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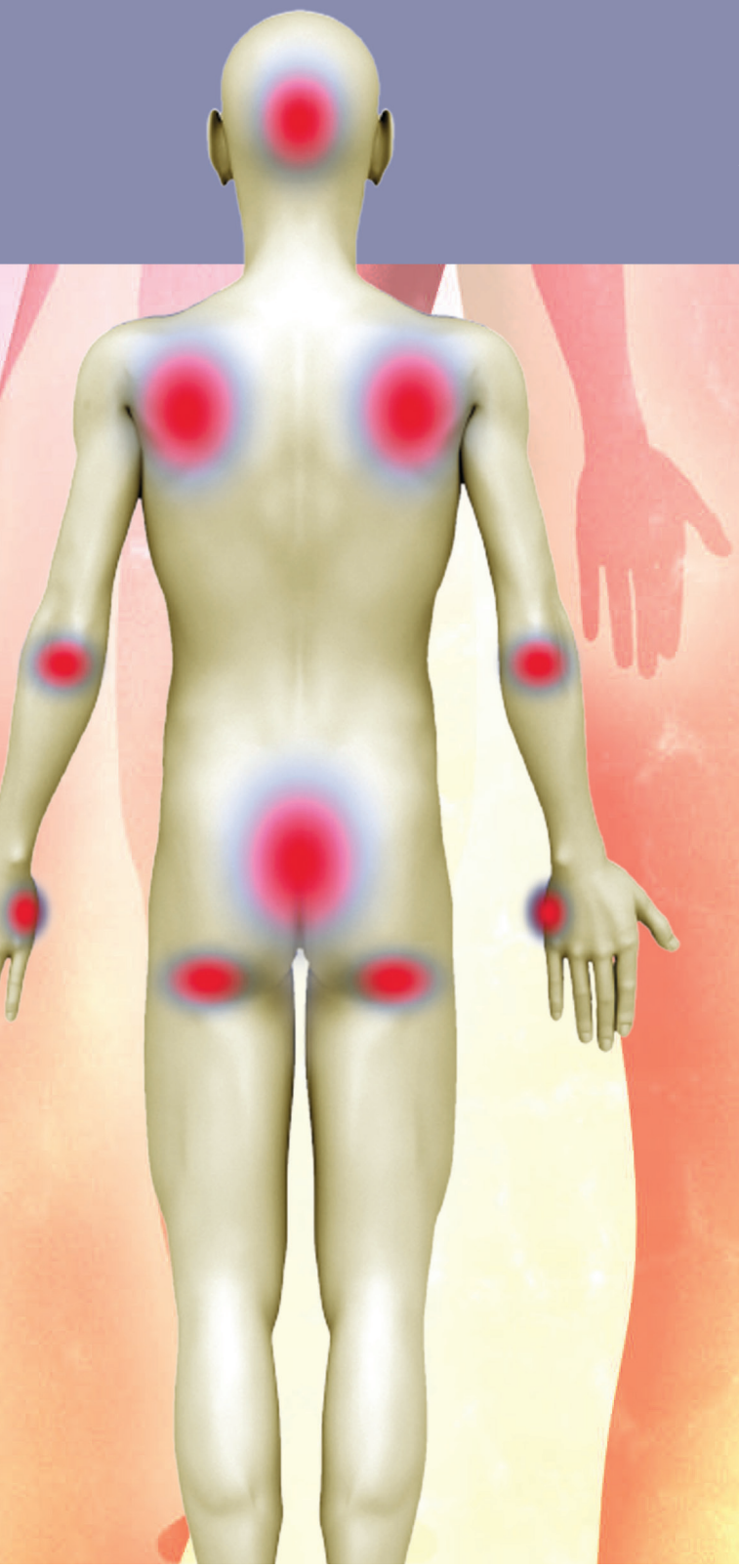
PRESSURE ULCERS



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Unit 1.01 Cargo Works
1–2 Hatfields
London SE1 9PG
Tel: 0207 627 1510
www.wounds-uk.com
enquiries@woundgroup.com

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EDITORIAL

REVIEW

PRACTICE DEVELOPMENT

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Pressure ulcer categorisation: time and money well spent?

JACQUI FLETCHER
Clinical Editor, *Wounds UK*, Fellow, NICE and Clinical Strategy Director, Welsh Wound Innovation Centre, Cardiff

Pressure ulcer occurrence continues to challenge healthcare providers, despite intensive activity around prevention. Increasingly, organisations are focusing on specific areas where targeted activities may improve patient outcomes. These may be specific anatomical areas, such as heel or mask-related ulcers, or particularly vulnerable populations, such as wheelchair-bound patients or the frail elderly. Identifying such specific risks is complex but crucial, as the standard risk assessment tools may either over-predict risk or miss those at significant risk. Standard interventions, such as those utilised in a SSKIN bundle, may not trigger appropriate preventions, e.g. to avoid mask-related pressure ulcers.

Prompted by the appalling care identified by Operation Jasmine — the UK's biggest enquiry into alleged neglect in six homes — a review of the patients' and their families' experiences made strong recommendations for increasing the strength of reporting of category III and IV pressure ulcers, suggesting that they are notifiable incidents (Flynn, 2015). While perhaps extreme, this reflects how seriously such damage is taken. Such stringent reporting may help with triangulation of data on pressure ulcer occurrence — which current reporting mechanisms fail miserably to do, with many organisations having multiple mechanisms of reporting, none of which tally with one another (Coleman et al, 2015).

It seems that for every example of good care — delivery of targeted interventions, inclusion of groups not previously reviewed — there are still patients who suffer from avoidable harm. A key theme of the Operation Jasmine review was the importance of documentation, both in terms of recording care delivered and police review evidencing what had or had not happened. A consistent theme was a failure to identify early signs of skin damage or even to identify skin damage as a pressure ulcer.

However, despite the plethora of research that suggests it is virtually impossible to reach consensus on the category of a pressure ulcer, organisations continue to expend a great deal of time and effort attempting to do just that. Tissue viability nurses (TVN) and university lecturers devote hours to teaching classification systems; in England, the TVN then wastes a considerable amount of time each month checking every Safety Thermometer capture, validating the category of damage reported, and ensuring that a wound is actually a pressure ulcer. In the rest of the UK, whilst the Safety Thermometer is not used, TVNs still validate the category of damage prior to any onward reporting via Serious Incident systems.

It has been proposed repeatedly that the categorisation of damage should be simplified to 'superficial' or 'deep' — yet this suggestion has not been taken up, despite the most recent guidelines clearly identifying differing histopathology. Numerical categorisation appears to be a distractor; it serves no purpose in planning care, and does not guide the treatment plan with regards to equipment used or dressing selected. In terms of audit, it is worse than useless: even where the category has been validated by an 'expert' such as a TVN, research indicates this categorisation will be inconsistent across a group of similar experts.

So, is this a wasteful activity? Could this resource be better spent identifying those most at risk, and implementing and documenting appropriate care? Could time spent teaching pressure ulcer categorisation be used instead to outline the mechanisms by which they occur, ensuring clinicians properly understand the impact of shear forces, particularly in the seated patient and the semi-recumbent patient in a bed?

The NHS has limited resources; it is of paramount importance that we use them wisely to deliver high quality harm-free care to patients. WUK

Coleman S, Smith I, Brown S, Wilson L and Nixon J (2015) Executive Summary: Pressure ulcer and wounds reporting in NHS Hospitals.

Flynn M (2015) *In Search of Accountability: A Review of The Neglect of Older People Living in Care Home Investigated in Operation Jasmine.* Available at: http://gov.wales/docs/dhss/publications/150714ojreporten.pdf (accessed on 26.08.2015)

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Documentation in pressure ulcer prevention and management

KEY WORDS
- Documentation
- Pressure ulcer
- Risk assessment

Effective record keeping underpins service delivery and provides a record of the quality of care delivered. Pressure ulcer risk assessment, prevention strategy and pressure ulcer care provision are a key element in the nursing process and are correctly a focus area within the safety agenda. This article reviews issues related to the documentation of pressure ulcer risk assessment and prevention and asks whether the time is right to move towards a universal system of pressure ulcer care documentation, linked to reporting within the NHS.

