Throughout the UK there has been a rapid expansion in residential and nursing home care for elderly people, with a corresponding reduction in long-term hospital care (Hits, 2010).

Hythe Nursing Home accommodates 40 residents and last year a total of 59 patients were admitted (between August 2013—August 2014). Of these, six (10%) required chronic wound care. Many patients are admitted due to either a family crisis, for example loss of a main carer, falls, or following discharge from hospital after an acute illness.

Many residents are likely to have some degree of urinary incontinence or dysfunction linked to poor mobility and ill-health, and all of these factors increase the risk of pressure damage (Grey et al, 2006; National institute of Health and Care Excellence [NICE], 2014a).

This article provides an overview of care pathways in pressure ulcer care, as well as exploring the benefits of appropriate dressing choice. The authors also examine the management and treatment of two patients who were admitted requiring wound care for existing long-term pressure ulcers that had failed to improve over a significant period before admission.

The authors discuss the use of a new gelling fibre dressing (KytoCel®; Aspen Medical), which was used in the nursing home following advice and support from the local tissue viability team.

The authors have a special interest in wound care and ensuring that education and training is disseminated to other care home staff. Hythe Nursing Home has a proud record of achievement as detailed in a recent Care Quality Commission report, which highlighted the privacy, dignity and robust care pathways used in the home, as well as detailing how staff were prepared to refer to specialist care when required (Care Quality Commission, 2013).

CARE PATHWAYS

As mentioned above, the authors’ nursing home used care pathways to ensure the most efficient delivery of care for patients. Care pathways ensure that members of the care team are aware of the treatment plan for a particular condition — in this case pressure ulceration — and have a clear, evidence-based management plan to follow.

According to the Welsh National Leadership and Innovation Agency for Healthcare (2005), a care pathway provides ‘anticipated care placed in an appropriate time frame, written and agreed by a multidisciplinary team’.

A successful care pathway will provide clinicians with evidence-based standards that provide guidance on how to manage patients through the treatment of their specific condition, down to providing targeted clinical interventions that they are expected to implement according to the patient’s progress. Following a clinical pathway also provides a mechanism for documenting the care given, as well as allowing for continuous quality improvement.

Top tip: Remember: care pathways are an excellent way of finding out about evidence-based treatment for a particular condition. Visit the NICE website (http://pathways.nice.org.uk) for a range of different care pathways...
A successful clinical pathway will demonstrate that clinicians are working towards a set of standards, including (Welsh National Leadership and Innovation Agency for Healthcare, 2005):
- Multidisciplinary teamwork
- A single set of documentation
- Patient/user involvement in care
- Outcome-orientated care
- Treatment that has built-in audit
- The provision of up-to-date evidence-based care.

**PRESSURE ULCER CARE**

In the UK, NICE (2014a) provides detailed guidance on the prevention and management of pressure ulcers.

Prevention of the development of pressure ulcers in the community setting is obviously the preferred scenario, both avoiding unnecessary suffering for the individual involved (Lyder and Ayelo, 2008), as well as ensuring that expensive admissions to hospital can be avoided.

In the nursing home setting, avoiding pressure ulcers is key, as many of the residents will be elderly with poor mobility and the development of pressure ulceration in these situations is regarded as indicative of poor care (Guy, 2010).

The NICE (2014b) pathway for pressure ulcer prevention includes a number of elements:
- Risk assessment: risk factors for pressure ulceration include significantly limited mobility; loss of sensation; a previous or current pressure ulcer
- Skin assessment: in patients who have been identified as at risk of pressure ulceration, a skin assessment is vital and should include colour changes or discoloration and variations in heat, firmness and moisture
- Care planning: it is vital to develop an individualised care plan for any patient at high risk of developing a pressure ulcer, including the need for additional pressure relief at specific at-risk sites, and taking account of patients’ ability to reposition themselves
- Use of barrier creams: these can prevent skin damage in adults at high risk of developing a moisture lesion or incontinence-associated dermatitis (IAD)
- Repositioning: encouraging patients at risk of developing pressure damage to change position frequently and at least every six hours
- Pressure redistribution: for example, the use of a high specification foam mattress.

If a pressure ulcer does develop, NICE (2014b) also offers management guidelines and a pathway for clinicians to follow. This includes the steps below:
- Ulcer measurement and categorisation: the surface of all pressure ulcers should be measured and documented; pressure ulcers should also be categorised using the latest European Pressure Ulcer Advisory Panel (EPUAP), National Pressure Ulcer Advisory Panel (NPUAP) and Pan Pacific Pressure Injury Alliance (PPPIA) (2014) guidance
- Provision of nutrition and hydration
- Debridement: autolytic debridement (using an appropriate dressing) should be the first option, although sharp debridement can be used if autolytic debridement will prolong healing time
- Pressure redistribution: high specification foam mattresses should be used in adults with a pressure ulcer, with dynamic support surfaces for those needing extra input. High-specification foam or equivalent pressure redistributing cushions should be considered in those ‘sitting out’ for long periods
- Wound dressings: for those with category 2, 3 and 4 pressure ulcers, dressings should be chosen that promote a warm, moist wound healing environment. Pain, ulcer position, volume of exudate and frequency of dressing change should all be considered
- Systemic antibiotics: these should be offered if there is evidence of systemic sepsis, spreading cellulitis or underlying osteomyelitis.

