Clinical audit examining pressure ulcer incidence among end-of-life patients

KEY WORDS
- End-of-life care
- Pressure ulcer incidence
- Pressure ulcer
- SCALE

Preventing pressure ulcers in patients at the end of their life often proves difficult despite adequate interventions to prevent pressure ulcers. Difficulty preventing ulcers in such patients is due to many factors, including reduced peripheral tissue perfusion, reduced mobility, malnutrition, incontinence, pain and irregular blood chemistry.

This article reports on the results from an audit that examined the mortality rates of all patients reported to have grade 2, 3 or 4 pressure ulcers in acute care within an NHS trust over a 6-month period. Incident reporting provided the data, and each case was reviewed to see whether that patient had passed away within an 8-week period following the report.

From the data, 44% of the patients reported to have a pressure ulcer had passed away within 8 weeks. The results indicated that the general organic deterioration of a person towards the end of life affects the skin's integrity and its ability to maintain normal homeostasis. This increases the incidence of pressure damage due to the body's reduced ability to regenerate healthy skin cells, maintain skin integrity, reduce infection and provide an adequate blood supply of nutrition and oxygen to the skin.

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The NHS places a lot of emphasis on reducing the incidence of pressure ulcers, with the aim of eradicating those that may be avoidable (National Patient Safety Agency, 2010). According to Stop The Pressure, a national campaign that NHS England Midlands and East introduced, pressure ulcers affect an estimated 700,000 people in the UK each year. Research states that 80–95% of pressure ulcers are avoidable. However, in some cases where appropriate pressure ulcer prevention interventions are in place, pressure ulcers are unavoidable.

Our NHS trust in Wolverhampton has seen a high incidence of pressure ulcers in patients at the end of their lives. The local population has a lower socioeconomic status than the rest of the UK, which increases the prevalence of complex comorbidities and health conditions. This means the trust delivers care to a higher than average percentage of people with complex comorbidities, such as renal disease, diabetes, heart and liver disease, and people who are bariatric patients; these comorbidities can in turn lead to an increased risk of skin abnormalities and delayed wound healing.

End-of-life skin changes

The end of life is defined as a phase of life when a person is living with an illness that will often worsen and eventually cause death. This phase is not limited to the short period of time when the person is moribund.

Organ dysfunction can happen at any time but it usually occurs at life's end, during an acute critical illness or with severe trauma (Sibbald et al, 2009). Organ failure can lead to deterioration of other functioning organs that then causes further deterioration and possible death. The skin is the largest organ in the body and it is also susceptible to failure in the end of life patient.

Towards the end of life, people experience decreased mobility, loss of function, malnutrition and hydration, incontinence, decreased tissue perfusion and localised hypoxia. This means

Table 1. Patients with reported incidents and proportions of those who died over 6 months

	Patients incident reported (n)	Patients who died after incident report (n)	Patients who died after incident report (%)	Patients who died and were reported to have grade 2 PU	Patients who died and were reported to have grade 3 PU	Patients who died and were reported to have grade 4 PU
July	60	22	37%	64%	36%	0%
August	57	31	54%	68%	32%	0%
September	67	30	45%	70%	30%	0%
October	35	17	49%	71%	29%	0%
November	58	27	47%	59%	37%	4%
December	53	19	36%	68%	32%	0%
Total	330	146	44%			

PU = pressure ulcer

the body's ability to use vital nutrients and other factors required to sustain normal skin function is compromised, and that skin perfusion is ineffective. Therefore, skin has an increased vulnerability to external factors such as pressure at the end of life.

Pressure ulcers in end-of-life patients develop in part due to the skin changes that accompany ageing and disease progression, and sometimes patients choose not to participate in preventative strategies (Westwood, 2014). Originally, Charcot (1877) described a butterfly-shaped ulcer over the buttocks in some patients in their final days of life. Kennedy (1989) later defined this butterfly-shaped pressure ulcer over the sacrum or coccyx in some end-of-life patients as a Kennedy ulcer.

Steps have been taken to guide nurses on how to care for patients' skin at life's end. In 2009, a consensus statement on skin changes at life's end (SCALE) was written by an independent group of experts supported by an educational grant from Gaymar; it is available on the European Pressure Ulcer Advisory Panel's website (Sibbald et al, 2009). The SCALE document provides guidance for nurses on the care of patients' skin at the end of life, with 10 statements that incorporate best evidence-based practice to enable care planning in accordance with the patient's symptoms and wishes.

The DH (2008) states that the majority of deaths occur following a period of chronic illness and that 58% of patients die in hospital. Therefore, to study pressure ulcer incidence among end-of-life patients, this audit looked at the pressure ulcer incidence among inpatients at one acute hospital site and established whether each patient had passed away within an 8-week period following the report.

METHODS

This audit was undertaken by obtaining a list of all the patients who were reported on the Datix risk management and incident-reporting system over a 6-month period to have grade 2, 3 or 4 pressure ulcers. The patient's clinical notes and medical images were then examined on the clinical web portal to validate the data. Information regarding mortality was gathered using patients' archived clinical notes and status on the trusts clinical web portal. Unfortunately, the data may not have captured all those patients who had passed away as the clinical web portal may not have been up to date; therefore, these patients wound not have been included in the statistics. A percentage was calculated from the number of patients reported each month against the number of people who died, and the overall percentage for the 6-month period was calculated.