KATHRYN VOWDEN
Lecturer, University of Bradford; Honorary Nurse Consultant, Bradford Teaching Hospitals NHS Foundation Trust

PETER VOWDEN
Visiting Honorary Professor Wound Healing Research, University of Bradford; Honorary Consultant Vascular Surgeon, Bradford Teaching Hospital NHS Foundation Trust

The purpose of documentation and accurate record keeping has been described by the Nursing and Midwifery Council (NMC, 2009) and forms part of their Code of Practice (NMC, 2015). Documentation should aid communication and is the vehicle by which healthcare professionals share information between members of the multi-professional team responsible for the care of an individual. Effective documentation should provide evidence of the services and care delivered, showing how decisions related to patient care were made, and by so doing ensure continuity and consistency in care provision. Effective record keeping should support the delivery of services by aiding effective clinical judgement and decision making. It should also support clinical audit, research, the allocation of resources and performance planning (NMC, 2009).

The quality of nursing documentation, indeed all patient care documentation, is an important issue as documentation provides a record of the standard of care rendered not only by an individual but by the entire clinical team and the institution or service provider. Nursing documentation should, but often fails to, demonstrate the rational and critical thinking that underpin clinical decision making and interventions while also providing a timeline for patient care and progress. There is no standardised format for documentation and a number of frameworks exist to assist nurse including narrative charting, clinical pathways, problem-orientated records and care-element focused notes (Blair, 2012). The recent introduction of electronic patient record systems can allow healthcare professionals access to more complete, accurate and legible and up-to-date patient data (Wang, 2011). Wang et al (2011) also state that standardised nursing language is essential because a uniform and controlled vocabulary enables electronic documentation systems to aggregate data. Tubaishat et al (2015) comment, however, that it remains uncertain whether electronic records of pressure ulcer data offer advantages over paper records.

Irrespective of the documentation system employed, all record entries should, whenever possible, be contemporaneous and should always be factual, legible, signed and dated. *Table 1* outlines the basic requirements. Wang et al (2011) detail the quality criteria for nursing documentation

Table 1. Effective note-taking

Your basic notes should be:
- Contemporaneous
- Accurate
- Objective
- Legible
- Free of:
  - Grammatical/spelling errors
  - Abbreviations
  - Errors/erasures
    - Initial and date/time any alterations
- Completed in blue or black ink
- Dated, times and signed:
  - Print name

highlighting the structure, process, content, nursing assessment, nursing problem/diagnosis, goal, intervention and evaluation themes that should be reflected in the records. Jefferies et al (2010), in a meta-study of the essentials of quality nursing documentation, identify seven essential components for quality nursing records and conclude that producing quality nursing documentation is a complex and challenging area.

Accurate documentation improves communication and continuity of care delivery as well as providing accountability, ensuring an accurate data trail with which to address complaints and litigation. Actions taken and the documentation of events should conform to local and national guidelines and policies and if a deviation from these occurs the reason for the deviation should be clearly documented. Records do not only have a role in a patient's care but may also be evidence in a court of law so personal comments and criticism of patients, staff and care should be avoided. When litigation occurs, it is frequently long after the care event. Documentation has to be adequate and written in such a way for others to be able to follow the assessments and decision-making process and support the care delivery.

Lowson (2004) commenting on the Health Service Ombudsman reports on referred cases states that many have three things in common:

- Poor communication
- Poor documentation
- A failure to identify or involve the practitioner concerned in the initial investigation.

It is clear, therefore, that changes are required to enable better coordination and continuity of care provision and that improvements can be made. However, a balance needs to be met between standardised documents and the requirements for individualised care.

PRESSURE ULCER DOCUMENTATION

Pressure ulceration is regarded as a quality indicator for the standard of nursing. In 2001, Culley highlighted the problems associated with inadequate record keeping in tissue viability in relation to a number of legal proceedings. Has the situation improved? In 2015, White et al, when contributing to a debate, highlighted that most of the legal case reports where substantial damages were awarded showed one key factor: poor documentation.

Despite pressure ulcer development being a recognised focus of concern and a marker of care quality, there remains anxiety in relation to nursing documentation. O'Brien and Cowman (2011) comment that pressure ulcer care is not standardised and requires further development. Thoroddsen et al (2013) report in a study of pressure ulcer documentation in Scandinavia that the purpose of documentation in terms of pressure ulcer prevention and care was not met, which had the potential to jeopardise patient safety and negatively impact on the continuity and quality of care provided. The greatest lack of accuracy related to early skin damage and category 1 pressure ulcers. Moore and Cowman (2012) comment that the current practice of pressure ulcer prevention show several areas for improvement, particularly those of risk assessment, care planning and documentation. An area of particular concern related to the documentation of repositioning, 76% of patients with an existing pressure ulcer had no repositioning care plan documented. This is clearly unacceptable, placing both the patient and the care provider at risk.

Guidelines (National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance [NPUAP], 2014; National Institute for Clinical Excellence [NICE], 2014) state that pressure ulcer risk assessments are an ongoing process that should be undertaken at first patient contact and should be repeated regularly, if the patient moves between care facilities, including ward areas, or if their medical condition changes. Guidelines (NPUAP, 2014; NICE, 2014) also demand that patients have an individualised care plan that reflects this risk assessment and that it is regularly reviewed and adapted to accommodate changes in their medical condition or social situation. Deviations from local or national guidance or the agreed care plan should be clearly documented and the rationale for those actions noted. Pressure ulcer documentation should record linked areas of care:

- Skin assessment and damage categorisation
- Risk assessment
- Care plan
- Pressure ulcer wound care.

These should be integrated with other care strategies such as nutritional status, use of devices and hosiery for deep vein thrombosis prevention. Modern care provision focuses on the role of

"Documentation has to be adequate and written in such a way for others to be able to follow the assessments and decision-making process and support the care delivery."

Table 2. Levels of photography consent (Institute of Medical Illustrators, 2007)

Level 1 consent:
- For patient records only
- Verbal consent
- Photos taken in the "patient's best interests"

Level 2 consent
- For patient records and teaching
- Signed consent must be obtained

Level 3 consent
- For publication (the specific publication must be included in the consent form)
- Signed consent must be obtained.

the multidisciplinary team. Pressure ulcer prevention and treatment documentation must reflect this, integrating the role of dietician, physiotherapist and medical staff in the pressure ulcer prevention strategy and care delivery records (Samuriwo, 2012).

How good are our notes? Review of case notes from a variety of institutions and care settings identifies a number of common failings.

- Variation in the type and quality of the assessment and care documentation and structure between institutions and even within institutions
- Failure of accurate and specific initial risk assessment
- Failure to repeat adequate skin and risk assessments
- Failure to determine the correct aetiology and category of a wound
- Inconsistency among staff
- Using and failing to complete adequately/consistently multiple documentation forms
- Lack of empowerment to report abnormal findings.

SKIN ASSESSMENT

Basic skin assessment should record skin integrity, especially in areas of pressure, colour changes and discoloration and variations in temperature, firmness or moisture and take into consideration any pain or discomfort reported by the patient (NICE, 2014). Initial assessment should occur as soon as possible (within 8 hours of admission or at first contact in the community) and be repeated as part of an ongoing risk assessment process, the frequency being defined by the clinical setting, and individuals, risk and changes in their clinical status. Skin status should also be recorded on discharge or transfer to another care setting (NPUAP, 2014; NICE, 2014).

Inter-observer variation must be minimised if changes in skin and pressure ulcer status are to be recognised. Standardised descriptors should be used that are clear and unambiguous, defining the location, size, nature and probable aetiology of any skin damage. Where skin redness is observed, note if it is blanching or non-blanching. This applies to both intact skin and to areas surrounding a pressure ulcer. If skin damage is considered to be possibly pressure-related note its category and complete any reporting documentation required. Johansen et al (2014) observed that the documentation improved when a wound was present and a wound assessment was completed. This observation may be important in the recognition and documentation of deep tissue injury (DTI). Documenting and illustrating areas of intact skin damage on a wound chart could improve the nursing record and help identify issues in the patient journey by providing a more detailed timeline.

