

How best to record and describe wound exudate

KEY WORDS

- ▶ Assessment
- ▶ Exudate
- ▶ Management
- ▶ Record

Effective, cost-efficient and patient-focused management of wound exudate continues to present unique challenges to nurses. Competence in managing patients with problematic levels of exudate requires a sound knowledge in both identifying and addressing the underlying causes of excessive exudate. Additionally, it is important to acquire supporting clinical skills including holistic assessment, accurate record keeping and effective dressing selection. There is no one, simple answer to the problems caused by excessive exudate, but as nurses become more knowledgeable about identifying and managing its causes alongside the availability of a greater range of management options, care and patient outcomes should improve.

Effective exudate management can reduce time to healing, dressing change frequency and nurse input, thereby optimising the efficiency of care delivered (Romanelli et al, 2010). It has also been documented that an appropriate choice of wound dressing and involvement of the patient in the care plan can help to eliminate exudate-related problems (Dowsett, 2008).

The Nursing and Midwifery Council (NMC, 2009) requires good record keeping as an integral part of nursing and midwifery practice, and this is essential in the provision of safe and effective care. It is not an optional extra to be fitted in as circumstances allow (NMC, 2009). Good documentation of the wound and its care provides a baseline and acts as a performance indicator from which a patient's plan of care can be evaluated (Russell, 1999).

Although there are many published descriptors and papers relating to the quantification or measurement of wound exudate (Dealey et al, 2006; World Union of Wound Healing Societies, (WUWHS), 2007; Wounds UK, 2013), a validated, user-friendly tool specifically for assessing exudate is currently unavailable (Dowsett, 2008). This article will discuss wound exudate assessment alongside the importance of accurately recording it. To support and demonstrate this process, this article will detail a holistic and patient-focused

algorithm (*Figure 1*). This tool will highlight the importance of accurate assessment and detailed recording of exudate management to facilitate better patient outcomes.

EXUDATE, ITS ROLE AND IMPORTANCE

Clinicians have described wound exudate as 'fluid coming out of the wound', 'wound fluid' and 'an excess of normal wound fluid'. Exudate contains a variety of substances including water, electrolytes, nutrients, inflammatory mediators, white cells, protein-digesting enzymes (e.g. matrix metalloproteinases), growth factors and waste products (WUWHS, 2007). Exudate has been described as fluid that, when the skin is intact, would usually bathe the cells within the dermis, providing nutrients to the cells (Davies, 2012). When there is a partial or full-thickness injury to the skin, this fluid is exacerbated as part of the inflammatory response and is an essential component of the healing process (WUWHS, 2007; Dowsett, 2011).

In 1962, Winter's work on moist wound healing helped us understand the benefits of maintaining a moist environment and had a major influence on wound-care practice (Winter, 1962; Jones, 2005). Although adoption was slow, this approach to wound healing subsequently demonstrated improved healing time alongside a reduction in pain, discomfort and infection rates (Dowsett,

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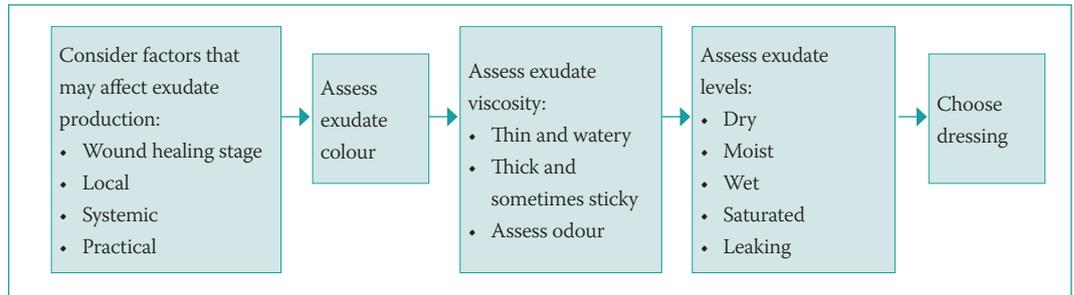


Figure 1. Overview of the exudate management pathway (3M, 2012).