**THE PRESENCE OF MRSA IN NURSING HOMES**

Unfortunately, the very nature of nursing and care homes provides an environment that promotes the development and spread of meticillin-resistant *Staphylococcus aureus* (MRSA), due in part to the close proximity of large numbers of elderly patients with multiple comorbidities (Hughes et al, 2013). Residents may also be receiving several different types of antibiotics and a significant proportion may have pressure ulcers and medical devices such as catheters *in situ*. This means that residents are at increased risk of colonisation and infection, so staff should be encouraged to develop an understanding of infection prevention and control strategies to limit MRSA transmission.

**MRSA IN PRESSURE ULCERS**

According to Pirett et al (2012), pressure ulcers represent a significant
Risk assessment is a vital aspect of pressure ulcer prevention, and every patient should have a risk assessment undertaken within six hours of admission to hospital, or on first assessment in the community.

Did you know...

‘reservoir’ of MRSA in healthcare settings, with the strain being commonly identified in laboratory cultures taken from pressure ulcers (Roghmann et al, 2001).

This means that staff working in care homes need to have a comprehensive understanding not only of pressure development and identification, but also infection control and how infection can spread where large numbers of patients are cared for in close proximity, such as nursing homes.

Staff also require an understanding of the types of dressings needed to treat pressure ulcers in order to minimise the risk and/or development of infection.

Supporting Patients and Families

Bangova (2013) notes that the beliefs and opinions of individual staff can affect pressure ulcer prevention and, if staff members believe that they can control prevention, incidence can be reduced. Education is key, and nursing and care home staff should be trained in prevention and management. Using online training packages can be useful when resources are limited (Bangova, 2013).

Similarly, group or individual training sessions from tissue viability link nurses can be used for training nursing home staff, while support through regular meetings is also crucial (Bangova, 2013).

However, in the authors’ opinion, if a patient does develop a pressure ulcer in a nursing home, it is also important to support the patient.

Case report 1

This 81-year-old man was admitted to the nursing home in June 2012. He had experienced recurrent pressure ulcers for more than two years and his past medical history included a cerebral vascular accident (CVA) in 2008, and rheumatoid arthritis, which had left him bed-bound and incontinent.

He had undergone multiple admissions to the local hospital for recurrent urinary tract infections and vascular dementia was diagnosed in 2010, which caused him to have hallucinations. His wife, who was also the main carer, could no longer cope at home. Current medications included methotrexate, ferrous fumarate, codeine phosphate, donepezil and cefuroxime and he was also taking nutritional supplements. He was allergic to penicillin.

The main problem was a category 4 pressure ulcer on his left heel, that would show signs of healing but then repeatedly break down, despite a care plan including off-loading, frequent repositioning, dressing changes and nutritional supplements. He was referred to the tissue viability nurse and local GP in February 2014. A full Doppler assessment was carried out but no evidence of peripheral vascular disease was found and X-rays also excluded osteomyelitis. The recommendation of the tissue viability nurse was to use KytoCel® (Aspen Medical) as a primary dressing, with a secondary dressing of Mepilex® Border (Mölnlycke Health Care).

The nursing home staff continued off-loading the patient’s left heel and he was prescribed additional nutritional supplements. On 5 February, the wound measured 4.2x4cm, probing to bone at a depth of 0.5cm (Figure 1 below). The surrounding skin was macerated, with a bleeding friable wound bed. KytoCel was applied and within 15 days the bone was no longer exposed, the surrounding skin was epithelialising, and clean healthy granulation tissue was noted (Figure 2). A wound care pathway was started, with all staff taking an active role. By 1 June, the left heel had completely healed (Figure 3).

Despite the success of this treatment regimen, the patient continues to be a high risk and the nursing staff remain vigilant. However, at the time of writing, despite a two-year history of recurrent breakdown, this patient’s heel has remained intact for 16 weeks.

**Figure 1.** Patient’s wound at presentation on 5 February, 2014.

**Figure 2.** Wound shows epithelialisation and granulation.

**Figure 3.** Healed wound on 1 June, 2014.
This 94-year-old man had undergone a transurethral prostatectomy resection in 2009. Following this surgery he had ongoing problems with urinary and faecal incontinence and was wheelchair-bound. This led to the development of two category 4 pressure ulcers on the base of his spine and sacrum. He had a long-term self-retaining catheter in situ, and, unfortunately, experienced recurrent hospital admissions from home to hospital for urinary tract infections while multi-resistant strains of pseudomonas and meticillin-resistant Staphylococcus aureus (MRSA) were confirmed by blood tests and wound swab. He was admitted into the local hospital in October 2010 with rigors associated with pseudomonas contamination and bacteraemia attributed to his pressure damage and was given a course of intravenous (IV) antibiotics. Finally, At the end of this period, the patient’s wife was unable to cope with his health needs despite community nurses visiting for day-to-day care, including the application of Aquacel Ag® (ConvaTec) for the bioburden and Allevyn® Gentle Border (Smith and Nephew). Following a meeting with the patient and his wife, he was admitted into the authors’ nursing home for long-term care.