Samuriwo and Dowding (2014) in a systematic review concluded that assessment tools were not routinely used to identify pressure ulcer risk, nurses tending to rely on their own knowledge and experience rather than research evidence to deliver skin care. They concluded that further research was needed into nursing judgement and decision-making in relation to pressure ulceration.

PHOTOGRAPHY

Photo-documentation of pressure damage is a useful communication tool and can assist in assuring consistent pressure ulcer categorisation; it can also help in patient communication. Jesada et al (2013) found that a digital photograph, in combination with clinical information, increased the accuracy of pressure ulcer assessment and documentation, while Baumgarten et al (2009) found that digital imaging was a valid tool for defining pressure ulcer grade. The appropriate level of consent (*Table 2*) should be obtained for any photograph taken of a patient by a healthcare professional. The photograph forms part of the patient's medical records and as such is subject to the Data Protection Act. The photograph should be of good quality and be accurately labelled, which should include the date, time and patient ID and a measurement scale and colour reference (*Figure 1*). Images should be stored and transferred securely in their original format.

RISK ASSESSMENT SCORES

A variety of risk assessment tools are available to assist in patient assessment and risk prediction. Of those available, the most commonly used in a hospital setting is the Waterlow score. However, the Waterlow score in some domains is led by clinical judgement and can therefore be open to an individual nurse's interpretation of items in the scoring system. This can potentially have a significant impact on the calculated risk score.

Confusion can exist in the interpretation of simple descriptors such as patient's mobility, but most doubt is in the interpretation of special risks. What constitutes single and multi-organ failure and how to combine scores in areas of special risk? The weighting of events in the special risk categories means that misinterpretation has the potential to markedly change a patient's calculated risk status and the under- or over-prescription of equipment and care. In her booklet on Waterlow (2005), Judy Waterlow comments:

"This is another area where it is expected that the assessor will use their clinical knowledge and not just make an arithmetic total."

CARE PLAN

Recording the plan of care, the ongoing assessment and noting the implementation of the prescribed care and skin observations in a way that provides all elements of care, audit and communication requires a complex and dynamic user-friendly document. Despite this need, there are multiple documents available. Not all record the required detail that truly provides continuity and safe practice. Any ambiguity or complexity without instruction to complete will result in inaccurate data or even no data completed.

This is not an issue limited to secondary care: commenting on care planning in nursing homes, Nazarko (2007) reports that the most common problems are:

- Incomplete initial assessment
- Unrealistic care plans that lack a clear objective
- Incomplete or absent evaluation.

CARE BUNDLES

Care bundles are widely seen as a method to improve care by ensuring a consistent approach to both risk assessment and patient monitoring. Care bundles are 'a structured way of improving the processes of care and patient outcomes: a small, straightforward set of evidenced-based practices — generally three to five — that, when performed collectively and reliably, have been proven to improve patient outcomes (Resar et al, 2005). Chaboyer and Gillespie (2014) conclude that the benefit from using pressure ulcer related care bundles may include acting as a prompt for both patients and staff to implement appropriate preventative and care strategies.

Pressure ulcer care bundles provide a pre-constructed plan of care that includes five care elements (e.g. SSKIN) in an easy to follow document structure, providing reminders to the care required. However, they are not necessarily individualised and vary greatly in design and detail. While some versions provide a linked and structured care strategy, they can become a sea of meaningless ticks that do not accurately define a problem or detail the specific care provided in response to an observation. Johansen et al (2014) support this observation, commenting that care plans were sometimes regarded as a "tick the box" exercise. They can also fail to integrate with other documentation, repeating details required elsewhere in the care record.

CONCLUSION

A common theme of systematic failure resonates through a decade of studies and reviews of nursing documentation, particularly those related to pressure ulcer prevention and treatments, where there remains a gulf between risk assessment and care planning. Lessons can be learned from a retrospective review of care and the impact that the style and structure of standardised forms have on care delivery. Pressure ulcer prevention documentation must allow individualised patient-specific details to be recorded by the whole multidisciplinary team.

Pressure ulcer risk assessment and prevention is rightly regarded as a quality indicator and safety issue within the healthcare community. There is a requirement for a universal documentation system that is managed within nursing time allocation and allows contemporaneous data entry with dynamic risk assessment and care provision. WUK

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Does debridement have a role in the accurate assessment of patients with pressure ulcers?

KEY WORDS
- Classification
- Debridement
- Pressure ulcer

There is considerable emphasis at a strategic level across the whole of the UK to reduce the number of patients who develop a PU, with particular focus on the more serious Category III and IV ulcers. However, it has been demonstrated that practitioners have difficulty differentiating between a Category II and a Category III ulcer, which has political, legal and financial implications. Accurate classification of a wound may be assisted by the use of a monofilament debridement pad, allowing practitioners to better visualise the wound bed and differenitate with greater accuracy between a Category II and III ulcer.

MICHELLE PORTER
Tissue Viability Specialist Nurse, Peterborough and Stamford Hospitals NHS Foundation Trust

DECLARATION
Supported by Activa Healthcare

Pressure ulcers (PUs) have been on the NHS agenda for well over 10 years. In 2004, it was reported that PU care cost the NHS between £1.4 and £2.1 billion annually (Bennett, 2004). This was revised in 2008, when it was estimated that as many as 400,000 individuals in the UK develop a new PU annually, with costs in the range of £1.8–2.6bn per year (Posnett and Franks, 2008). In 2009, despite initiatives to reduce the incidence of PUs, the annual cost to the NHS remained around £2.64 billion (Riordan, 2009).

This has led to considerable emphasis at a strategic level to reduce the number of patients who develop a PU. In 2010, PUs became a focus of the High Impact Actions initiative: *Your Skin Matters;* this estimated that 4–10% of NHS patients will develop a PU. It called for the elimination of all avoidable Category II, III and IV PUs (NHS Institute for Innovation and Improvement, 2009). Collecting monthly incidence data on PUs using the NHS Safety Thermometer means that hospitals are now counting PUs, with the potential for organisations to review the percentage of patients who received harm-free care each month and also to see the national picture (Wounds UK BPS, 2013). From April 2015, data collected using the Safety Thermometer are included in the NHS Standard Contract under Schedule 6B (Health and Social Care Information Centre, 2015).

CLASSIFICATION SYSTEMS FOR PUS

In this time of an increased spotlight on PU development in healthcare, it is necessary that the reported grades are accurate. However, reporting of PUs has been extremely confusing as different methods of classification and reporting have been used. This has led to considerable discussion about classification, definitions of avoidable and unavoidable and differentiating between PUs and ulcers due to other causes (e.g. moisture lesions) (see *Box 1*, p.11).

Determining the causative factors of skin damage can be challenging. Defloor et al (2005) reported on the difficulties staff have in determining the grade and cause of damage. Although tissue viability nurses are best placed to assess PUs, this is not always practical in terms of workload or impossible to achieve. Support is needed to help ensure reporting is accurate (Downie and Guy, 2012).

Early categorisation systems included one by Reid and Morrison (1994), which identified 13 different PU grades and was used throughout the UK. This early scoring system was felt to be too complex and lead to incorrect categorisation of PUs. The European Pressure Ulcer Advisory Panel (EPUAP) released its first classification system in 1999. This comprised four clear categories of PU. However, studies by Pedley (2004) and Defloor et al (2006) highlighted the limitations in practical application of the classification system. In 2009, the EPUAP came together with the National Pressure Ulcer Advisory Panel (NPUAP) to provide a universal system for grading PUs. However, the advisory panels produced two slightly different tools, with the NPUAP including two additional definitions: deep tissue injury and unstageable PUs, suggesting

Box 1. Differentiating between PUs and IAD

Moisture lesions — also referred to as incontinence associated dermatitis (IAD) — and a PU can coexist in the same area (Beeckman et al, 2015). The EPUAP first proposed that moisture lesions should be differentiated from PUs in 2005 (Defloor et al, 2005). It was apparent at this time that a large proportion of wounds identified as pressure damage were lesions related to moisture and, possibly, friction. They highlighted the wound-related characteristics (causes, location, shape, depth, edges, and colour) and patient-related characteristics to help differentiate between a PU and a moisture lesion (Defloor et al, 2005).