2011). Much work has been undertaken since. For example, Thomas (2010) has shown that wound fluid assists healing by:

- ▶▶ Preventing drying out of the wound bed
- ▶▶ Aiding migration of tissue-repairing cells
- ▶▶ Providing nutrients for cell metabolism
- ▶▶ Enabling the diffusion of immune and growth factors
- ▶▶ Assisting in autolysis (the body’s natural wound debridement process).

Although the production of exudate to support wound healing is both necessary and desirable, problems arise when exudate becomes excessive and difficult to manage. The theory of moist wound healing requires knowledge of the fine balance between being therapeutically moist and not too wet (Benbow and Stevens, 2010).

ASSESSING AND RECORDING EXUDATE

The management of wounds became a nursing responsibility in the 1930s, when experienced ward sisters were trained to change dressings (Dealey, 1994). Gradually, this role grew and became a general nursing responsibility. In the UK wound care is an area that is predominately led by nurses. The emphasis on good wound documentation has been influenced by an increase in the number of wound care products available and the increased likelihood of litigation. Dealey (1994) states that the ability to make an accurate assessment of a patient’s wound is considered to be an important nursing skill, and as such health professionals should use evidence-based decision-making tools to make a detailed assessment (Dowsett, 2008). As many contributing factors can affect exudate production, assessment should include (Dowsett, 2011):

- ▶▶ A holistic assessment of the patient

- ▶▶ The impact that high levels of exudate can have on the patient’s quality of life
- ▶▶ Assessment of the wound and peri-wound skin condition
- ▶▶ Assessment of the type and amount of exudate
- ▶▶ Assessment and documentation of the current dressing regimen and its effectiveness at managing exudate.

The NMC (2009) states that good record keeping, whether at an individual, team or organisational level, has many important functions. These include a range of clinical, administrative and educational uses (see *Box 1*).

To this end, assessing, describing and recording the characteristics of exudate should be highlighted within a plan of care. This, however, is often regarded as a minor component of wound assessment. The WUWHS (2007) highlights that a change in characteristics could

Box 1. The uses of record keeping in practice (WUWHS, 2007; Wounds UK, 2013).

- ▶▶ It shows how care decisions were made through documentation
- ▶▶ It supports effective clinical judgements and decisions
- ▶▶ It supports patient care and communications
- ▶▶ It makes continuity of care easier
- ▶▶ It promotes better communication and sharing of information between members of the multidisciplinary healthcare team
- ▶▶ It helps to identify risks, enabling early detection of complications

Table 1. Assessing exudate colour (WUWHs, 2007) .

| Colour | Explanation |
|----------------------|--|
| Clear, straw | Often considered normal, but may be associated with infection such as <i>Staphylococcus aureus</i> ; may also be due to fluid from a urinary or lymphatic fistula |
| Cloudy, milky, clear | A response to inflammation. Fibrinous exudate may indicate the presence of fibrin strands. Can indicate possible infection. Purulent exudate contains white blood cells and bacteria |
| Red, pink | Colour is due to the presence of red blood cells. This may indicate capillary damage caused by traumatic dressing removal. Blood is commonly found in post-operative wounds. Blood leakage can indicate possible infection |
| Green, yellow | This may be indicative of a bacterial infection. A common example would be <i>Pseudomonas aeruginosa</i> . This may typically be found in the case of leg ulcers |
| Yellow, brown | This colour is most frequently associated with an established infection but can also be related to removal (liquefaction) of necrotic tissue and material from an enteric or urinary fistula |

indicate an alteration in wound status or an associated comorbidity and requires re-evaluation of the patient’s condition. Over the years many working tools have been developed to help influence best practice (Wounds UK, 2013). This article highlights an exudate management tool (Figure 1) using published, evidence-based best practice (WUWHs, 2007; Wounds UK, 2013) to aid holistic assessment and accurate recording of wound exudate. This algorithm is designed to assist clinicians to assess individual components of exudate in a logical order:

- » Factors that may affect exudate production
- » Exudate colour
- » Exudate viscosity
- » Odour
- » Exudate levels and risk to the peri-wound.

An increase in exudate can be influenced by a variety of factors and its cause is not always taken into account within a management plan (Wounds UK, 2013). The first section of the algorithm in Figure 1 identifies factors affecting exudate that should be identified, addressed and documented in a plan of care.

