

Optimising the patient journey

made easy

Introduction

Effective acute and chronic wound management involves full, holistic assessment and ongoing evaluation to ensure optimal outcomes.

Accurate wound assessment should include a comprehensive patient history, aetiology of the wound, condition of the wound bed and periwound area, level, colour and consistency of exudate as well as signs of infection. It is also important to review the choice of wound dressing regularly. Each wound is different and may improve or deteriorate over time, and therefore timely recognition of changes is essential.

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QUALITY CARE AND THE PATIENT JOURNEY

The Department of Health's (DH) Quality, Innovation, Productivity and Prevention (QIPP) agenda has been an integral aspect of the patient journey that all practitioners should incorporate into plans of care (DH, 2008, 2009, 2010, 2012). QIPP promotes the importance of delivering high-quality care in a resource-controlled healthcare environment while maintaining productivity and ensuring prevention of harm to patients.

Integral to maintaining quality care is the promotion of patient wellbeing through appropriate wound dressing choice for an optimum healing environment. Wellbeing has been explored in a recent international consensus document (Wounds International, 2012), and has been described as a dynamic matrix of factors, including physical, social, psychological and spiritual/cultural. The consensus document highlights the importance of collaboration between clinicians, patients (their families and carers), the healthcare system and industry to optimise wellbeing, improve or heal the wound, alleviate and manage symptoms and ensure all parties are fully engaged in this process (Wounds International, 2012).

ROLE OF WOUND ASSESSMENT

Accurate wound assessment is complex, with every patient presenting with different signs and symptoms. Practitioners must therefore assess the needs of each person individually.

Precise, individual and timely wound assessment underpins effective clinical decision-making, enabling appropriate goals to be documented for the management of the wound in order to reduce morbidity and costs (Posnett et al, 2009).

Additionally, the patient, family and carers must be included in the development of care plans through discussions and explanations regarding treatment options to ensure that planned interventions are understood, agreed and adhered to by everyone (Wounds International, 2012).

The World Union of Wound Healing Societies (WUWHS, 2008) highlighted the importance of holistic assessment of the patient. This should include:

- Determination of the cause of the wound
- Identification of any complications or co-morbidities that may contribute to the wound or delay healing
- Assessment of the status of the wound.

Identification of these factors will help develop the management plan.

USING TIME TO ASSESS THE WOUND BED

The International Advisory Board on Wound Bed Preparation developed the acronym TIME to aid clinicians in wound bed preparation. This comprises four elements:

- T = Tissue, non-viable or deficient
- I = Infection or inflammation
- M = Moisture imbalance
- E = Edge of wound, non-advancing or undermined.

This model was designed to offer practitioners a structured approach to the assessment of potential barriers to healing and use of targeted therapies for optimal wound healing (Schultz et al, 2003; Falanga, 2004). More recently, the International Wound Infection Institute revisited the TIME framework and examined how new data and evidence generated over the past decade has impacted on the original concept of TIME (Leaper et al, 2012). It was concluded that the TIME framework remains relevant, but it should also encompass patient-centred concerns and promote a holistic approach to patient wellbeing in wound care, in addition to focusing on the wound bed.

Leaper et al (2012) argue that the TIME principles could be redefined from its first assessment stage to become a second management stage, consisting of treatment, implementation, monitoring and evaluation:

- Treatment: An appropriate treatment plan based on the objectives of care to be achieved, and the objectives of the original TIME framework

- Implementation: Agree treatment plans for optimal, effective objectives with an evaluation of outcomes
- Monitoring: Include detection of any local or systemic adverse events and ensure that clinical practice and products used achieve the best performance
- Evaluation: Review all treatments regularly and evaluate objectively (Leaper et al, 2012).

THE IMPORTANCE OF ONGOING WOUND ASSESSMENT

Ongoing assessment of wounds should be an integral aspect of the management plan. Wounds may improve or deteriorate over time, and therefore timely recognition of any changes is essential. Suboptimal care can lead to delayed healing, increased pain, increased risk of infection and inappropriate use of wound dressings, all of which impact negatively on quality of life and healthcare costs (Ousey and Cook, 2011).

Reassessment of the wound should be frequent, with repeat assessment being performed at each dressing change, which should be at least weekly. More frequent assessment may be required in wounds at risk of infection or in wounds with clinical signs of infection.

Wound reassessment is performed to evaluate the progression of the wound, to highlight any elements that may delay wound healing and to evaluate the effect of the current treatment objectives. The results should be clearly documented in the patient's notes and care plan, with clear evaluation dates recorded. Any changes to treatment and a clear rationale for such changes must be recorded.