The patient was referred to the tissue viability team on 30 June 2014, due to deterioration in his pressure ulcers. This was despite the implementation of a robust care pathway. The tissue viability team recommended the use of a gelling fiber dressing (KytoCel®, Aspen Medical), to be applied as a primary dressing. The aim was to reduce the wound’s bioburden while maintaining a moist wound environment without causing trauma to the pressure ulcers. The patient was simultaneously prescribed erythromycin and metronidazole for a chest infection. A full care pathway of off-loading and frequent two-hourly turns was advised, as well as the use of a dynamic mattress with constant skin observations and hygiene. The patient finally agreed to be nursed in bed for the first time in four years.

Initially, the wound measured 9.5x7cm with significant necrosis and the wound bed was sloughy and very malodourous with heavy exudate. Dressing retention was difficult due to constant incontinence. However, by 5 August the wound measured 3x4cm — a reduction of 8cm — while the surrounding tissue had epithelialised with only a small area of sloughy tissue visible at the base of the spine.

At the time of writing this patient has shown significant improvement and has taken an active role in his pressure-relieving measures. The wound continues to reduce in size and the authors have every confidence that he will progress to healing, as demonstrated by a wound swab revealing that MRSA had been irradiicated from the wound.

and family through what can be a distressing and confusing time. In the authors’ nursing home there are open visiting hours and staff available to answer any questions, while families are encouraged to actively participate in decisions about their relatives’ care. Staff also provide written documentation regarding pressure ulcers.

As well as looking after the wound itself, it is important to treat the patient holistically, bearing in mind issues such as pain, quality of life (such as comfort; regular provision of food and drink; environment etc), and flexible visiting times for family. In the authors’ nursing home, the patients’ next of kin were also present during consultations with the specialist team and were given the opportunity to ask questions.
WHAT IS KYTOCEL®?

KytoCel is a highly absorbent dressing composed of natural, biodegradable acylated chitosan fibres, which bond with wound exudate to form a clear gel that locks-in fluid, absorbs pathogens and is conformable to the wound bed.

Chitosan is a naturally occurring polymer derived from the shells of crustaceans (Lee et al, 2009). Its positive charge allows it to interact with negatively charged molecules such as Gram-positive bacteria, blood cells, proteins, metals and lipids, which means that it has many applications in biomedicine (Lee et al, 2009) and wound management in particular.

The dressing’s absorbency enables it to bind and lock away commonly encountered wound pathogens such as Escherichia coli and S. aureus, reducing wound bioburden and the risk of cross-contamination at dressing change (Li et al, 1992; Khor and Lim, 2003; Foda et al, 2007). It is also effective against commonly encountered wound pathogens such as Candida albicans, Pseudomonas aeruginosa and MRSA (Aspen Medical. Data on file. Antimicrobial activity of chitosan based dressing).

CONCLUSION

Patients admitted from home or hospital for long-term care, come with a multiple of problems which have an impact on their ability to heal, especially if they have had pressure ulcers in excess of two years or more.

While this may constitute a relatively small number of patients, the time and costs associated with their individual care can be high — treatment for pressure damage in the UK has been estimated as 4% of the NHS’ annual expenditure — around £1.4–2.1 billion per annum (Bennett et al, 2004).

In these two case reports, the use of KytoCel as a primary dressing in treating category 4 pressure ulcers, in conjunction with a robust individualised care plan, demonstrated significant improvements. The first patient completely healed with no further breakdown after 16 weeks. The second patient had MRSA in a wound that had failed to heal in four years but was reduced in size by 8cm.

Pressure ulcers continue to be a real challenge for nursing home residents and staff. However, with the right kind of training and support — and with the aid of recognised clinical pathways — staff can ensure that they are better placed to provide evidence-based care to residents. This will improve the quality of life of both residents and their families. JCN

REFERENCES


Key points

This article provides an overview of care pathways in pressure ulcer care, as well as examining the benefits of appropriate dressing choices in nursing and care homes.
Pressur ulcers continue to be a real challenge for nursing home residents and staff.
Many residents are likely to have some degree of urinary incontinence or dysfunction linked to poor mobility and ill-health, and all of these factors increase the risk of pressure damage.
This article discussed a new gelling fibre dressing, which was used from the local tissue viability team.
With the right training and support, and with the aid of clinical pathways, staff can ensure that they provide evidence-based care to residents.
Here, the use of KytoCel as a primary dressing in category 4 pressure ulcers, in conjunction with a robust individualised care plan, demonstrated significant improvements.


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Antibacterial exudate management

- Antimicrobial action\(^1,2\)
- Natural, biodegradable, chitosan fibres\(^3-7\)
- Quick and easy one-piece-removal\(^8\)
- Haemostatic properties\(^3-6\)
- Highly absorbent\(^8,9\)

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Reference:
1. Aspen Medical. Data of file. Antimicrobial activity of chitosan based dressing
8. Aspen Medical. Data on file: KytoCel dressing assessment