

GUIDELINES FOR PRACTICE

EFFECTIVE DEBRIDEMENT IN A CHANGING NHS

A UK consensus

EDITOR:

Rita Som

PUBLISHER:

Kathy Day

PUBLISHED BY:

Wounds UK
Enterprise House
1-2 Hatfields
London SE1 9PG, UK
Tel: + 44 (0)20 7627 1510
Fax: +44 (0)20 7627 1570
info@wounds-uk.com
www.wounds-uk.com

Wounds UK

© Wounds UK 2013

This document has been developed by Wounds UK and supported by an unrestricted educational grant from Activa Healthcare.



The views expressed are those of the expert working group and review panel and do not necessarily reflect those of Activa Healthcare.

How to cite this document:

Effective debridement in a changing NHS: a UK consensus. London: Wounds UK, 2013. Available from: www.wounds-uk.com

Foreword

Wound care is increasingly seen as a specialist area, a view which can result in non-specialist nurses and other healthcare professionals believing that techniques such as debridement are best left to tissue viability nurses and staff with specialist skills. Generalist nurses remain the primary point of care for most patients and play an important role in clinical decision making regarding whether debridement is necessary, which method to use, and whether to perform debridement themselves or refer.

Debridement at an early and appropriate stage is likely to accelerate wound healing and improve patient care, which will in turn improve patient health and wellbeing, reduce bed days, treatment costs and readmission rates, as well as optimise the time staff spend with patients. This efficient, cost-effective, patient-centred approach is central to delivering NHS services today.

A consensus meeting of key experts held in November 2012 debated the role of debridement in the management of patients with wounds, and in particular how to enhance practice and patient outcomes in the UK. Following the meeting a draft document was produced which underwent extensive review by the expert group and reviewers, with the purpose of building on the recently published EWMA (2013) document on debridement to help nurses implement effective debridement techniques in practice. The decision pathway for debridement (page 7) also underwent review by nurses working in both acute and community settings to ensure it offers a useful, stand-alone tool for practice.

This document aims to provide nurses and other healthcare professionals, who care for patients with wounds in both community and acute care settings, with the information and practical tools required to facilitate optimum wound healing through appropriate debridement. It promotes nurses' greater understanding of debridement, and provides a driver for improved allocation of resources and training of nurses in debridement methods, as a means of improving outcomes for patients.

Trudie Young (Chair)**EXPERT WORKING GROUP**

Paul Chadwick, Principal Podiatrist, Salford

Michael Clark, Professor in Tissue Viability, Birmingham University

Sian Fumarola, Clinical Nurse Specialist in Tissue Viability, University Hospital of North Staffordshire

Judy Harker, Nurse Consultant Tissue Viability, Pennine Acute Hospitals NHS Trust

Helen Harris, Tissue Viability Nurse Specialist, Sirona Care and Health, Bath

Brigitte Price, Tissue Viability Nurse Specialist, Wrexham

Duncan Stang, Advanced Specialist Podiatrist, Hairmyres Hospital, NHS Lanarkshire; Diabetes Foot Coordinator for Scotland

Kathryn Vowden, Nurse Consultant, Bradford Teaching Hospitals NHS Trust

Peter Vowden, Consultant Vascular Surgeon and Visiting Professor of Wound Healing Research, Bradford Teaching Hospitals NHS Trust, University of Bradford; Clinical Director NIHR Bradford Wound Treatment Healthcare Technology Cooperative

Trudie Young (Chair), Honorary Tissue Viability Nurse, Aneurin Bevan Health Board; Honorary Lecturer in Tissue Viability, Bangor University

REVIEW PANEL

Jill Francis, Professor of Health Services Research, City University London

Shane Gordon, Clinical Chief Officer, North East Essex Clinical Commissioning Group; National Co-lead NHS Alliance Clinical Commissioning Federation

Understanding debridement

BOX 1: What is debridement?

The consensus group considered the current definitions of debridement and agreed on the following:

'Debridement is the removal of dead, non-viable/devitalised tissue (see Box 2), infected or foreign material from the wound bed and surrounding skin.'

