The allocation of resources as soon as risk is identified.
- Correct grading system and wound assessment documentation.

The Nursing and Midwifery Council (2010) states that: ‘Record-keeping is an integral part of nursing and midwifery practice. It is a tool of
professional practice and one that should help the care process. It is not separate from this process and it is not an optional extra to be fitted in if circumstances allow."

A holistic assessment to identify risk factors and the implementation of appropriate action is essential to prevent pressure ulcers (Schoonhoven et al. 2007). Clinical guidelines (Royal College of Nursing (RCN) and NICE 2005) and benchmarks for best practice (DH 2003) on pressure ulcer prevention and management have been developed. These guidelines provide healthcare professionals with evidence-based recommendations that focus on holistic patient care. However, Phillips and Buttery (2009) highlighted that such guidelines have little chance of having a positive effect on care if they are implemented in a piecemeal and inconsistent manner.

Since the early 1980s older people with long-term health needs, who were previously cared for in hospitals, have been placed in residential or nursing homes. At the time of the project there were approximately 1,700 residential care beds and 1,400 nursing home beds in the authors’ local community. Over half the beds allocated to health care in the UK are located in independent nursing homes for older people (Kerrison and Pollock 2001). Patients in residential and nursing homes are often old. Increasing age is associated with poorer mobility, nutrition and continence status, and skin usually becomes thinner and more fragile with age (Waterlow 2007). As a result these patients are at increased risk of developing pressure ulcers and are more susceptible to the complications associated with delayed wound healing. Risk factors associated with pressure ulceration are outlined in Box 1.

Benbow (2009) suggested that nursing home staff are not adequately trained to prevent and treat pressure ulcers. O’Hare (2008), in her review of more than 37 inspections and care home complaints, found that nursing homes fell short of best practice for pressure ulcers. However, it should be noted that some nursing home patients may develop pressure ulceration while in hospital and move to another healthcare setting with existing pressure damage. Buckland et al. (2001) found that nurses in all settings, not only those in the independent sector, had a lack of up-to-date knowledge about pressure ulcers. According to the DH (1993), ‘education is probably the single most effective way of reducing the incidence of pressure ulcers’. However, from the authors’ engagement with staff working in the independent sector, it would appear that not all nursing homes are able to provide the level of training that their nursing staff require. It has been suggested that the quality and availability of education for nursing home staff needs to be brought in line with that of nurses working in the NHS (DH 2000). O’Hare (2008) stated that all staff working in nursing homes should be able to access appropriate training. However, constraints of time, finances and rapid staff turnover can make the provision of education difficult, and staff are often not allocated protected study time.

**Background**

The authors identified a nursing home as the project site. Observations by members of the skin care service at this nursing home identified patients with poorly managed wounds, including pressure ulcers. The nursing home has not been named to retain confidentiality. At the time of the project there were 34 residents in the nursing home, nine trained nurses and 34 healthcare assistants working different shift patterns, providing 24-hour care. The nursing home had recently undergone a change of management structure and the need to improve the competency level of staff in wound and pressure ulcer prevention and management had been identified. The key to effective management of all wounds, including pressure ulcers, lies in the identification and optimisation of factors that could delay the normal wound healing process. An evidence-based, wound assessment tool was not being used in the nursing home and this appeared to be associated with poorly managed wounds, including pressure ulcers.

The nursing home had a high number of patients with traumatic wounds such as skin tears, pre-tibial lacerations and pressure ulcers. This

**Box 1**

**Risk factors for pressure ulceration**

- Acute illness: increased metabolic rate and demand for oxygen compromising tissues.
- Age: chronic disease, cerebrovascular accident, impaired nutrition, confined to chair or bed, faecal incontinence, fractured neck of femur.
- Level of consciousness: acute or chronic illness, medication (sedatives, analgesics, anaesthetics).
- Limited mobility or immobility: cerebrovascular accident, spinal cord injury (hemiparesis, paraparesis, quadriplegia), spasticity, arthritis, orthopaedic problems (especially fractured neck of femur), patients confined to chair or bed.
- Sensory impairment: neuropathies (for example, diabetes), decreased conscious levels, medication, spinal cord injury.
- Severe chronic or terminal disease: diabetes, chronic obstructive pulmonary disease, chronic cardiovascular disease, terminal illness.
- Vascular disease: smoking, diabetes, peripheral vascular disease, anaemia, antihypertensives.
- Malnutrition or dehydration.
- History of pressure damage. (NICE 2005)
increased the number and frequency of district nursing contacts required to support the nursing home staff in managing these wounds. Anecdotal evidence from members of the skin care service and the district nurses also highlighted a history of inappropriate admissions to secondary care.