In 2015, Stephen-Haynes reported on the development of a simple tool that would enable staff to differentiate between the two types of lesion. This lead to improved PU data collection, which is required to achieve nationally set targets. The audit followed a Trust-agreed process for evaluating a new tool within a primary care Trust, and was undertaken over a 4-month period. All nurses involved attended a series of educational roadshows. Responses were positive, with staff stating that the 'Moisture or Pressure Tool' (MOPT) was easy to use. The tool advocates the use of a monofilament fibre debridement pad to assist in PU categorisation by removing debris and aiding visualisation of the wound bed (Stephen-Haynes, 2015).

that consensus is difficult to achieve around how to classify ulcers where it is not possible to visualise the wound bed, but there is evidence of injury to the underlying tissues (EPUAP/NPUAP, 2009).

Since the National Institute for Health and Clinical Excellence (NICE) (2005) recommended the 2009 EPUAP/NPUAP system, it has been widely adopted in the UK with inclusion of the category of unstageable, but not deep tissue injury. Continued debate surrounding the categorisation of PUs and the subjective nature of grading in practice has meant that some healthcare practitioners still feel unable to confidently categorise PUs.

CLASSIFICATION CHALLENGES

The requirement to report both avoidable and unavoidable PUs has made classification more complex. Targets are set around reducing the number of avoidable PUs, which means that unavoidable PUs should not be included in such reports.

Defining an unavoidable PU means to measure and evaluate the quality of care. The use of care bundles such as SSKIN (Whitlock et al, 2011) and ASKINS (McDonagh, 2013) can be used to assist the overall decision. Overarching is the definition by the Department of Health (2010), which encompasses all areas of care to ensure that the PU is truly unavoidable. With the definition including standards of care, evaluating of goals and impact of interventions, as well as refusals and overall care management, determining an unavoidable status can be challenging.

To date the government has advised that anyone who develops a Category III or Category IV PU should be referred as a safeguarding risk (Care Act, 2014). However, each case should be reviewed on an individual basis to assess whether it was unavoidable before a safeguarding referral is considered.

Anecdotally, there has been a mixed reaction in practice to the safeguarding status surrounding PUs. The threat of being labelled as 'unsafe' can be seen as creating additional stress on an already overstretched workforce. However, safe care should be achievable for all, so measuring and evaluating care should be a part of all aspects of healthcare.

There is also debate around medical device-related pressure ulcers, which are a real and growing concern for many. Care is often more complicated than preventing other PUs as the device may be an essential component of treatment. Although most are avoidable, not all are. The recent guidelines from the international pressure ulcer advisory boards (NPUAP/EPUAP/PPPIA, 2014) for the prevention of these ulcers focuses on the use of appropriate means of relocation, redistribution and skin care under the device. Mucosal tissues are especially vulnerable to pressure from medical devices, such as oxygen tubing, endotracheal tubes. The current position is not to classify PUs on muscosal surfaces due to the difficulties in differentiating between partial and full-thickness damage (TVS, 2012).

With the introduction of the Department of Health's Serious Incident Framework (2015/16) it is clear that PUs also need to be considered in relation to the level of harm that is present. While some Category III and IV PUs do meet the definition of severe harm, not all do. For example, an infected Category II PU may lead to septicaemia and death, whereas a small Category III PU on the ear (designated because of exposed cartilage and lack of fatty tissue) may not have serious consequences for the patient (TVS, 2012). As such the current

"The threat of being labelled as 'unsafe' can be seen as creating additional stress on an already overstretched workforce."

classification system cannot be relied on as a single measure of severity and a system that differentiates between intact skin, superficial and deep tissue damage may be more helpful in determining the level of harm and deciding on what clinical actions need to be taken.

ARE NURSES CLASSIFYING PUS CORRECTLY?

Kelly and Isted (2011) audited nurses' ability to classify PUs correctly in a 500-bed district general hospital. Each ward was provided with a poster comprising photographs and descriptors of the five PU categories (including unstageable). Selected nurses were then shown photographs of PUs and asked to classify them. In the first audit, only 56% of the nursing and healthcare staff overall were able to correctly identify the category of PU from the photograph. An intense training programme increased this to 62% overall. There was no statistical difference in the abiilty of registered and unregistered nurses to classify PUs in either the first or second audit.

One of the key findings of the audit was that there was a degree of chance involved in classifying PUs. Category II and IV PUs were seen to be easier to identify due to the fact that the nurses were able to see whether there was no skin loss or full-thickness, muscle to bone damage. However, Category II and III classification was seen as more complicated. This was also reported by Swan and Orig (2013), who found that the classification of Category II and III PUs caused the most confusion. The level of nurses' knowledge of anatomy, especially of the skin and ability to differentiate between dermis, subcutaneous fat and muscle, may play a key role in their ability to correctly classify PUs (Kelly and Isted, 2011). This may be further complicated by the level of slough and necrotic tissue in the wound bed (Swan and Orig, 2013).

Table 1. Summary of results

Patient no.	Ulcer location	Estimated Category before debridement	Category after debridement	Debridement time
1	pannus	III	III	2 min
2	heel	III	III	1 min
3	neck	III	II	1 min 20 sec
4	buttock	III	II	1 min 15 sec
5	hip	III	II	2 min
6	penis	III	II	1 min
7	chest	III	II	1 min 30 sec
8	sacrum	III	II	55 sec
9	buttock	III	III	2 min
10	hip	III	III	2 min
11	penis	III	II	2 min 30 sec
12	left buttock	III	III	4 min
13	right buttock	III	II	1 min

USING DEBRIDEMENT TO IMPROVE CLASSIFICATION

Accurate wound classification is a crucial step in delivering safe and effective PU care. Debris in the wound bed may prevent full visualisation of its depth and extent, which can contribute to incorrect PU classification (Dowsett et al, 2014). Although the 2009 EPUAP/NPUAP classification states that Category II PUs do not contain slough, some PUs containing superficial slough or slough-like material may not be associated with full-thickness dermal loss and, therefore, may be more correctly classified as superficial ulcers or Category II.

The development of a monofilament fibre debridement pad (Debrisoft®, Activa Healthcare) is indicated for removing debris and superficial slough from the wound or skin (Strohal et al, 2013). The pad comprises monofilament fibres that are cut at the appropriate length and angle to trap debris and reach uneven areas of the skin or wound bed. Unlike some other methods of debridement, the monofilament fibre pad lifts materials out of the wound bed or from the surface of the skin and binds it within the pad, thus removing it from the wound/skin. It can be used on a range of wound types, including PUs.

Evidence is beginning to emerge to support its use in removing debris and superficial slough from PUs, which can assist clinicians in more accurate categorisation of PU severity.

Swan and Orig (2013) describe a small study in an acute hospital setting, where it was unclear whether PUs should be categorised as a Category II or III, and debridement was required to better visualise the wounds and facilitate classification. Mechanical debridement was undertaken using the monofilament fibre pad, which was found to be quick and easy to use. In 61.5% (8/13) of cases, debridement with the monofilament fibre pad revealed a more superficial pressure ulcer than had been initially estimated (*Table 1*). A maximum debridement time of 4 minutes using the monofilament fibre pad was required to reveal the wound bed.

These results suggest that use of the monofilament fibre debridement pad may lead to considerable cost savings by way of:

- More effective use of resources, such as pressure redistributing equipment, based on PU category
- Fewer time-intensive incident-reporting activities (and subsequent investigations) for PUs incorrectly designated as Category III
- Faster wound healing progression by rapid removal of devitalised tissue.

Swan and Orig conclude in their original piece of work (2013) that PU classification should be based on an assessment of the depth of damage, not tissue type. The use of the monofilament fibre pad in the debridement of PUs with superficial slough allows clinicians to clearly view the wound bed and provide more appropriate patient care (Swan and Orig, 2013).

Callaghan and Stephen-Haynes (2012) undertook a multicentre evaluation across a community Trust to evaluate whether the use of a monofilament pad to remove wound bed debris would lead to improved visualisation of the wound bed, enabling more accurate classification of PUs and clearer wound management objectives.