Wound assessment at each dressing change should include:

1. Extent of the wound, including length and width (together with any areas of undermining etc). This may be traced or photographed dependent on local protocols. Remember if the wound is being photographed the consent of the patient must be sought and documented
2. Any changes to the condition of the periwound area, including signs of maceration, may indicate that an incorrect wound dressing is being used
3. Condition of the wound bed using the TIME principles and predominant tissue type (see page 1)
4. Level of exudate (colour, consistency, amount)
5. Signs and symptoms of infection
6. Presence of odour
7. Changes to vascularity such as a change in limb colour and/or sensation
8. Any changes in pain (location – eg is the pain in the wound bed or around the wound margins? – and intensity)
9. Any changes to the general health of the patient
10. Evaluation of the dressing used.

Identifying barriers to healing

Figure 1 presents a patient who has undergone debridement and amputation of toes as a result of diabetic foot infection. When assessing this wound, the practitioner should apply the principles of TIME:



Figure 1: Identifying barriers to healing in a patient who has undergone debridement and amputation of toes as a result of diabetic foot sepsis

- T = Tissue. The wound bed appears to have a covering of superficial slough.
- I = Infection/Inflammation. There are currently no signs of any issues with increasing bacterial load or abnormal inflammatory response.
- M = Moisture balance. There does not appear to be any issues with increased wound exudate. Instead the wound bed appears slightly too dry in places.
- E = Edge of wound. In some areas, the wound edges appear healthy and to be advancing; in other areas sloughy, devitalised tissue appears to be hindering the advancement of the wound edges.

In this example, the result of the wound assessment has revealed that the major issue delaying wound healing is the sloughy, devitalised tissue. Therefore the aim of wound bed preparation would be to debride the wound using a suitable method. For example, using a dressing that encourages autolysis such as a hydrogel or alginate/CMC, depending on the exudate level.

The importance of exudate in wound healing makes achieving a moist but not macerated wound bed the usual aim. Comprehensive assessment underpins effective exudate management, and ideally should be integrated into general wound assessment. Exudate is a problem when any of the following occur:

- leakage and soiling
- periwound skin changes, eg maceration/excoriation
- odour/discomfort/pain
- infection.

High levels of exudate may require more frequent dressing changes, with regular review to assess the absorption of fluid and level of moisture in the wound bed, which will change over time as the wound progresses to healing.

Formulating and documenting clear aims ensures appropriate wound products are chosen, but it also allows for realistic evaluation of treatment. At the next dressing change, following wound reassessment, the practitioner will be able to evaluate whether the wound is progressing, for example, whether the sloughy, devitalised tissue is reducing and whether the current intervention is proving successful (see also Case study p 5–6).

Setting treatment goals

The results of wound bed assessment will highlight the treatment goals leading to appropriate product selection. It is more difficult



Figure 2: Setting treatment goals in a patient with a venous leg ulcer and delayed healing due to cellulitis

to evaluate treatment plans if the wound aims are not specific. For example, if the goal is ‘to promote healing’ this is difficult to quantify, whereas treatment aims such as: to debride, reduce bacterial load, manage excess exudate or prevent maceration of the periwound skin, are more tangible for both patients and practitioners.

When planning treatment aims, the practitioner must be aware of and understand the signs and symptoms that may be indicative of a non-healing wound (Vowden, 2011). One reason healing may be delayed is due to increased bacterial load or infection. Clinical signs of infection include inflammation, pain, heat, swelling, redness, loss of function, abscess formation, cellulitis, purulent discharge, delayed healing, discolouration, friable granulation tissue that bleeds easily, pocketing at the base of the wound, bridging of epithelium or soft tissue, abnormal smell and wound breakdown (Cutting et al, 2005; WUWHS, 2008).

Figure 2 shows a venous leg ulcer where healing has been delayed due to an acute episode of cellulitis. There is evidence of oedema, spreading erythema and inflammation of the surrounding skin. The limb was warm to touch and the patient reported increased levels of pain and exudate. The infection required treatment with system antibiotics to prevent further delay in healing and development of complications.

Practitioners should not change the treatment plan prematurely unless there are specific reasons to do so. For example, if there is an allergic reaction, skin reaction or significant deterioration of the wound. Wound dressing regimens should be used for at least two weeks, allowing time for healing to occur before a change in dressing type is considered (see Case study p5–6). If there is no improvement in the wound after two weeks, then the practitioner should consider adjusting the wound treatment plan.

HOW TO DOCUMENT WOUND PROGRESS

Each wound assessment should be documented to ensure continuity of care and adherence to the treatment plan (Fletcher, 2010). This is particularly important in the community setting where many practitioners may be involved in the care of the same individual (Dowsett, 2009). Clear and concise documentation will also facilitate audit of care and measure outcomes. However, a study by Dowsett identified that only 42% of community patients had a wound assessment form completed and concluded that wound assessment and the recording of assessment is often carried out poorly or sporadically (Dowsett, 2009).