As part of the skin care service’s clinical governance agenda, a wound assessment competency framework had been developed and implemented in 2007. This framework covers the structure and functions of the skin and how wounding impairs these functions; different wound types and aetiologies; the stages of wound healing; factors that could delay wound healing; properties of generic wound care products and the importance of holistic assessment to collate, analyse and interpret the information gathered to develop and evaluate appropriate management plans.

A pressure ulcer prevention and management competency framework was developed in 2009 based on RCN and NICE (2005) evidence-based guidelines for the prevention and management of pressure ulcers. It includes a definition of pressure ulceration and common sites of occurrence, classification systems, risk assessment tools and holistic assessment. The competency frameworks had already been approved by and implemented by all nursing services in Liverpool Community Health NHS Trust. The authors combined the two competency frameworks and developed one specifically for the independent sector. Its aim was to increase nurses’ knowledge and capability in wound and pressure ulcer management.

The competency framework included the Bondy Measurement Tool (Table 2), which identifies four levels of achievement to evaluate clinical practice: proficient, independent, supervised and participative (Bondy 1983). Each level of achievement is divided into three areas, which determine the level of performance achieved by the practitioner: the standard of performance; the quality of performance; and cues needed during performance.

- **Standard of performance** implies application of knowledge, psychomotor skills and appropriate attitude and is described in terms of:
  - Safety – performance includes physical and psychological aspects. The criteria for safety is that behaviour does not cause harm by action or omission.
  - Accuracy – assessed by the extent to which the knowledge base is used during the performance.
  - Effectiveness – achievement of stated intent and the manner with which the behaviour is performed.

- **Quality of performance** describes the degree of skill required, including co-ordination, confidence, ease of performance, economical use of time and the extent to which the practitioner focuses on the patient. ‘Cues needed during performance’ refers to the amount and type of assistance required. Cues can be directive or supportive and may be verbal or practical. They refer to what is necessary to maintain and promote the performance.

- The district nursing team that supports the nursing home expressed their concern about poor practice in the home and the number of

### TABLE 2  
Bondy measurement tool

<table>
<thead>
<tr>
<th>Level of achievement</th>
<th>Standard</th>
<th>Quality</th>
<th>Cues</th>
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<tbody>
<tr>
<td>Independent (I)</td>
<td>Safe, accurate and effective with appropriate affective manner.</td>
<td>Skillful and co-ordinated performance. Confident and economical use of time. Able to focus primarily on the patient.</td>
<td>Self-directing.</td>
</tr>
<tr>
<td>Supervised (S)</td>
<td>Safe, accurate and effective performance. Appropriate affective manner most of the time.</td>
<td>Skillful and co-ordinated performance in some key aspects of care. Some degree of confidence, but spends excess time in achieving objectives. Focuses on the patient, but is distracted when the skill is more complex.</td>
<td>Occasional directive and supportive cues.</td>
</tr>
<tr>
<td>Participative (P)</td>
<td>Effective and appropriate affective manner some of the time. Some potential for omissions or inaccuracies.</td>
<td>Skillful in some aspects, but lacks co-ordination. Displays some confidence. Expends considerable time in achieving objectives. Occasionally able to focus on the patient, but concentrates on the skill.</td>
<td>Frequent directive and supportive cues.</td>
</tr>
</tbody>
</table>

(Bondy 1983)
district nursing contacts required in relation to wound and pressure ulcer care.

Using national guidance on how to change practice (NICE 2007), possible barriers to the successful implementation of the project were identified, including attitudes towards change, a tight timeframe to implement the project and staff commitment to participate in it. The nursing home staff’s attitudes towards change – such as fear of the unknown and failure to recognise the need to change practice – were addressed by motivating staff. Discussions took place on why change was being made and on the potential benefits of the project to patients through improved care, and to staff through increased knowledge and skills. Staff were engaged in the initial discussions about the project, which included a half-day informal session outlining its aims and the expectations of all involved. If staff understand why change is occurring, they are more likely to implement the required change (Huber 2006).