Debridement should be considered an integral part of the process of caring for a patient with a wound. At a most basic level, debridement is defined as a natural process that occurs in all wounds and facilitates the removal of damaged and necrotic tissue, extraneous debris and bacteria from the wound to encourage the formation of healthy granulation tissue (Box 1).

This natural process is known as autolytic debridement and is considered the safest way to debride. It is the method most usually undertaken by nurses without specialist debridement skills or equipment, using appropriate moist wound dressings. Autolytic debridement can be slow and is not always the most beneficial treatment for progressing a wound towards healing (Young, 2011). If the process of debridement is accelerated, healing may be achieved more quickly (Steed et al, 1996).

Autolytic debridement is often overused as the sole method of debridement, other forms of debridement being regarded as the remit of wound care specialists and tissue viability nurses (TVNs). However, the power to alter outcomes by choosing a more appropriate intervention lies with all practitioners and should be based on their assessment of patient need (Gray et al, 2011).

Dressings that optimise a moist wound environment, by adding (hydrating wound eschar) or removing moisture (excess exudate), will facilitate autolytic debridement of the wound bed. Other more active forms of debridement may be needed to accelerate and optimise wound healing.

METHODS OF DEBRIDEMENT

A number of techniques for actively debriding a wound, which may be used in addition to autolytic debridement, are briefly described in Table 1 (page 2). Although many of these alternative methods of debridement require the practitioner to possess specific skills or have access to specialist equipment, there are some that can be performed by non-specialists (Table 1, page 2). Nurses must be competent to decide which method of debridement is required, but need not necessarily be trained in particular debridement techniques as patients can be referred to a qualified practitioner for more advanced debridement methods. This document contains a debridement checklist, page 5, and decision pathway, page 7, to assist practitioners in care planning and implementation.

As many patients with wounds are seen initially by practitioners working in the community, their actions and decisions about when to debride and which method to choose are key to wound progression. The sense of satisfaction at being able to intervene and make such a difference is invaluable to nurse morale and the quality of the care they are inspired to provide.

For practitioners to best care for their patients, they must be equipped with the knowledge to be able to consider accelerating healing through debridement and must understand:

- the debridement options available, how and why they are undertaken
- the interventions (including referral) open to them; and
- how to measure the success of those interventions.

This will enable practitioners to:

- recognise when debridement is required
- decide which technique is most suitable; and
- act/refer appropriately to ensure the patient receives the best care.

Empowering practitioners to be more competent in debridement, through them gaining the skills necessary to perform a wider range of techniques and by ensuring they have access to appropriate resources, is an opportunity to improve quality of care and cost-effectiveness in a changing NHS.

BOX 2: Common terms explained

Devitalised tissue: has no blood supply, for example hyperkeratotic tissue, callus, slough or necrotic tissue, and will not come back to life with treatment and time.

Non-viable tissue: has a range of appearances: it may be yellow, grey, purple, black or brown and can have a soft or slimy consistency, or form a hard leathery eschar (EWMA, 2004), depending largely on the hydration status of the tissue (Young, 2011).

TABLE 1. Types of debridement (adapted from Vowden and Vowden, 2011)

