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Auditing wound prevalence in nursing care homes

Wounds represent a significant burden for healthcare services. It has been estimated that pressure ulcers alone take up 4% of the annual NHS budget and community nurses spend up to 80% of their time managing wounds. A national audit of wound prevalence has not been undertaken in the UK to date and the majority of data comes from hospital patient populations. Less well known is the burden of wounds in care homes. As part of the development of a new tissue viability service, a wound prevalence audit was conducted to determine management priorities and to act as a baseline for measuring the clinical benefit of the service.

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KEY WORDS

Wound prevalence audit
Pressure ulcer prevalence
Nursing care homes
Zero tolerance

Wounds remain a considerable burden on the UK Health Services. Chronic wound cases alone amount to around 200,000 at any one time (Posnett and Franks, 2008). Vowden et al (2009) conducted a district-wide survey and estimated annual costs to be £2.03 million per 100,000 population based on 2006–07 prices, a sum equivalent to 1.44% of the local NHS annual budget. Bennett et al (2004) researched the cost of pressure ulcers in the UK, estimating £1.4–2.1 billion annually or 4% of NHS spending. They concluded that the cost was already significant and without concerted effort was only likely to increase along with the ageing population. The time taken by nurses

on wound care is significant, with White and Cutting (2009) commenting it to be well known that community nurses spend 70–80% of their time on wound management activities. Practice and community nursing services predominantly bear the cost of treating venous ulceration, which at least commits £168–198 million annually (Posnett and Franks, 2008; White and Cutting, 2009).

The scale of wound care in terms of the personnel and beds required per one health district has been reported to be equivalent to 88.5 whole time equivalent nurses and up to 87 hospital beds (Drew et al, 2007). Less well known is the burden of wounds in care homes, with Drew et al (2007) and Vowden et al (2009) reporting recently that 4.8% and 14% respectively of all wound care patients were treated in the independent care home sector. The possible reason why this burden is less well described in the UK than in hospital settings is that care in these predominantly private organisations is not commonly supported by NHS employed tissue viability specialist nursing services, who make a significant proportional contribution to the UK specialist wound literature.

Part of the current NHS agenda is focusing on the transformation of community services. Lord Darzi (Department of Health [DH], 2009)

noted that 90% of people access healthcare in primary and community settings, that there is a strategy for providing service in this area, and the need to work in partnership with social care and other organisations.

While his comments did not specifically talk of the work of the care home sector, the message about care in the community is clear – provide acute care services closer to home.

Tissue viability services in North Devon

In North Devon a tissue viability nursing service was set up in 1995 with one full-time tissue viability nurse (TVN), with the remit to provide expert advisory support to nurses and other healthcare professionals caring for patients in the acute district hospital, its associated community hospitals and those under the care of district nursing teams. Provision of tissue viability services to the nursing care home sector between 1995 to date in the whole South West peninsula has varied, but, with the exception of the Exeter region (Exeter city, Mid and East Devon), were essentially unfunded goodwill arrangements from local NHS organisation TVNs. The North Devon service remained fundamentally unchanged despite two major healthcare reorganisations until 2009 when a proposal was accepted by the Devon Primary Care Trust (PCT) to fund a full-time tissue viability nurse

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to provide a service to nursing care homes. The original proposal, based on preventing admissions to hospital and facilitating early discharge of patients with wounds, was for two full-time TVNs plus administrative support, one to work within GP practice and the second for nursing care homes. Savings from admission prevention outlined in the proposal were based on a known annual number of patients whose primary reason for admission to hospital was wound care. This figure was extracted from routine clinical coding work done on all hospital discharges. A 70% reduction of admissions was estimated, enabling savings to be calculated based on the standard payment to an acute trust for an emergency admission payable by the PCT. Costs of the proposed enhanced service were plotted against this savings figure. The PCT found the costs and the savings to be equal.

There was also recognition of inequity of provision within the Devon PCT commissioning area which needed addressing. However, given the significant financial pressures within the PCT, agreement in the first instance was made to fund the service to nursing care homes only. There was acknowledgement that the proposal would be a cost neutral quality improvement for care home residents. While approval to proceed with the new service was gained before a recent Care Quality Commission (CQC) (2009) report, it is worth noting that the development is in line with one of their key survey findings, that together with infection control and continence, tissue viability advice needs to be strengthened in nursing care homes.