All healthcare teams will have a locally agreed wound assessment tool that should be used for all wound assessments. Practitioners may also use the National Pressure Ulcer Advisory Panel (NPUAP) and Wound Healing Assessment and Management (WHAM) wound assessment tools. The WHAM tool is an adaptation of the Pressure Ulcer Score for Healing (PUSH) tool (NPUAP, 1998). It enables the recording of wound size/depth, location of wounds using a body map, and identification of factors that delay wound healing (Shepherd and Nixon, 2013).

Although there are no national guidelines recommending one particular assessment tool, it is important that staff are consistent and use the same documentation to ensure continuity of care. If a patient is transferred from one location to another, the type of documentation may be different. In this situation, a further wound assessment should be undertaken using the locally accepted documents and results of this recorded as a baseline. Subsequent assessments should be completed using the local documents to avoid any confusion for continuity of care.

USING ASSESSMENT TO INFORM DRESSING CHOICE

Accurate wound assessment allows appropriate wound dressing selection. When choosing a dressing, it is crucial that judgments are based on the results of each assessment and that the choice of dressing best matches the clinical appearance, patient preferences and the site of wound (WUWHS, 2007).

Factors to consider include:

- Location of the wound
- Extent (size/depth) of the wound
- Amount and type of exudate
- The predominant tissue type on the wound surface
- Condition of the periwound skin
- Compatibility with other therapies (eg contact casting)
- Wound bioburden and risk of infection
- Avoidance of pain and trauma at dressing changes
- Quality of life and patient wellbeing.

Practitioners should also ask themselves the following questions (WUWHS 2007).

Does the dressing:

- Stay intact and remain in place throughout wear time?
- Prevent leakage between dressing changes?
- Cause maceration/allergy or sensitivity?
- Reduce pain?
- Reduce odour?
- Retain fluid/trap exudate components?

Is the dressing:

- Comfortable, conformable, flexible and of a bulk/weight that can be accommodated in an offloading device/footwear?
- Suitable for leaving in place for the required duration?
- Easy to remove (does not traumatise the surrounding skin or wound bed)?
- Easy to apply?
- Cost-effective?

All decisions made by practitioners must be based on the best available evidence. It is the responsibility of each registered practitioner to ensure they possess up-to-date knowledge and skills. Importantly, practitioners need to recognise their own limitations and, when necessary, refer to multidisciplinary teams for specialist advice.

THE IMPORTANCE OF EVIDENCE-BASED DECISION-MAKING

Practitioners involved in wound care should possess the essential skills required to plan, implement and evaluate care on an individual basis (Cook, 2011). Structured wound assessments should be carried out by skilled and competent practitioners, adhering to local and national guidelines (Harding et al, 2008).

The Nursing and Midwifery Council (NMC) states that care delivered must be based on the best available evidence or best practice, with every registered practitioner possessing the knowledge and skills for safe and effective practice when working without direct supervision (NMC, 2008). The NMC adds that practitioners must be able to recognise their limitations and undertake appropriate learning and practice activities that maintain and develop competence and performance.

As such practitioners must maintain their knowledge and skills through continuing professional development. This can be achieved through attending learning events, study days, and university courses, or through reading journal articles and textbooks. There should be a period of structured reflection following each piece of study to demonstrate learning and to consider how practice will be affected. Shadowing specialists in tissue viability can help to develop knowledge and skills. Industry representatives can also provide useful information that relates to their products and provide the evidence to support their use.

BENEFITS OF APPROPRIATE DRESSING SELECTION

Appropriate choice of wound product requires a variety of skills including an understanding of the wound healing process; knowledge of the range of wound dressing products available and their action on the wound bed; clear and effective wound bed assessment and individual assessment dates for continued evaluation of wound progression. Appropriate assessment and wound product selection will encourage wound healing, reduce the risk of infection, minimise pain and manage exudate (Shorney and Ousey, 2011), resulting in improved patient outcomes and reduced costs (Ousey and Cook, 2012).

SUMMARY

Wound assessment is a fundamental aspect of wound management. Practitioners need to ensure they have the knowledge and skills to undertake holistic assessment of the patient and the wound. If the practitioner does not possess the in-depth knowledge and skills, they must refer to an appropriate specialist practitioner for advice.

Comprehensive assessment leads to formation of appropriate treatment aims, which link to ensuring that the correct wound care product is used at the right time; clear aims also allow for meaningful and informative evaluation of care. Ultimately accurate assessments, increased patient involvement and appropriate interventions will result in improved patient outcomes and reduction of costs, thus improving the overall quality of care.