Rapid, safe and pain-free wound debridement was achieved between 0 and 5 minutes in all 12 patients with a PU, enabling the removal of devitalised tissue, and allowing the practitioner to classify the PU. In 11 out of 12 patients, the monofilament debridement pad also reduced the number of subsequent visits required to perform wound care (Callaghan and Stephen-Haynes, 2012).

In a further evaluation in an acute Trust over a 5-month period, Bethel (2015) found that the use of a monofilament fibre pad assisted with classification of PUs at the patient's bedside, opening up the wider debate of classification across the tissue viability community.

CONCLUSION

Accurate classification of PUs has important political, financial, and patient safety implications. While practical application of classification tools is vital to establish a standardised approach to care, identifying PUs is complex. Producing guidelines and education can help to implement best practice, but embedding the practice into day-to-day healthcare is far more challenging. Tools that help practitioners differentiate between level of harm and causative factors, may allow more accurate assessment and recording of PUs. The use of a monofilament fibre debridement pad has been shown to improve practitioners' decision-making capabilities in differentiating between Category II and III PUs where the wound bed is obscured by superficial slough. WUK

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Pressure ulcers: are they a safeguarding issue in care and nursing homes?

KEY WORDS
- Care homes
- Pressure ulcers
- Residential homes
- Safeguarding

The impact of the Care Act (Department of Health [DH], 2014) and adult legislation such as the Mental Capacity Act (Deprivation of Liberty Safeguards, 2009) has resulted in closer scrutiny of care provision and outcomes for those living in residential and nursing homes. Issues are being raised concerning safeguarding and the incidence of pressure ulcers, and whether the two are inextricably linked. A literature review was undertaken searching EMBASE, MEDLINE, PsycINFO, BNI and CINAHL, using the key words 'pressure ulcers', 'risk', 'nursing', 'care home' and 'safeguarding'. No date limits were set. Five papers were retrieved and screened; all five were included in the review. Papers were retrieved from the USA and Australia, with none retrieved from the UK. In general, the findings did not show that the incidence of pressure ulcers is considered to be a safeguarding issue. A number of variables impacted pressure ulcer development, such as: staffing levels; ratio of qualified to non-qualified staff; and lack of education in recognising and prevention of pressure ulcers. Residential homes with a high incidence of pressure ulcers delivered poor quality care. As this was a literature review, it would be beneficial to undertake a systematic review of the literature in the future.

KAREN OUSEY
Reader, Advancing Clinical Practice, Director Institute of Skin Integrity and Infection Prevention, School of Human and Health Sciences, University of Huddersfield

VICKY KAYE
Senior Lecturer, School of Human and Health Sciences, University of Huddersfield, Queensgate, Huddersfield

KAREN MCCORMICK
Associated Designated Nurse Safeguarding Adults, NHS Heywood, Middleton and Rochdale Clinical Commissioning Group

JOHN STEPHENSON
Senior Lecturer in Biomedical Statistics, School of Human and Health Sciences, University of Huddersfield, Queensgate, Huddersfield

This paper presents the results of a literature review investigating the evidence and research relating to quality and reporting mechanisms available in care and nursing homes. The review focuses on reporting of pressure ulcers and whether pressure ulcer development is perceived to be a safeguarding issue. Safeguarding of vulnerable adults has been defined as helping people with care and support needs to live full lives, free from abuse and neglect (Social Care Institute for Excellence [SCIE], 2015). The SCIE continues to define a vulnerable adult as 'any person aged 18 years or over, who is, or may be, unable to take care of themselves, or who is unable to protect themselves against significant harm or exploitation.' This definition encompasses preventing abuse, minimising risk without taking control away from individuals, and responding proportionately if abuse or neglect has occurred (SCIE, 2015). Development of avoidable pressure ulcers could be perceived as an act of neglect or harm, and therefore a safeguarding issue.

Pressure ulcers are localised areas of soft-tissue injury resulting from compression between a bony prominence and an external surface (Lyder, 2003). All age groups are at risk of compromised skin integrity if appropriate interventions are not implemented in a timely manner; however, older people who have a range of comorbidities, reduced mobility, poor cognition and poor nutrition can be at a higher risk. Indeed, Keelaghan et al (2008) reported that residents of long-term care facilities, including nursing and care homes, had higher prevalences of multiple risk factors for pressure ulcer development than community-dwelling persons. An audit undertaken across five NHS Trusts in England (Ousey et al, 2013) identified the prevalence of pressure ulcers (all categories) to be 18.1% in residents in acute and community healthcare settings. In the USA, one in nine long-term care residents have been reported as having developed a pressure ulcer (Park-Lee and Caffrey, 2004), with some homes reporting prevalences of category III and IV pressure ulcers of greater than 20% (Pieper, 2012).

Pressure ulcers represent a significant burden to healthcare environments and patients, both financially and in relation to reduced health-related quality of life outcomes globally. In the UK, estimates regarding the financial cost of treating a pressure ulcer range from £1,064 (category I) to £10,551 (category IV) (DH, 2010).

There has been some debate surrounding whether pressure ulcers are avoidable. Black et al (2011) presented the results of a consensus meeting, stating that unavoidable pressure ulcers may develop in patients who are haemodynamically unstable, terminally ill, have certain medical devices in place, and/or are non-adherent with artificial nutrition or repositioning. Although there was agreement that high-risk clinical situations could lead to unavoidable pressure ulcers, the consensus reported by Black et al (2011) was that prevention programmes should be provided, and no predetermination of pressure ulcer development should preclude prevention, regardless of setting.

There are stringent reporting mechanisms for the incidence of category II, III and IV pressure ulcers in the NHS, and for those perceived to be avoidable. However, less is known about reporting mechanisms in care and nursing homes, and whether staff in these institutions perceive pressure ulcer development to be a safeguarding issue.

METHODS

A literature review was undertaken, searching the EMBASE, MEDLINE, PsycINFO, BNI and CINAHL databases using the following key words: 'pressure ulcers', 'risk', 'nursing', 'care home' and 'safeguarding'. No date limits were set. The final number of articles included was five; one paper was from Australia (Madsen and Leonard, 1997) and four were from the USA (Berlowitz et al; 2000; Hickey et al, 2005; Baier et al, 2003; Cai et al, 2010). All papers reviewed were dated, with none being published since 2010.

Review of the papers indicated that there is currently little evidence or research investigating pressure ulcer development and the potential link to safeguarding.

QUALITY PROGRAMMES

A number of the reviewed studies discussed quality of care in nursing homes (Berlowitz et al, 2000; Madsen and Leonard, 1997). In a 5-year, US-based study, Berlowitz et al (2000) identified that the quality of a nursing home can be measured against the prevalence and incidence of pressure ulcer development in that home. They highlighted that residents who developed pressure ulcers had a number of common characteristics, including previous history of pressure ulcers, comorbidities, incontinence, immobility and low body mass. They noted that pressure ulcers occurred in predominately older (82.4 +/-10.3 years), female residents (77%) with reduced mobility.

Data analysis identified that the implementation of guidelines and adoption of quality improvement practices (including all patients receiving a comprehensive holistic assessment) resulted in a decreased incidence of pressure ulcer development.

Baier et al (2003) explored quality improvement for pressure ulcer care in nursing homes by means of training and education workshops. The study commenced with 35 homes, of which two withdrew and a further four did not complete the programme. The paper concluded that there was an association between the qualified staff-to-resident ratio and the quality of care provided. Baier et al (2003) also compared government-run to privately owned facilities, finding that quality improvement for pressure ulcer prevention is needed and that interventions such as training and education workshops slow the rate of pressure ulcer development.

CLINICAL INDICATORS

An evaluation of pressure ulcer assessment using the Waterlow scale in a nursing home over a 2-day period (Madsen and Leonard, 1997) identified that the majority of residents were at risk of pressure ulceration and required various types of intervention to meet clinical needs, such as a comprehensive assessment and care planning. The authors found that only four of these residents experienced any breakdown in skin integrity, and that correct, regular use of the Waterlow scale assisted in early identification of residents at risk of pressure damage and prompted early intervention of preventative measures.