Objectives of the post, in particular, were to provide prompt tissue viability advice to staff caring for patients with wounds or at risk of wounding in nursing care homes through patient consultation in the homes and use of telephone or electronic media. In addition, the post would provide education on key tissue viability topic areas to care home staff, such as chronic wound management and prevention of pressure ulceration. Development of a link nurse network

to dovetail with a similar planned hospital network would aid future cross boundary communications, helping to break down any perceived barriers and share learning on matters of common interest, particularly around hospital admission and discharge. The post would also engage in audit and benchmarking processes to identify topics for educational drives and system changes with a view to improving care. Fundamentally, the post is there to address inequity of service provision to these patients and provide full access to tissue viability specialist nursing support.

Wound prevalence audit

To scope the potential workload and set priorities for the new service a wound prevalence audit was conducted. This audit would also provide a baseline to assess service impact in the future for preventable wounds, in particular pressure ulcers. Baharestani et al (2009) acknowledge the increasing use of pressure ulcer incidence and prevalence data as care quality indicators. In the USA from 1st October 2008, Medicare no longer pays hospitals for additional costs associated with treating a range of hospital-acquired conditions, including stage 3 and 4 pressure ulcers. It is thought that private insurers will follow suit. The centres for Medicare and Medicaid Services have proposed a list of what are described as 'never-events', including hospital-acquired pressure ulcers for which they will not pay (Hurd and Posnett, 2009).

'Never-events' is a term that is already being used in the UK by the National Patient Safety Agency (NPSA, 2009) and the Department of Health (2009) following the first Darzi report (DH 2008). Although the core list of 'never events' did not include avoidable pressure ulcers, the connection between the two has been debated at a conference in July 2009 (Anon, 2009). To address the never-events mandates in the US, the term 'always practice' has been coined to implement best practice (Garrett et al, 2009). It will be interesting to see if CQC and commissioners of service pick up on this language in relation to driving forward the Patient Safety Agenda in

both public and private care facilities through its regulatory framework.

Baharestani et al (2009) describe pressure ulcer point prevalence as the proportion of a defined set of people who have a pressure ulcer at a particular point in time. Incidence studies (the number of people acquiring a new wound or wounds in a given population over a specified period of time) are considered a better measure of effectiveness of a prevention strategy, but are known to be more time-consuming and costly. For this reason, they acknowledge that prevalence is sometimes chosen in preference. This holds true for this audit as it is a practical method of gaining a snapshot of the pool of wounds in multiple organisations.

Method

The audit was carried out by a single data collector across 16 out of a total of 17 care homes registered for nursing care in the area. Subsequent to the date of the survey, an 18th care home has now opened in the area. The survey was undertaken over a two-week period so, in effect, the results are an aggregated series of point prevalence audits. Each individual care home audit was completed on a single day. Following the method used by Drew et al (2007) and Vowden et al (2009), the auditor only examined the records of nursing care home residents and did not verify wounds by clinical inspection. Additional clinical information was extracted verbally from the nurse looking after the resident if the care records did not provide sufficient information, or if clarification was required. Records of all residents were examined for evidence of wounds present on the day of audit. Information was collected on:

- ▶▶ The type of wounds present
- ▶▶ The number of wounds present.

In addition, because it was anticipated that pressure ulcers would feature prominently, the opportunity to collect extra related data to illuminate possible educational work and operational recommendations was taken, so information was collected on:

- ▶ Pressure ulcer risk assessment scales in use
- ▶ Pressure ulcer grading tool in use.

Wound prevalence results

In the 16 nursing care homes that took part there were 458 residents, 25.14% (n=115) had one or more wounds. Every one of the 16 nursing care homes had residents with wounds ranging from 4–44% prevalence. Of these 115 wounded residents, 40 (34.78%) had more than one wound. The 115 residents had a total of 195 wounds. *Table 1* shows a breakdown of wounds by type.

There were no cases of lymphoedema with associated skin lesions reported in this survey.

Pressure ulcer risk and grading scale results

Pressure ulcers were the largest wound type seen in this survey. *Table 2* shows the use of pressure ulcer risk assessment scales, while *Table 3* shows how the use of pressure ulcer grading systems were surveyed.