**Aims and objectives**

The overall aim of the project was to improve outcomes for patients requiring wound and pressure ulcer management, specifically to:

- Improve the level of knowledge, capability and confidence of staff in wound assessment and management, and in pressure ulcer prevention and management, to reduce the number of pressure ulcers and their severity.
- Ensure nurses use appropriate wound assessment documentation for all wounds, including pressure ulcers.
- Engage with the owners of the home to ensure levels of care are sustained.

To achieve the above aims, the objectives were to:

- Provide relevant structured training for nurses working in the nursing home.
- Support four nurses through the required competency frameworks.
- Reduce the number of referrals to the district nursing service.
- Aid implementation of evidence-based wound assessment documentation.
- Provide feedback to nursing home owners and primary care trust commissioners on the positive outcomes of the project.

**Method**

The authors worked with the nursing home manager to identify four key staff nurses who would be supported through the competency-based framework. Four nurses were chosen based on the authors’ experience regarding the timescale required to support staff on an individual basis through the practical aspect of the competency framework. Two theoretical training sessions were delivered by the authors and included one day on wound assessment and one day on pressure ulcer prevention and management. The nurses were then supported through the competency framework process by working alongside one of the authors. Their level of knowledge and competence on wound and pressure ulcer assessment and management was assessed before they began the theoretical training and competency framework, and again on completion of the competency framework. The average time required for each nurse to complete the process was six weeks.

Retrospective data were collected for a six-month period before commencing the project. Data that related to wounds and pressure ulcers were accessed from patient records, while data on district nursing contacts were accessed by the data analysts team. A second stage of data collection was completed six months later, allowing the nursing home staff time to implement the knowledge and skills gained during the training and competency process. Data collection comprised:

- The number of district nursing contacts in relation to wound and pressure ulcer care to identify any possible reduction.
- The number of admissions to secondary care as a result of complications in wound management.
- A questionnaire developed by the authors to examine the effect of providing support for care home staff on district nurses.
- A record-keeping audit to determine the number of wounds and incidence of pressure ulcers. One of the initial aims of the project was to obtain data regarding severity of pressure ulcers. However, only a minority of pressure ulcers had been graded and only a few entries included a description of the tissue type that could indicate grade. The aims were therefore changed to incorporate wound assessment documentation.

**Results**

Comparison of data before and after the project is shown in Table 3. The number of contacts for all wound-related care (including pressure ulcers) fell from 124 to 65. This represents a reduction of 52%. Of the 65 contacts only nine related to wounds or pressure ulcers; the rest were visits made in the second reporting period for a patient who required compression bandaging to manage a venous leg ulcer. The management of leg ulceration was not included in this project.
Table 3 shows the number of wounds and pressure ulcers for both periods. The total number of wounds reduced by 77% and pressure ulcers reduced by 57%. The number of pressure ulcers that were graded increased from 42% to 89%. All the pressure ulcers recorded occurred in the nursing home. With one exception, appropriate wound assessment documentation was completed for each wound, including pressure ulcers. The nursing home manager has continued to support implementation of evidence-based wound assessment documentation through ongoing review of the nursing records, ensuring that appropriate wound and pressure ulcer prevention and management remain part of routine practice for nursing home staff.

There were no wound or pressure ulcer-related hospital admissions for the second period of data collection. Before the project, the nursing home had a high number of secondary care admissions as a result of inappropriately managed pressure ulcers—a factor that had prompted the initial proposal to the Queen’s Nursing Institute for funding of the project. There was only one hospital admission during the first reporting period on the project, which may have been attributable to the new management structure or increased support from the district nurses.

Nursing home staff completed a self-assessment of their level of competence, knowledge and skills before and after the implementation of the competency framework. This highlighted areas where nurses felt they lacked knowledge and skills and the self-assessments demonstrated how much learning and development the nurses had achieved. The self-assessments indicated an increase in nurses’ knowledge and skills, ensuring earlier recognition of ‘at-risk’ patients and identification of pressure damage, and an improved ability to deliver evidence-based practice competently and confidently. Nursing home staff also reported an increase in job satisfaction. Theoretical knowledge and application of theory to practice were assessed through verbal discussion and observation of staff undertaking wound assessments, pressure ulcer risk assessments, and planning and implementing pressure ulcer prevention and management strategies as part of the competency process.