LOW STAFFING LEVELS

Low staffing levels may have an impact on pressure ulcer development. Hickey et al (2005) examined the association, via patient notes review, between staff turnover rates, skill mix,

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shift patterns and staffing levels and pressure ulcer development in 35 Department of Veterans' Affairs nursing homes between 1998 and 1999. Data analysis demonstrated that although there was no strong linear association between staffing levels and pressure ulcer incidence, when 10 of the homes reduced their staffing levels or used temporary staff, a 2.1% increase in pressure ulcer development occurred. The authors concluded that a high staff turnover or inadequate staffing levels reduced patient outcomes.

REDUCING THE INCIDENCE OF PRESSURE DAMAGE

A range of interventions have been identified that may reduce incidence of pressure ulcers and improve quality of life. Madsen and Leonard (1997) highlighted that nurse education could have a positive effect on the incidence of pressure ulcers, combined with the use of a recognised pressure ulcer risk calculator in clinical areas. The effectiveness of an introduction of national guidelines was debated by Baier et al (2003), who showed that guidelines demonstrated a reduction in pressure ulcer incidence when actively promoted. Baier et al's study introduced guidelines including: developing care plans to address specific risk factors (i.e. immobile residents, the importance of frequent repositioning, use of pressure redistributing equipment), and the application of a pressure ulcer risk assessment tool. The authors warned that the adoption of national and local standards was often slower than in the acute sector, with staff not always becoming aware of ulcers in a timely manner, and suggested that homes with a high incidence of pressure ulcers often had problems with other quality measures, such as record keeping. They concluded that reduction in the incidence of pressure ulcer development was associated with structured education around pressure ulcer development and treatments, one-to-one mentoring, auditing and regular feedback to staff.

However, Berlowitz et al (2003) warned that the introduction of national guidelines does not mean that all staff will adhere to these guidelines. In their study of the implementation of guidelines in nursing homes, they were unable to identify any evidence to support the hypothesis that nursing homes were adhering to the national guidelines. By contrast, a study of nursing homes (Saliba et al, 2003, cited by Baier et al, 2003) concluded that evidence from other healthcare settings showed that a quality improvement approach can lead to improved care. It was highlighted that nursing home staff need to recognise the importance of reporting low staffing levels and increased numbers of patients who are at risk of pressure damage, in order to allow for managers to review resources and staffing levels.

DISCUSSION

The profile of adult safeguarding has increased following the implementation of the Mental Capacity Act (MCA) (2005), with its inclusion of Deprivation of Liberty Safeguards (DoLS) (DH, 2009a). Identifying avoidable harm in a timely manner, and implementation of preventative measures, have been highlighted as important and essential elements of care in nursing and care homes. Safeguards have been designed to protect vulnerable groups of people, including the elderly, in care and nursing home settings, with specific guidance for care homes (DH, 2009b). There is no single definition of deprivation of liberty, but the DH guidance provides a standard process that care homes should follow if they are concerned that deprivation of liberty may occur, while providing a care plan based on the residents' best interests (DH, 2009b). The MCA DoLS (2009a) should be used for people in residential and care homes who lack the capacity to make decisions for themselves and where personal freedom needs to be restricted in their best interests.

Adult safeguarding has been identified as a priority for all healthcare providers; in particular, pressure damage and development of pressure ulcers has been highlighted in the publication of the Care Act (CA) (DH, 2014). Following the introduction of the CA, the definition of a vulnerable adult has been expanded to include: neglect and poor care practice within an institution or care setting such as a hospital, care home, or in relation to care provided in one's own home. This may range from one-off incidents to ongoing ill treatment. The CA discusses the nature and timing of interventions, highlighting that nursing and care homes will be held responsible for neglectful care or practice that could result in pressure ulcer development.

Across the UK, health trusts are reporting and undertaking root cause analyses of all category III and IV pressure ulcers. Most NHS organisations use the National Patient Safety

Framework (NPSF) root cause analysis tool for carrying out investigations. If additional causative factors are identified, such as poor practice, acts of omission or delay of reporting, then an alert would be generated via local safeguarding procedures and polices published by local safeguarding adult boards (NPSF, 2015). Nursing and care homes should also adhere to this guidance, yet there is little research that explores how well safeguarding is understood or its relationship to pressure ulcer development.

SUMMARY

Although a lack of literature was identified in relation to reporting of pressure ulcer development as a safeguarding concern in care and nursing homes, safeguarding of vulnerable adults is becoming a key area of discussion for both commissioners and providers within the NHS, and nursing and care homes. This means that care and nursing home staff will need to develop their knowledge base and understanding in relation to safeguarding. Documentation will need to ensure that safeguarding is assessed and reported appropriately. As this was a literature review, it would be beneficial to undertake a systematic review of the literature in the future. WUK

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"Adult safeguarding has been identified as a priority for all healthcare providers"

Preventing pressure damage when seated

KEY WORDS
- Pressure ulcers
- Seating
- Prevention

Pressure ulcers are common, costly and adversely impact on individuals' health-related quality of life. Among those who spend a prolonged period of time in a seated position, pressure ulcers are a particular problem because the body weight is loaded onto a relatively small surface area. Once a pressure ulcer develops, the individual may be required to make substantial modifications to their lifestyle to allow for healing of the wound. This, in turn, can exacerbate the adverse effect of the wound on their quality of life because the ability to undertake usual activities of daily living may be negatively impacted upon. Therefore, accurate assessment of pressure ulcer risk among seated individuals is important, and the first step in prevention. Following this, planning prevention should give consideration to the lifestyle of the individual, the duration of seating, the type of seat in use including the type pressure ulcer redistribution device employed. This article will provide advice and guidance in preventing pressure ulcer damage in the seated individual.

ZENA MOORE
Professor of Nursing and Head of Nursing & Midwifery, The Royal College of Surgeons in Ireland, Dublin, Ireland

MENNO VAN ETTEN
Physiotherapist, Seating and Mobility Consultant, Oslo, Norway

The 2014 international pressure ulcer prevention and management guidelines define a pressure ulcer as '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' (National Pressure Ulcer Advisory Panel [NPUAP] et al, 2014). Pressure is the amount of force acting on a unit of area (Bennett and Kavner, 1979), whereas, shear forces occur in soft tissue when these tissues are stretched, as happens when the bony structures move but the skin does not move correspondingly (Bennett and Kavner, 1979).

The World Health Organisation (WHO) (2010) suggests that the wheelchair is one of the most commonly used assistive devices for enhancing personal mobility. It is estimated that 10% of the global population, almost 650 million people, have disabilities and of these individuals 10% require the use of a wheelchair (WHO, 2010). Pressure ulcers are common, particularly among those confined to a chair (Stockton and Parker, 2002). Indeed, international pressure ulcer prevalence figures among those with prolonged seating individuals varies from 17% to 58% (Stockton and Parker, 2002; Charlifue et al, 2004; Sheerin et al, 2005; Nangole et al, 2009; Kovindha et al, 2015). Among elderly patients with prolonged seating episodes cared for within the nursing home setting, an incidence of 17.6% has been identified, specifically termed as sitting pressure ulcers, occurring over the ischial tuberosities or the sacral/coccyx region (category I or greater) (Brienza et al, 2010).

Pressure ulcers are costly and adversely affect health-related quality of life for the individual (Moore and Cowman, 2014). Indeed, individuals with spinal cord injury in addition to pressure ulcers display significantly lower health-related quality of life compared to their counterparts without a pressure ulcer (Lourenco et al, 2014). In addition, the greater the number of pressure ulcers an individual has, the worse the health-related quality of life (Lala et al, 2014). Almost 4% of the annual healthcare budget is spent on pressure ulcers, with nursing time accounting for 41% of these costs (Posnett et al, 2009). Furthermore, pressure ulcers increase length of hospital stay, readmission and mortality rates (Lyder et al, 2012), and add considerably to the cost of an episode of hospital care (Chan et al, 2013). This paper will address the key considerations in planning pressure ulcer prevention among seated individuals.

WHY ARE THOSE WHO SPEND A LONG TIME SEATED AT RISK?

In the seated individual, body weight is loaded onto a relatively small surface area, namely the ischial tuberosities (the sitting bones) and buttocks, the coccyx and upper thighs (Stockton, 2002) (*Figure 1*). Sitting forces the weight of an individual against the supporting seat surface, compressing the soft tissues and increasing risk of pressure ulceration; therefore, regular repositioning for those confined to the chair, as often as every 15 to 30 minutes, is recommended (Schofield, 2013).