Wound healing stage

Stages within the wound healing process can influence exudate production, including static or delayed healing. In chronic wounds, exudate can prolong the inflammatory phase and can

be detrimental to wound healing. Wound exudate, particularly from chronic wounds, contains not only water but often cellular debris and enzymes, which can be corrosive to the intact skin. Protecting such intact skin surrounding the wound is essential (Guest et al, 2011).

Local factors

Many local factors associated with wound position and the wound itself influence the production of exudate. Factors such as bacterial burden, oedema, contact sensitivities and foreign bodies can all contribute (Wounds UK, 2013). A foreign body at first acts as an irritant and induces a reaction in the tissue, such as inflammation, which can lead to an increase in exudate production. Foreign bodies can include a suture, dressing debris and contamination following injury.

Systemic factors

Holistic assessment of the patient including comorbidities and medication are important factors associated with exudate production. For example, congestive heart failure can lead to oedema, resulting in increased exudate levels due to fluid overload (Wounds UK, 2013). Care must be taken to ensure that the cardiac system is not overloaded by a large quantity of fluid being suddenly pushed back into the circulation as a result of compression therapy. These conditions should be managed when possible. The nurse should consider when the patient last had a medication review and take appropriate action.

Practical factors

Many practical factors can influence the decision-making process, such as dressing availability, anatomical challenges and patient concordance, which can have then have an impact on clinical outcome. The patient may be unwilling or unable to comply with a chosen treatment (WUWHs, 2007) or the patient’s situation and circumstances may effect the proposed treatment, for example a full-time worker needing regular dressing changes. Effective support and education can lead to patients feeling empowered and result in improved concordance.

Colour

The colour of exudate in wounds may change as a result of various physiological processes. A clear understanding of exudate colour and its implications are key to effective exudate management (Wounds UK, 2013). Davies (2012) describes exudate as usually clear or straw-coloured fluid. In certain circumstances, this colour may change (see *Table 1*), but such a change can still be viewed as ‘normal’. Assessment and documentation of a change in colour may be indicative of infection and this should be acted on quickly (Wounds UK, 2013). It is important that the colour of the exudate is recorded at every dressing change to ensure that subsequent assessments have relevant information with which to compare (Davies, 2012).

of the exudate (Dowsett, 2011). For example, WUWHS (2007) states that exudate of high viscosity can appear thick and sometimes sticky, while low viscosity exudate is thin and watery. The latter case indicates low protein content. This could be a result of venous impairment, congestive cardiac disease or malnutrition. It can also suggest a urinary, lymphatic or joint space fistula. Thick and sometimes sticky exudate can indicate a high protein content, pointing towards infection or the inflammatory process. Other causes of exudate with high protein content are the presence of necrotic material and enteric fistulas and residue from dressings or topical preparations. High levels of highly viscous exudate could lead to potential protein loss and should be managed as appropriate.

Exudate viscosity

The viscosity of exudate should be recorded and dressings selected based on the characteristics

Wound odour

Wound odour can be a significant issue for the patient, contributing to distress, embarrassment,