Discussion

This survey chose to determine the overall prevalence of wounds in privately run nursing care homes, but did not calculate a prevalence for each specific wound type. At a future repeat survey it will be possible to compare the burden of wounds and types present in each individual care home to give a strategic overview of whether the burden is static or changing. However, as no attempt was made in this survey to distinguish between the preventable wounds acquired in the care homes and those that were pre-existing, or acquired during a period of hospitalisation, it will be less clear whether the tissue viability service through education or other means has contributed to lowering avoidable injuries. Nonetheless, it would be expected that over time the burden of preventable injuries should fall if initiatives have been effective, providing the acuity of residents remains the same over the period. The range of the number of residents in the 16 participating homes was 15–67 (mean 28.6). The wound prevalence of 25.1% compared less favourably

Table 1
Breakdown of wounds by types

Wound type	Number of wounds	Percentage of all wounds (denominator = 195)
▶▶ Pressure ulcers	87	44.61%
▶▶ Trauma	37	18.97%
▶▶ Leg ulcers (all types)	23	11.79%
▶▶ Dermatology	18	9.23%
▶▶ Other wounds (unspecified)	17	8.71%
▶▶ Surgical wounds	5	2.56%
▶▶ Malignancy	3	1.53%
▶▶ Skin lesions (non-dermatology)	2	1.02%
▶▶ Diabetic foot ulcers	1	0.51%
▶▶ Other foot ulcers	1	0.51%
▶▶ Thermal	1	0.51%

Table 2
Use of pressure ulcer risk assessment scales

Pressure ulcer risk assessment scale	Number of care homes using
▶▶ Medley	9 (this is the scale used in the local NHS trust)
▶▶ Waterlow	4
▶▶ No score used	1
▶▶ Question unanswered	2

with the survey of McDermott-Scales et al (2009), who reported a wound prevalence of 14.6% in a population of 341 residents in nine private nursing homes, and 9.5% in a population of 409 residents in public nursing homes.

The results demonstrate that pressure ulcers are the most common wound type experienced by nursing care home residents in North Devon. However, three nursing care homes had no pressure ulcers at all and one had 26. This finding of the most common wound type is not unexpected given

that prevalence rates for nursing care homes have previously been reported as 12% (Spector and Fortinsky, 1998), 7–23% (Smith, 1995) in USA, 11.8 and 13.9% in Germany (Lahman et al, 2005; Lahmann et al 2006), and 20% in Sweden (Gunningberg, 2004). Smith (1995) also reported a range of 1–35% of pressure ulcer prevalence at time of admission to nursing home, demonstrating the vulnerability of this group to this injury. While most care homes used a pressure ulcer risk assessment, it was surprising that one did not and two did not answer the question, suggesting a lack of

Table 3

Use of pressure ulcer grading

Grading scale	Number of care homes using
» EPUAP	1
» Torrance	1
» Stirling	1
» Other grading system unspecified	2
» Self-devised scale	1
» No grading system	9
» Question unanswered	1

familiarity, especially as pressure ulcer risk assessment scores developed in the early 1960s by Doreen Norton have since been a staple of UK nurse training and are also required by the National Institute for Health and Clinical Excellence (NICE) guidance (NICE, 2005; Dopson, 2008). Similarly, in the majority of homes there was an unexpected absence of the use of a pressure ulcer grading scale. Therefore, the initial priorities for the new tissue viability service will focus on education regarding the prevention of pressure ulcers, ensuring all care homes have a suitable policy in place that requires the use of pressure ulcer risk assessment and grading scales. The joint European Pressure Ulcer Advisory Panel/National Pressure Ulcer Advisory Panel (EPUAP/NPUAP, 2009) guidelines will be the starting point for this programme (Dealey, 2009), while also ensuring that care homes are acting in accordance with the NICE clinical guideline 29 (NICE, 2005). The inconsistent use of pressure ulcer grading systems in the care homes did not enable data to be collected regarding the severity of pressure ulcers.