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Case study to demonstrate the importance of assessment over time and optimal dressing selection

Patient history

Patient B, a 93-year-old man was referred to the Tissue Viability Nurse (TVN) with a possible Category 2 pressure ulcer and suspected deep tissue injury to the sacral area. He had a history of transient ischaemic attacks and had received a pacemaker following episodes of atrial ectopic tachycardia with ventricular blocks. The patient was admitted with a pyrexia and confusion and was later diagnosed with a lower respiratory tract infection. Prior to admission the patient had lived at home independently with his wife and mobilised using a wheeled walker.

On admission, the patient had a Braden Score of 15 and was being nursed on a pressure relieving foam mattress. Unfortunately the patient’s health deteriorated, which resulted in reduced mobility. He also became slightly uncooperative when the nurses tried to reposition him.



Figure 1: On presentation (week 1)

At this initial presentation the ward staff dressed the wound with a silicone foam dressing as he was doubly incontinent. This was to prevent contamination of the wound from faeces and urine and to minimise contact with excess moisture. Dressings were changed as often as required. The staff commenced a two-hourly repositioning regimen and they followed the Trust protocol of no sitting out in a chair. The patient’s mattress was also upgraded to an alternating pressure relieving mattress. Following a nutritional assessment the patient was commenced on protein supplement drinks. Unfortunately the wound deteriorated over the course of one week.



Figure 2: One week later (week 2)

On assessment the wound bed contained 10% necrotic tissue and 90% slough. There was also maceration and erythema of the surrounding skin. The TVN categorised the wound as a Category 3 pressure ulcer to the sacral area, with possible deep tissue injury that could deteriorate to a Category 4 pressure ulcer. The patient underwent a further risk assessment and it was found that his Braden Score had changed to 12; he had a low BMI of 19.1 and he was immobile and doubly incontinent.

It was decided to treat the wound with a hydrogel (ActivHeal® Hydrogel) to promote autolytic debridement, rehydrate the sloughy/necrotic tissue and provide an optimum moist wound healing environment. A three-layer polyurethane foam dressing with a perforated adhesive wound contact layer (ActivHeal® Foam Contact) was applied as a secondary dressing to ensure that the dressing remained in place while also helping to prevent contamination from urine and faeces. The foam dressing’s outer waterproof layer also acted as a bacterial barrier. It was recommended that the dressing be changed every one to two days dependent on the number of incontinent episodes.



Figure 3: 2 weeks later (week 4)

The patient was reviewed weekly. After two weeks, the wound had showed some improvement. There was now around 10% granulation tissue, 20% slough and 70% soft necrotic tissue. There was still erythema to the surrounding skin and some excoriation. The exudate levels had increased from low to medium. Following reassessment the dressing was changed to a highly absorbent fibrous dressing (ActivHeal Aquafiber®) as the primary dressing. The aim was to continue to remove the devitalised tissue through autolytic debridement and to maintain a moist wound environment through effective exudate management. The foam dressing (ActivHeal® Foam Contact) continued to be used as a secondary dressing to aid further management of the exudate and to maintain a moist wound environment. Dressing changes were reduced to twice weekly as episodes of incontinence had settled.



Figure 4: One week later (week 5)

Following reassessment the wound was categorised as a Category 4 pressure ulcer. The wound showed evidence of healing with areas of epithelialisation at the wound edges and 70% granulation tissue. There was approximately 30% slough and exudate levels were now high. The surrounding skin showed clear signs of improvement as there was no maceration or areas of excoriation visible. Following reassessment of the wound the highly absorbent fibrous dressing (ActivHeal Aquafiber®) was continued as the primary dressing and was loosely packed into the cavity and undermined areas to enable intimate contact with the wound bed. The aim was to facilitate good exudate control and maintain a moist wound healing environment. The foam dressing (ActivHeal® Foam Contact) was continued as a secondary dressing to ensure the dressing remained in place while also assisting in the management of exudate.



Figure 5: One month later (week 9)

Following twice weekly dressing changes, the wound continued to progress and at one month later there was only 5% slough now visible and 95% granulation tissue. There were also areas of epithelial tissue and the surrounding skin remained healthy with no signs of infection. Undermining to the proximal area of the wound had healed and there was only a 1cm area of undermining to the distal part of the wound. The dressing regimen was continued. The patient was discharged to a nursing home.

Outcomes

The main challenges for this wound were to remove the devitalised tissue effectively, aid autolysis and maintain a moist wound healing environment. Accurate assessment of the patient and the wound at every dressing change provided an understanding of the primary treatment aims and a holistic assessment of the patient, which resulted in a successful patient outcome.

Case study provided by Carolynne Sinclair, Tissue Viability Nurse, Countess of Chester Foundation NHS Trust

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