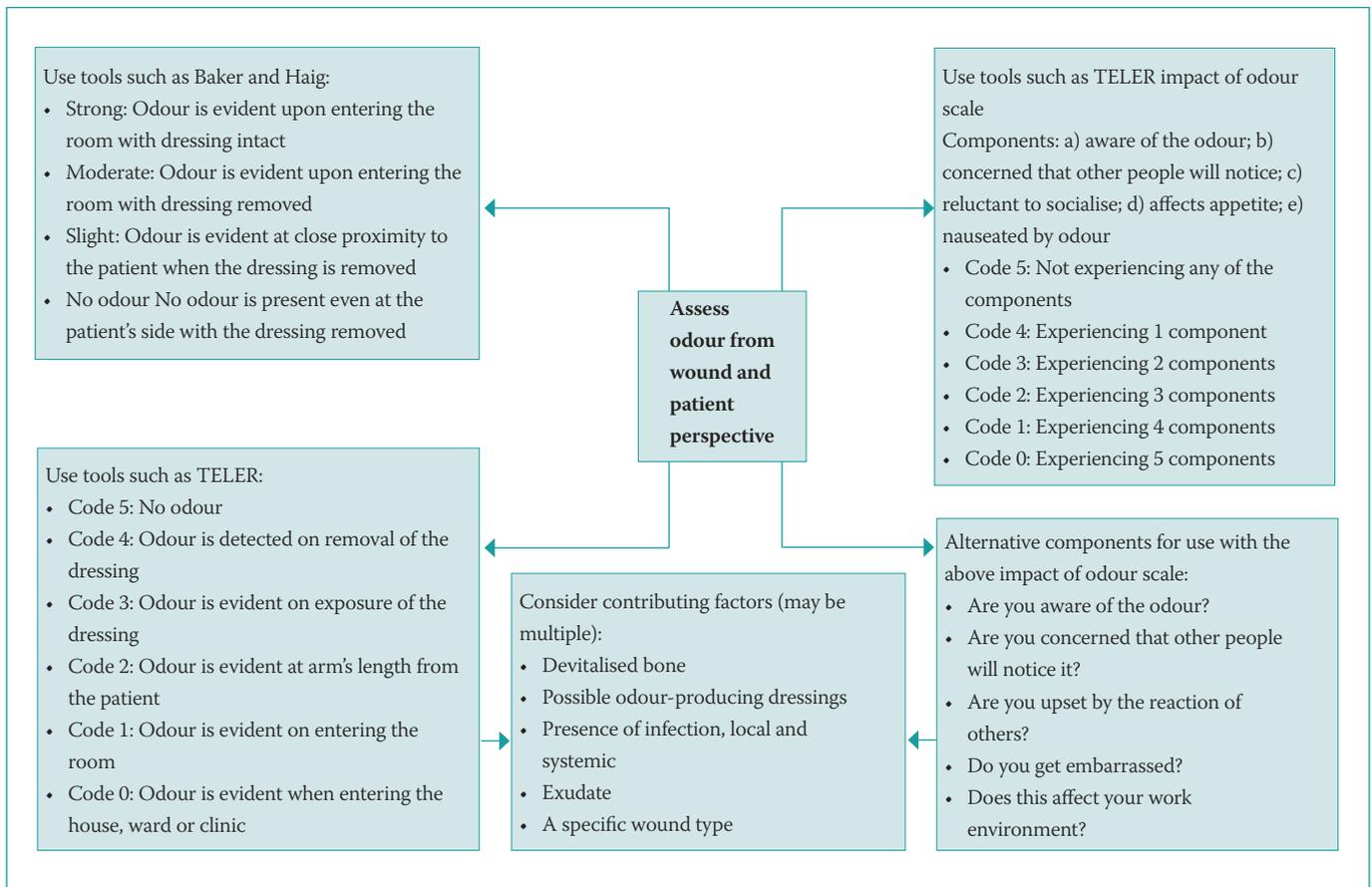


Figure 2. Odour assessment pathway (Wounds UK, 2013).

Table 3. Assessment of exudate levels (3M, 2012; Wounds UK, 2013).

| Dry | Moist | Wet | Saturated | Leaking |
|---|---|---|--|---|
| No visible moisture Not an ideal wound healing environment May be ideal for ischaemic wounds (consider vascular referral) Consider hydrating eschar Consider potential dressing adherence Surrounding skin may be scaly, atrophic and hyperkeratotic | An ideal wound healing environment Dressing may be slightly marked Wound bed could appear glossy Reduce dressing change frequency Surrounding skin may be intact and hydrated | Dressing may be extensively marked Potential fragmented areas of maceration Consider appropriate peri-wound protection Select dressing with appropriate liquid-handling properties | Free fluid is visible Primary dressing is wet and strike-through may occur If exudate escapes and/or frequent dressing changes are required, use high-fluid handling capacity dressing Risk of macerated/denuded peri-wound skin Use appropriate peri-wound dressing | Free fluid is visible Dressings are saturated, with exudate leaking from primary and secondary dressings High risk of extensive peri-wound maceration Super absorbency products are necessary Use appropriate peri-wound dressing |
| Choose: • Film • Hydrogel • Hydrocolloid | Choose: • Adhesive foam • Nonadhesive foam • Contact material • Clear, absorbent acrylic | Choose: • Adhesive foam • Nonadhesive foam • Alignate • Clear, absorbent acrylic • No sting barrier cream | Choose: • Adhesive foam • Alignate • Super absorber • No sting barrier cream | Choose: • Super absorber • Topical negative pressure* • No sting barrier cream |