When pressure is not evenly distributed, it is the point pressure (i.e. the pressure applied on a specific area of the body), which causes damage (Husain, 1953). When seated, the contact area is much smaller than when resting in bed, thus the risk of pressure ulcer development is increased. This relates to physics, where pressure is the amount of force acting on a unit of area (O'Callaghan et al, 2007). The pressure sustained is equal to the amount of force divided by the area. The same amount of force applied to a small area, when compared to that of a bigger area, will result in greater pressure (O'Callaghan et al, 2007). For an individual in a seated position, the force pressing on the surface is the weight of the individual. An addition to this is the shape of the pelvis when seated: the ischial tuberocities are approximately 6–8 cm below the next bony structure, the trochanters, increasing the effect of the pressure (Bader and Hawken, 1990). This difference in height puts a huge demand on the seating surface. The ischial tuberocities, buttocks, coccyx and thighs support the weight of the body, such that if an individual is left in a seated position for a protracted period of time, it is in these areas that pressure ulcers will primarily develop (Stockton et al, 2009).

HOW TO IDENTIFY RISK IN THE SEATED PERSON?

Risk assessment is a fundamental aspect of pressure ulcer prevention as it is a precursor to planning interventions that are focused on the individual needs of the patient. Undertaking risk assessment has traditionally focused on the use of formalised risk assessment tools; however, most of these tools have not been validated for use in the seated individual. Indeed, in their study of 150 wheelchair users, Anthony et al (1998) found that risk factors for pressure ulcer development were gender (males more likely to develop a pressure ulcer), and whether they use a wheelchair all or part of the time. Further consideration of these risk factors predicted almost as well as the Waterlow scale. This means that the overall Waterlow scale included risk factors that were not relevant to individuals in wheelchairs, and as such using an overall Waterlow score as a determinant of risk status may underestimate risk among wheelchair users. Others argue that risk assessment needs to focus on where the person usually spends their time (Bain and Ferguson-Pell, 2002). In doing this, the aim is to assess the individual's sitting habits, where upon they may inadvertently be placing more pressure on one buttock than the other. Furthermore, active repositioning may be erratic, thus remote pressure logging may be useful in determining these disparities. In other words, a one-off assessment of seating and repositioning practice may not give a true picture of an individual's daily activities in this regard. As such, it may be of value to use monitoring of patients while they are at home, or undertaking their usual activities outside the clinic setting, to enable achievement of an accurate record of actual seating and repositioning practices (Bain and Ferguson-Pell, 2002). Changes in usual habits may also be identified, for example a reduction in usual activities arising due to illness or depression.

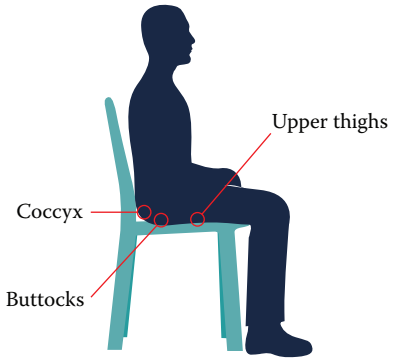

Figure 1. Areas of high pressure for the seated individual

PREVENTION STRATEGIES IN THE SEATED PERSON

Development and implementation of prevention

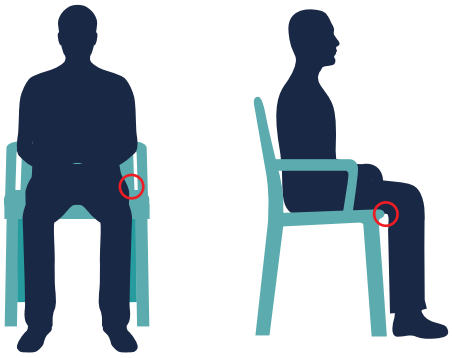

Figure 2. Ideal chair width, depth, and height for a seated individual. With one-finger depth between side support and body and one finger space between inside knee and seat, knees at 90 degrees.

strategies targeted at the individual needs of the seated person should include consideration of the type of seat employed, the pressure redistributing surface in use and the type and frequency of repositioning.

THE SEAT

In choosing a seat for an individual, the three aspects of importance are the width, the depth and the height of the chair. If the chair is too small, the person will be squashed into the chair. This creates a pelvic obliquity and rotating of the spine, leading to seating instability. Conversely, if the seat is too wide the user will also loose seating stability, because the sides of the chair support and help to stabilize the pelvis. The general rule for those confined to a chair is that the seat should be as small as possible, with just a finger width space on each side between the body and the side supports (Tissue Viability Society, 2009) (*Figure 2*).

The depth of the chair is also of importance, if the seat is too long, contact between the calves and the front of the seat will force the person to slide forward in the seat. The person will adopt a slouched position and shear forces in the buttocks will increase, putting pressure on the coccyx. Conversely, a seat depth that is too short will reduce the area on which the force is distributed, thus increasing the risk of pressure ulcer development over the weight bearing areas (Moore and van Etten, 2011; Moore and van Etten, 2015). If the feet are not supported, the person will lose stability and slide down in the chair, also creating a slouched position and increased pressure on the coccyx (Moore and van Etten, 2011; Moore and van Etten, 2015). The height of the chair also influences the stability of the seated person. The position of the feet should allow the knees to be placed at approximately 90 degrees. If the feet are positioned too far forward, stretch on the hamstrings will tilt the pelvis backwards, sliding the user out of the chair, causing a slouched position and increasing pressure on the coccyx (Moore and van Etten, 2011; Moore and van Etten, 2015).

THE SEATED SURFACE

Using an appropriate pressure redistributing cushion on the seat is an important component of pressure ulcer prevention in the seated person. Furthermore, choosing the right pressure redistributing cushion will enhance the comfort of the person and will also increase the length of time they can remain seated (Moore and van Etten, 2015; Loerakker et al, 2010). The 2014 international pressure ulcer prevention and management guidelines recommend the use a pressure redistributing seat cushion for individuals sitting in a chair whose mobility is reduced. Additionally, the guidelines stress the importance of ensuring that the selection of a pressure redistributing seat cushion is appropriate to the individual (NPUAP, 2014).

The idea behind the use of a pressure redistribution cushion is to reduce tissue deformation. This is achieved by two concepts known as immersion and envelopment (Van Etten, 2014). Immersion is defined as 'the depth (sinking) of penetration into a support surface' (NPUAP, 2007). In order for immersion to occur, the person needs to be able to sink into the material, but not to sink in completely where the cushion will bottom out. This happens if the cushion is too soft or too thin. The higher the cushion, the greater the possibility for immersion (Van Etten, 2014). Conversely, if the cushion is too hard, there will be no immersion because the person cannot sink into the cushion. The person will actually balance on the top of the cushion thereby decreasing stability and increasing tissue deformation (Van Etten, 2014). Envelopment is the ability of the material to encompass the contours of the human body. It has been defined as 'the ability of the support surface to conform, so as to fit or mould

around irregularities in the body' (NPUAP, 2007). Envelopment equalises pressure and stabilises the person. The greater the capacity for envelopment, the greater the reduction in tissue deformation (Van Etten, 2014). More split in a material improves the envelopment potential, whereas a thicker material enhances the immersion potential (Van Etten, 2014). Careful consideration should be given to the material used in the cushion; many foam types will, due to their inert cell structure, increase tissue deformation where you want it least, for example, under the ischial tuberocities (Levy et al, 2014). Air and fluids need to be placed into a storage container within the pressure redistributing cushion and the surface size of this container should be larger compared to the amount of fluid and air within it. This will ensure that the person may immerse and be enveloped by the material (Levy et al, 2014).

REPOSITIONING

Repositioning is considered to be an integral component of pressure ulcer prevention strategies. There are two key aspects to consider, the frequency and the method of repositioning. Both these aspects should be intertwined with consideration of the impact on the individual's quality of life (Moore et al, 2011).