Information collated from the district nurse questionnaires before the project indicated that they felt frustrated. They reported that they were ‘almost taking over’ the nurses’ job in nursing homes. After the project, there appeared to be less work pressures than before, but some district nurses still expressed frustration about supporting nursing home staff. The district nursing team leader and practice development mentor reported that less time was spent supporting nursing home staff as fewer visits were required and referrals made to the district nursing team were more appropriate.

**Discussion**

The nursing home staff appear to have benefited from the project as their confidence in wound and pressure ulcer care have increased, and they reported increased job satisfaction. The clinical risk of caring for residents and the cost to the organisation have reduced. The nursing home is part of a large independent care provider and staff have begun to disseminate the wound assessment documentation in other homes in the group.

*Front Line Care (DH 2010)*, the report by the prime minister’s commission on the future of nursing and midwifery in England, contains a commitment that nurses will tackle ‘unacceptable variations in standards and deliver high quality, compassionate care’; ‘promote innovation’; and ‘raise standards and embed innovation and excellence in patient care’. The authors feel that the results of the project reflect these commitments. The DH (2009) has stated that more productive services should lead to better services for the public and more preventive and people-centred care. This project meets the national public health agenda in identifying the importance of safer patient care through designing new and innovative ways in which clinicians can work together to improve practice (National Patient Safety Agency 2006). It has also helped the nursing home to implement

**TABLE 3**

<table>
<thead>
<tr>
<th>Date of retrospective record keeping audit</th>
<th>Total number of wounds</th>
<th>Common wound sites</th>
<th>Total number of pressure ulcers</th>
<th>Common pressure ulcer sites</th>
<th>Number of pressure ulcers graded within nursing home records</th>
<th>Number of hospital admissions for wounds or pressure ulcers</th>
</tr>
</thead>
<tbody>
<tr>
<td>June-November 2008</td>
<td>48</td>
<td>Lower leg, heel, toe</td>
<td>21</td>
<td>Sacrum, buttock, heels, hip</td>
<td>9 out of 21</td>
<td>1</td>
</tr>
<tr>
<td>July 2009-January 2010</td>
<td>11</td>
<td>Lower leg, heel, sacrum, buttock</td>
<td>9</td>
<td>Sacrum, buttock, heels</td>
<td>8 out of 9</td>
<td>0</td>
</tr>
</tbody>
</table>

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Feedback from the questionnaire indicated that improving nursing skills in the nursing home reduced stress levels in both the independent and community sectors. Education has led to more knowledgeable practitioners, patient-centred care, improved preventive health and a reduction in care inequalities and the likelihood of hospital admissions. The skin care service and district nursing team continue to provide ongoing support to staff in the nursing home, to enable them to consolidate their learning and implement evidence-based practice.

The educational programme carried out as part of the project has increased the knowledge, skills and competence in wound management, and in pressure ulcer prevention and management, of nurses in the nursing home. This has improved the quality of care they deliver. Implementation of the RCN and NICE (2005) guidelines are part of Standards for Better Health (DH 2006) and may be a requirement of the Care Quality Commission’s (2009) new registration scheme, where providers will be required to demonstrate that they meet essential standards of quality and safety in all the regulated activities they provide.

**Limitations of the project** One of the main limitations of the project was that healthcare assistants, who play an integral part in pressure ulcer prevention and management, were excluded from the training and competency framework process. Limited resources have prevented the authors from undertaking further work to identify the sustainability of the improvements made during the project.

**Conclusion**

This project provides an opportunity for a new and collaborative way of working. National guidance on pressure ulcer prevention should be implemented by all healthcare professionals regardless of care setting. The condemnation of poor practice is not sufficient: why it occurs and how it can be prevented also needs to be understood. The authors believe that the project described in this article is transferable and has the potential to be implemented in all nursing homes in Liverpool, thereby benefiting patients, healthcare professionals and organisations.

**References**


Department of Health (2003) The Prevention and Management of Pressure Sores in the Hospital Environment, (DH 2003) and may be a requirement of the Care Quality Commission’s (2009) new registration scheme, where providers will be required to demonstrate that they meet essential standards of quality and safety in all the regulated activities they provide.

**References**