*CONSIDER: If your primary treatment aim is to manage high volumes of exudate, consideration should be paid to the treatment options available. Topical Negative Pressure is an effective but costly treatment option that is designed to manage and treat complex situations. Super absorber dressings may provide a more cost effective treatment, if the objective is to manage exudate.

social isolation and disturbed sleep, and leading to low self-esteem. Malodour can be associated with uncomplicated wound healing, such as liquefying necrotic tissue within autolytic debridement; however it can also indicate an increase in bacterial colonisation which can lead to infection (Wounds UK, 2013).

Odour is difficult to quantify, can be subjective and needs to incorporate both the clinician's and patient's perspectives. A diagrammatic tool published in the Wounds UK (2013) best practice document illustrates the use of two existing approaches in achieving a joined-up patient-focused approach (Figure 2). While it is important to record levels of odour, without continuity this can be difficult to evaluate. WUWHS (2007) uses a classification tool to aid assessment and recording by using descriptors alongside low, moderate and high. For example, low would identify odour after removal of a primary dressing whereas high levels would be noticeable prior to change, with the patient being aware. It is also important to note that some dressings, such as hydrocolloids and hydrogels, may produce a characteristic odour (Wounds UK, 2013).

Exudate levels

Wound assessment forms commonly ask for exudate levels to be recorded using either the symbols +, ++ and +++ or subjective descriptions such as 'low', 'moderate' and 'high'. This can lead to the recorded descriptions of exudate levels varying considerably between clinicians and it is therefore subsequently difficult to evaluate changes. This final section of the exudate algorithm (Figure 1 and Table 3) incorporates the classification method stated in the WUWHS (2007) principles of best practice consensus document. This assessment approach uses information gained from assessing the current dressing, exudate levels at the wound bed and condition of the peri-wound (Wounds UK, 2013).

As with control of odour, patients need to feel confident that treatment will not have an impact on their activities of daily living (Bishop et al, 2003). Exudate must be effectively managed if the optimal moist environment necessary for wound healing is to be maintained. In order to achieve these goals, a sound knowledge of dressing materials and their performance is required and essential.

APPROPRIATE DRESSING SELECTION

Grey et al (2002) suggest that when choosing the most appropriate management solution it is important to consider both the clinical and economic performance of wound dressings. Changing dressings too frequently may lead to trauma to the wound bed and adhesive skin stripping. Inappropriate dressing selection can also lead to inappropriate allocation of resources due to dressings falling off or needing to be changed prematurely.

There are many points to consider when selecting the correct dressing. Gardener (2012) The properties provided by the ideal dressing are listed in *Box 2*.

CONCLUSION

In recognition of dynamic changes as the wound progresses through the phases of wound healing, there is a need for regular holistic assessment. Accurate documentation and the use of a consistent method of recording clinical indications using the characteristics of exudate and a clinical algorithm will support patient care. Assessing, describing and recording exudate in a clear and measurable way will ensure that nurses choose the most appropriate treatment to manage the wound and monitor the effectiveness of the wound care they are providing. Effective exudate assessment and subsequent management supports appropriate dressing selection, improved patient outcomes, decreased healing time and reduced wastage.

WUK

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Box 2. Properties provided by the ideal dressings (Gardener, 2002).

- ▶▶ Highly absorbent (when appropriate)
- ▶▶ Prevents leakage between dressing changes
- ▶▶ Prevents strike-through
- ▶▶ Provides protection from excoriation/maceration
- ▶▶ Can be used under compression
- ▶▶ Stays intact and can be left in place for a long duration (exceptions are where regular inspection of the wound is necessary to detect subtle early signs of infection, e.g. diabetic foot ulcers)
- ▶▶ Minimises trauma and pain on removal
- ▶▶ Comfortable and conformable
- ▶▶ Cost-effective

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