The 2014 guidelines highlight that the seating duration should not exceed 2 hours, particularly in acutely ill individuals (NPUAP et al, 2014). However, some patients may only be able to tolerate sitting for shorter durations and a careful assessment of the patient and their response to sitting should influence care planning (Moore and van Etten, 2011).

Repositioning can be challenging as the traditional method — pushing up and holding the armrests or wheels — requires coordination, balance, consistency and good upper body strength (Sprigle and Sonenblum, 2011). As a result, many persons do not carry this out effectively, suggesting that other methods of repositioning should be considered (Moore and van Etten, 2015). The main aspects of repositioning to consider are the impact of the chosen position on the person's stability, security and comfort. The 2014 guidelines add the importance of ensuring the person is enabled to maintain his or her full range of activities (National Pressure Ulcer Advisory Panel et al., 2014). Furthermore, the position chosen should be acceptable for the individual and should also minimise the pressures and shear exerted on the skin and soft tissues (NPUAP, 2014).

Pressure may be redistributed through the use of chair tilting and self-positioning programmes (Stockton and Flynn, 2009). One technique is to let the individual lean forward, resting with their elbows on their knees, use of a specific positioning cushion on the lap will increase security. In this position, the pressure over the ischial tuberocities is redistributed, and decreasing temperature and humidity in the weight bearing area is reduced (*Figure 3*) (Stockton and Flynn, 2009). If the patient can stand, pressure may be relieved at regular intervals in this way. However, it is important to allow sufficient time during each standing episode. Allowing the patient to rest in bed for periods throughout the day will relieve pressure and also reduce fatigue, thereby enhancing wellbeing (Gebhardt and Bliss, 1994). Indeed, Bliss (2004) argues that individuals need periodic episodes of lying down during the day to ensure that they have adequate rest. In addition, Alhola and Polo-Kahtola (2007) note that this rest is fundamental to enhance cognitive performance.

STABILITY AND LOAD MANAGEMENT

The advantages of seated stability are: 1, a reduction in sliding forward or sideways (thus reduced tissue deformations); 2, increased (functional) mobility (proximal stability gives distal mobility); 3, increased comfort; 4, less pain; and 5, less fatigue. But repositioning, besides a change in seat angle

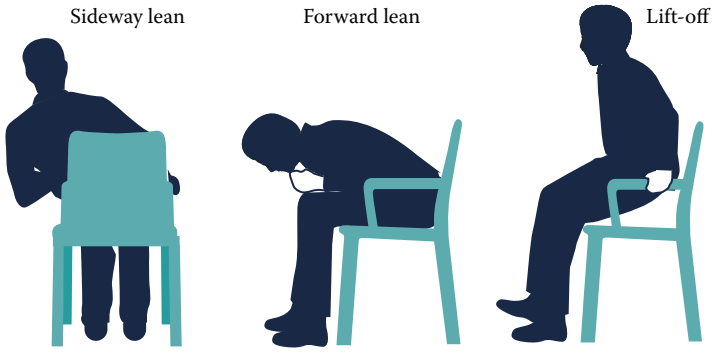

Figure 3. Self-repositioning technique

Box 1. Practice key points

- Pressure ulcers are a devastating consequence for seated individual
- Risk assessment is a precursor to planning prevention strategies
- Assessment and prevention should be person centred, reflecting the lifestyle and preferences of the individual
- Prevention should include consideration of the type of seat employed, the pressure redistributing surface in use and the type and frequency of repositioning
- Prevention should also take into consideration whether the individual already has an existing pressure ulcer
- All assessment and prevention should be recorded and re-evaluated in response to the tolerance of the individual to strategies employed.

(tilt in space chairs) or through leaning forward with support on the knees, will be challenging — these changes will nearly always cause a corresponding change to the pelvis position and since a properly aligned chair is quite small, this can only happen if the pelvis is moved forward, thus causing a slouched position. For a physically weak person, returning to the 'proper seated position' may be nearly impossible without the help from a carer.

Appropriate load management that increases the potential seating time (i.e. a cushion with good immersion and envelopment properties) and regular repositioning can be conflicting in action. For example, the more an individual is immersed and enveloped by the cushion material, the more difficult it will be for this person to reposition. Therefore, a person with impaired mobility or muscle weakness will be more depending on carers to perform a reposition.

SEATING AMONG THOSE WITH EXISTING PRESSURE ULCERS

For individuals with existing pressure ulcers, it is fundamental that the potential for wound healing is maximised (Moore and Cowman, 2015). For this to occur, the wound requires an adequate blood supply, since the metabolic need of the wounded area is great (Iocono et al, 1998). Furthermore, normal cellular metabolism requires an adequate supply of oxygen and nutrients, and also an effective elimination of waste metabolites (Iocono et al, 1998). If the pressure ulcer exists over a weight-bearing area whilst seated, the pressure and shear forces the individual is exposed to continue to cause cell deformation and impaired lymphatic drainage, resulting in oxygen and nutrient deprivation to the affected area (Oomens et al, 2014), and wound healing potential is severely impeded. For this reason, the international pressure ulcer prevention and management guidelines advise that, if seating is necessary among those with existing pressure ulcers, this should be for as short a time as possible, perhaps as little as three times a day for 60 minutes or less at each sitting episode (NPUAP, 2014).

CONCLUSION

Pressure ulcer development is a particular risk in those who spend protracted periods of time in a seated position. Owing to the devastating affect that pressure ulcers have on the individual, it is imperative that all due measures are taken to prevent these wounds from developing in the first instance. At the outset, identifying those at risk is the first step; this should be followed by development of an individualised prevention care plan, which is suitable for the needs of the patient.

In the seated individual, it is important to ensure that the following factors are taken into consideration: choose a chair that fits the individual correctly, choose arm rests that are of the correct height and position relative to the chair, which should be fitted with an appropriate pressure redistributing device. Following this, the chosen seated position should maximise the individual's ability to undertake usual activities, whilst offloading at regular intervals. Once the individual feels secure and stable in the seated position, they are at lower risk of the adverse effects of pressure and shear forces, and, as a result, will be at reduced risk of pressure ulcer development. All interventions should be recorded and re-evaluated according to the responses of the individual. WUK

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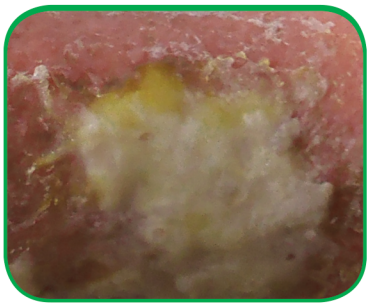

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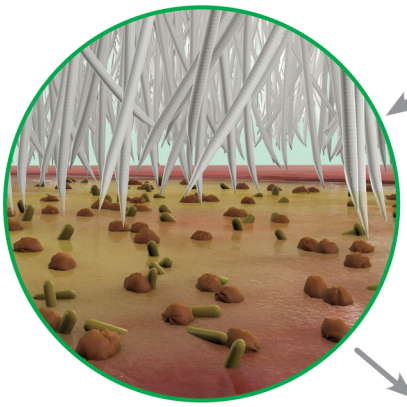

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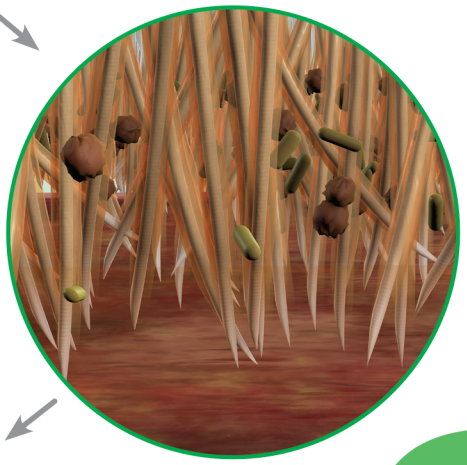

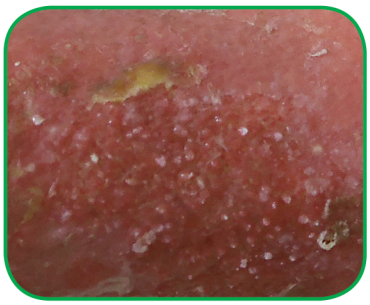

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