Type	Mechanisms of action	Advantages	Disadvantages	Who/where	Action
Autolytic	A naturally occurring process in which the body's own enzymes and moisture rehydrate, soften and liquify hard eschar and slough. Occlusive or semi-occlusive dressings (hydrogel, hydrocolloid, alginate or Hydrofiber®) help to achieve moisture balance, by absorbing excess exudate or donating moisture	Can be used before or between other methods of debridement (eg a hydrogel could be applied to soften tissue before larval therapy), when there is a small amount of non-viable tissue in the wound, ie maintenance debridement	The process is slow, increasing potential for infection and maceration	Generalists and specialists can implement this	Debride using appropriate dressings for moist wound healing
Mechanical	Traditional wet-to-dry method is not recommended in the UK. Newer methods include removing non-viable tissue from a wound using a monofilament soft pad (Debrisoft®, Activa Healthcare)	Using Debrisoft® can be more selective, quick and easy. It can achieve effective removal of hyperkeratosis. Little pain is experienced. Patients can use it under supervision	Not suitable for use on hard, dry eschar. Can be used as a precursor or follow-up to larval therapy or sharp debridement. Not suitable for already painful wounds.	Generalist and specialist. Can be done in the community, the clinic or at the bedside and is a useful addition to autolytic debridement at dressing changes	Debride using Debrisoft® OR Autolytically debride and organise Debrisoft® for next time
Larval therapy (biosurgical)	Larvae of green bottle fly (<i>Lucilia sericata</i>) remove moist devitalised tissue from the wound. Larvae are also able to ingest pathogenic organisms present. Larvae are available loose or in a 'bagged' dressing	Highly selective and rapid	Unit costs higher than for autolytic debridement but treatment time is short. Needs to be planned in advance. Not suitable for all patients or wounds. Eg, malignant lesions; wounds that bleed easily; those that communicate with a body cavity of an organ or are near major blood vessels; wounds with dry devitalised tissue; wounds with excessive exudate or where the larvae cannot be protected from being crushed. Exercise caution with anticoagulants	Generalist or specialist practitioner with minimal training. Bagged larvae method reduces the skill level required and can be left in place for 4-5 days. Contraindicated for use in anticoagulated patients at home. See manufacturer's instructions on use with antibiotics	Debride if equipment is available, OR Plan to have the equipment and autolytically debride in meantime, OR Refer if time-sensitive
Ultrasonic	Devices deliver ultrasound either in direct contact with the wound bed or via an atomised solution (MIST®; Celleration). Most include a built-in irrigation system and are supplied with a variety of probes for different wound types	Immediate and selective. Can be used for excisional debridement and/or maintenance debridement over several sessions. Has some antimicrobial activity	Availability limited due to higher costs and requirement for specialist equipment. Requires longer set-up and clean-up time (involving sterilisation of hand pieces) than sharp debridement. May require multiple treatments	Specialist training needed to perform procedure. Can be used in a variety of settings, depending on local protocol. Not often used outside the clinic due to infection control/contamination issues	Refer if non-specialist
Hydrosurgical	Removal of dead tissue using a high energy saline beam as a cutting implement	Short treatment time and selective. Capable of removing most, if not all, devitalised tissue from the wound bed without compromising healthy tissue. Can also remove hyperkeratotic tissue from wound margins	Requires specialist equipment and training. Potential for aerosol spread of infection. Can be painful. Not always available and associated with higher costs, although is often cost-effective when compared with surgical debridement, since it does not require theatre time	Specialist practitioner with relevant training. Can be used in a variety of care settings, depending on local protocol. It is not often used outside the clinic due to infection control/contamination issues	Refer if non-specialist
Sharp	Removal of dead or devitalised tissue using a scalpel, scissors and/or forceps to just above the viable tissue level. Undertaken in conjunction with other therapies (eg autolytic debridement). The most commonly used form of debridement in managing the diabetic foot	Selective and quick. No analgesia normally required. Works best on harder eschar that can be grasped with forceps	Practitioners must be able to distinguish tissue types and understand anatomy as procedure carries risk of damage to blood vessels, nerves and tendons. Not as effective on soft adherent slough. Does not result in total debridement of all non-viable tissue	Skilled practitioner (podiatrist, specialist nurse) with specialist training. Can be done at bedside or in clinic	Refer if non-specialist
Surgical	Excision or wider resection of non-viable tissue, including the removal of healthy tissue from the wound margins, until a healthy bleeding wound bed is achieved	Selective and best used on large areas where rapid removal is required	It can be painful for the patient and anaesthetic is normally required. Associated with higher costs related to theatre time	Must be performed by a surgeon, podiatrist or specialist nurses with appropriate training, in the operating theatre	Refer

Key: Light pink A natural process facilitated during moist wound healing; Green Generalist nurses can perform these methods; Orange Specialist training needed; Dark orange Surgeon or specialist practitioner who has undergone further training

Why is debridement important?

The role of debridement in wound bed preparation has been well documented (Falanga, 2001; EWMA, 2004; Wolcott et al, 2009; Strohal, 2013), and effective debridement has been shown to be associated with reduced exudate, a reduction in odour and the appearance of granulation tissue in the wound bed (Vowden and Vowden, 2011).