The survey found that trauma wounds were the second most common wound type. More work will be needed to understand the severity and frequency of these injuries and the strategies needed to prevent avoidable harm. If there are common themes to the injuries such as skin tears, standard treatment pathways could be devised for the care home community. Skin tear

prevalence rates in nursing homes range from 14–24% (Xu et al, 2009), with an annual incidence of 0.92–2.5 per person per year (Milne and Corbett, 2005). Thus, it was not unexpected to see trauma wounds featuring in this audit. Reductions of around 50% could be expected by implementing preventative regimens (Ratcliff and Fletcher, 2007).

Leg ulceration (all aetiologies) was the third most common wound type in this survey, with an 11.79% (23 wounds) share of all the wounds recorded. A specific prevalence rate for leg ulcers of all or any specific aetiology in residents solely of privately run nursing care homes could not be found in the literature. However, Wipke-Tevis et al (2000) recorded a 2.5% venous ulcer prevalence on admission to long-term care facilities in Missouri in a population of 33,321. Their survey recorded an incidence of venous ulceration of 2.2% after one year of residential care. Leg ulcers were only found in 10 of the 16 nursing care homes in the survey, so it is possible that residents with these conditions might be cared for by nurses with irregular exposure to leg ulcers and without specific training in management. This situation could translate into lack of effective action, either with under or over referral to TV service. Leg ulceration is time-consuming, costly, and a potential source of unnecessary hospital admissions, although specific data regarding this was not identified within this audit.

Lack of specific equipment within the nursing care homes, e.g. hand-held Dopplers, could prohibit staff from providing appropriate care, and maintaining assessment and treatment skills can be difficult if conditions only present irregularly. Careful targeting of training and support will be necessary to ensure that routine aspects of leg ulcer care is managed by nursing home nurses and does not become a service stumbling block. The authors speculate that the lack of leg ulcer assessment and management skills may have resulted in the 17 unspecified wounds recorded in this survey. If this is the case, it is possible that the wound care may not be consistent with best practice guidelines.

This diagnostic gap is known to occur; for example with leg and foot ulcers, with Drew et al (2007) reporting 26% going undiagnosed. This is not just a local or UK-based issue (Posnett and Franks, 2008). Alternatively, as data was collected from a review of the residents' care home records, the reason for the 9% of wounds that were unspecified could be due to incomplete documentation of assessment.

The frequency (18 of 195 total wounds in a population of 458 residents) of dermatological conditions in this survey seem significantly less than the rate recorded by Smith et al (2002). In their epidemiological study in an Australian nursing home, 54.4% had at least one skin disease registered among their medical records. This current study did not specify dermatological conditions beyond dermatology (18 wounds), malignancy (3) or non-dermatology skin lesions (2), so comparison with the Smith et al (2002) rates is not possible.

Conclusion

This wound prevalence audit in nursing care homes has provided some baseline information to help set priorities for the new nursing care home TV service in North Devon. The first priority is to reduce pressure ulcer rates. The mechanisms to achieve outcomes will need to focus on changing culture from acceptance that ulcers occur in older people to zero tolerance. This could be achieved through education, introduction of risk assessment and care planning for

prevention, and utilisation of the EPUAP/NPUAP grading system and ensuring reporting within the care home for self-improvement. Future studies should distinguish between care home-acquired pressure ulcers and those acquired elsewhere.

Further priorities will be the offering of wound care guidelines containing typical pathways of care for specific situations, such as leg ulcer and skin tear management. However, it is to be recognised that nursing care homes are independent organisations with their own professional structures and internal procedures, so exportation of local NHS organisation policies will need to be negotiated rather than imposed.

From a tissue viability service perspective, work to introduce an operational policy mapping out referral routes and response times will clarify for care home staff access for help for their clients. There will also be exploration of the use of telemedicine systems to determine the value for prioritisation for consultation and prompt follow-up of patients and their outcomes to treatment. The survey has also recorded a simple benchmark for future contract monitoring. It is planned to undertake a repeat prevalence audit in one year. **WUK**

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Key points

- ▶▶ Of 458 nursing care home residents surveyed in 16 homes, 115 (25%) had some kind of wound.
- ▶▶ The most common were pressure ulcers (44%).
- ▶▶ Most, but not all care homes used a pressure ulcer risk assessment tool.
- ▶▶ The first priority of the new service is to reduce pressure ulcer incidence.