RESULTS

The results indicate that a large proportion of pressure ulcer incidence is related to the physiological changes that occur at the end of life. The audit results (*Table 1*; *Figure 1*) indicate that over the 6-month period that was studied, 44% of patients reported to have grade 2, 3 or 4 pressure ulcers died within an 8-week period following the incident report, with the large majority of these being within a 6-week period. The results from the patients' incident reports indicate that

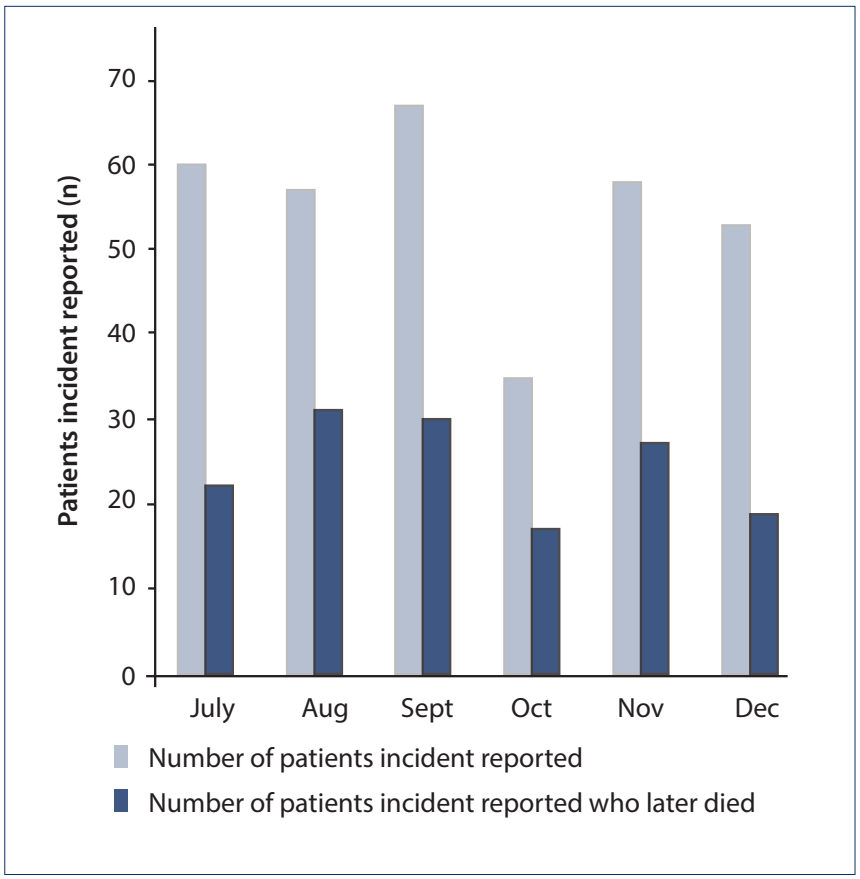

Figure 1. The proportion of patients with incidents reported who later died

the majority of incidents involved single-site locations, 66% were grade 2 pressure ulcers, and 73% were located on the buttocks or sacrum.

DISCUSSION

The findings of the audit show that out of all the 330 patients who were incident reported to have a grade 2, 3 or 4 pressure ulcer over a 6-month period, 146 had died within an 8-week period following the incident report. This supports the fact that the trust serves a large proportion of patients with a poor health status and potentially multiple comorbidities. As the trust provides care to this group of patients, it can expect a higher incidence of end-of-life patients and, therefore, a higher incidence of pressure ulcers. However, it is apparent that more work needs to explore the cause of death in relation to pressure ulcer incidence.

The skin is the body's largest organ and, like any other organ, is subject to a loss of integrity. It has an increased risk of injury due to both internal and external insults (Sibbald et al, 2009). Individuals with advanced disease, such as cancer, heart disease, respiratory disease and renal disease, have an increased prevalence of factors that increase the risk of pressure ulcers developing, such as reduced peripheral tissue perfusion, reduced mobility, malnutrition or dehydration, incontinence, pain and irregular blood chemistry.

The body's ability to tolerate pressure and maintain skin integrity is greatly compromised in a person who is at the end of their life. The audit results reflect this and suggest that almost half of reported pressure ulcer incidents were likely to have resulted from the body's general deterioration towards the end of life. Beldon (2011a) found that patients who developed a pressure ulcer after admission were older and had a higher risk of pressure ulcers than those who maintained skin integrity.

Chamanga (2001) stated that most, if not all, pressure ulcers are preventable. Wilson (2012) and Beldon (2010) agreed that the overall aetiology of pressure damage and the multiple pathologies experienced by end of life patients make a certain amount of pressure damage unavoidable. Langemo and Black (2010) also agree and state that pressure ulcers occurring at the end of life are often not preventable and that efforts to prevent them are complicated because patients are frail and have multiple risk factors as well as comorbid conditions. Beldon (2011b) asserts that while pressure damage can be inevitable in the dying patient, it should not be simply accepted by the nurse. Meaume et al (2005) advised that comprehensive pressure ulcer prevention is effective in reducing pressure ulcer incidence rates and that it can be cost effective.

Due to the declining health status of individuals with multiple comorbid conditions and/or terminal illness as they approach the end of life, clinicians need to develop realistic care planning and achievements to prevent and treat wounds (Guy, 2012). The DH (2009) emphasises the importance of effective healthcare partnerships that use teamwork to coordinate interventions.

CONCLUSION

Preventing and reducing the incidence of pressure ulcers is high on the agenda. While it has been assumed that 80–95% of pressure ulcers are avoidable, in some cases where patients have multiple comorbidities and are deemed to be near the end of their lives, skin damage is unavoidable. The audit has shown that out of 6 months' worth of pressure ulcer incidents reported in the NHS trust, 44% of the individuals involved went on to pass away within 8 weeks of the report being submitted. There does need to be further research into the incidence of pressure ulcers in relation to skin failure, but current research advises an individualised approach to comprehensive pressure ulcer prevention. WUK

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