Non-viable material and debris in a wound can:

- Pose a physical barrier to healing (Kubo et al, 2001) and may impede normal extracellular matrix formation, angiogenesis, granulation and epidermal resurfacing (Weir et al, 2007)
- Reduce the effectiveness of topical preparations, such as antimicrobials and pain relief (Weir et al, 2007)
- Mask or mimic signs of infection (O'Brien, 2002) and serve as a source of nutrients for bacteria, particularly anaerobes such as *Bacteroides* species and *Clostridium perfringens* (Leaper, 2002)
- Contribute to overproduction of inflammatory cytokines, which can promote a septic response (Leaper, 2002) and lead to the overproduction of matrix metalloproteinases (MMPs) (Weir et al, 2007)
- Prevent the practitioner from gaining an accurate picture of tissue destruction and inhibit correct assessment of the wound (Leaper, 2002; Weir et al, 2007), which is particularly relevant in pressure ulcers and diabetic foot ulcers
- Lead to overproduction of exudate and odour (Vowden and Vowden, 2011).

It is generally accepted that necrotic tissue must be removed as quickly and efficiently as possible to assist with wound assessment, reduce bioburden (Reid and Morison, 1994), remove biofilms and prevent infection (Ayello et al, 2004). Effective debridement can progress a wound along the wound healing continuum (Box 3) (Gray et al, 2002), allowing nurses to significantly improve patients' wellbeing and quality of life, as well as contribute to optimal wound healing and use of healthcare resources (Gray et al, 2009).



Figure 2: Postoperative dehiscence of umbilical hernia. Top: before debridement. Bottom: thirty days later after the slough was debrided with monofilament pad on multiple occasions

BOX 3: The wound healing continuum explained (from Gray et al, 2009)

The wound healing continuum is a framework for identifying where a wound is in relation to healing, by assigning colours to wounds: black, yellow, red, pink, and the intermediary shades (Gray et al, 2009). By identifying the primary colour visible in the wound – a wound containing yellow slough and red granulation tissue would be defined as a yellow/red wound – the colour to the left of the continuum is identified (yellow) and the management plan formed around this. The yellow tissue would be removed to promote growth of the red granulation tissue. Wounds can consequently move along the continuum as they progress towards healing. The Applied Wound Management clinical framework is based on this continuum, and how the continuum relates to exudate and infection.

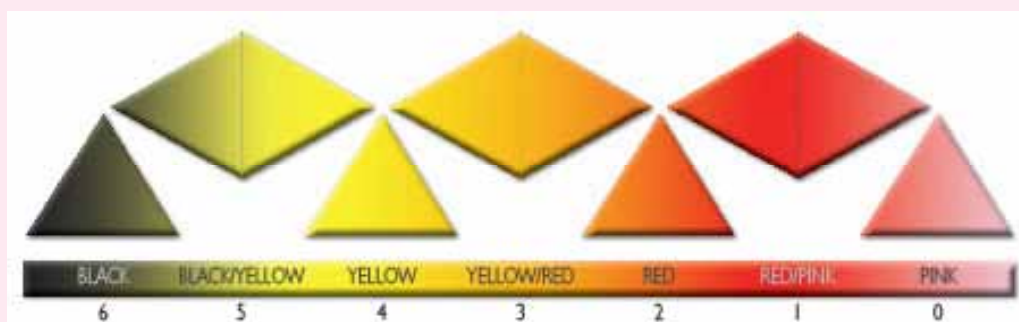


Figure 1: The Wound Healing Continuum (from Gray et al, 2009)

BOX 4: Common terms explained

Bioburden: The number of micro-organisms living on a surface.

Biofilm: A complex microbial community of bacteria and fungi, which synthesise and secrete a protective matrix that attaches the biofilm firmly to the living or non-living surface (Phillips et al, 2010).

Knowing when to debride

BOX 5: Debridement and TIME

Debridement can be an essential element of wound bed preparation reflecting the T in the TIME framework:

T Tissue management
I Infection
M Moisture
E Edges, non-advancing or undermined.

Practitioners use the TIME framework to accurately assess the wound, identify the presence of devitalised tissue and plan appropriate interventions. If devitalised tissue is removed from the wound bed, the wound can progress through the remaining phases of wound healing (Dowsett and Newton, 2005).

A comprehensive wound and patient assessment underpins the decision to debride a wound and which method to use.

WOUND ASSESSMENT

All practitioners caring for a patient with a wound must be able to assess a wound competently, as well as understand the results in order to develop an evidence-based management plan (Ousey and Cook, 2012). A wound assessment must consider and document the following aspects:

- Underlying cause
- Wound location and size
- Wound bed
- Infection
- Exudate
- Periwound skin
- Circulation.

Wounds should be photographed or traced, in accordance with local guidelines, and the results documented at each episode of care (Ousey and Cook, 2012) as a way of measuring a wound's progress and the success of any interventions. Debridement may also assist in wound assessment by removing non-viable tissue, slough and excess exudate to help visualise the wound bed more accurately (Ousey and Cook, 2012).

The principles of wound bed preparation (Schultz et al, 2003; Jones, 2004) and the TIME concept (Dowsett and Ayello, 2004) (Box 5) are well-used systematic approaches to wound assessment that will inform debridement decisions. The applied wound management framework is based on the wound healing continuum, the exudate continuum and the wound infection continuum. It provides a systematic, practical approach to wound assessment and clinical decision-making useful for practitioners less familiar with wound management (Gray et al, 2009). Wound healing pathways and expected outcomes will vary for chronic and acute wounds (Box 6).

PATIENT ASSESSMENT

A comprehensive assessment of the patient will inform the practitioner as to whether debridement is appropriate. An holistic approach focuses on general health, including comorbidities, concurrent treatment and medication, the care setting (eg whether the patient is mobile or cared for entirely in the home), and the patient's overall physical and mental wellbeing. A patient's pain, nutritional status (Ousey and Cook, 2012) and ability to adhere to a treatment regimen will also influence decisions about debridement.

BOX 6: Chronic and acute wounds

Chronic wounds and acute wounds have different requirements and outcomes based on the variations in their healing pathways (Adderley, 2008; EWMA, 2004).

Chronic wounds often contain a mixture of necrotic (dead) tissue and slough, which has a tendency to reaccumulate due to the nature of the underlying disease. Ongoing multiple debridements, known as 'maintenance debridement', are frequently required. This is particularly the case for wounds in which healing is not an option. Debridement often aids management of symptoms by reducing excess exudate, malodour and pain.

Acute wounds have often not been present long enough to develop necrotic tissue. Debridement is more likely to be performed to remove foreign bodies and tissue that is already, or has the potential to become, devitalised. Its function is to clean the wound and prepare it for healing, and often debridement only needs to be performed once.

However, for both chronic and acute wounds it is not always possible to completely debride a wound in one attempt, needing instead to perform maintenance debridement, which is often the case in community settings. Practitioners should be guided by the current phase of wound healing.

In assessing the wound, the practitioner must ask a number of questions about whether or not debridement is required, the optimum time frame for debridement and who should be involved, as well as the consequences of not debriding the wound (Box 7).

SETTING TREATMENT OBJECTIVES

It is important at each dressing change to reassess the wound and to review the need for further debridement. If the wound is not progressing review the assessment and current treatment and look for an underlying cause of delayed healing (such as ischaemia, infection or inflammation). In some situations there may be a need to accelerate debridement and look at other methods associated with a quicker time to healing. Short and long-term objectives for the debridement process must be decided and documented, based on the wound management plan, so that outcomes and success can be measured against them.

BOX 7: Checklist for debridement decisions

The aim/goal for the wound

- Is debridement appropriate for this wound? NO ➤ KEEP DRY
- Should I take a conservative approach (stabilise the wound)? YES ➤ AUTOLYTICALLY DEBRIDE
 - Do I need to change method of debridement? YES ➤ CONSIDER OTHER METHODS
- Should I actively try to accelerate the wound healing process? YES ➤ ACCELERATE DEBRIDEMENT
 - Is non-viable tissue delaying healing?
 - Does the wound edge/periwound skin or wound bed require accelerated debridement?
 - Is acceleration of debridement going to help the management of infection in this wound?
 - Is acceleration of debridement in the best interests of the patient at the moment?
- Am I certain what to do? NO ➤ CONSULT MULTIDISCIPLINARY TEAM, DO NOT DEBRIDE



Accelerate healing through debridement

- Have I discussed the debridement options with the patient/family members?
- Do I have the skills to perform the chosen method of debridement myself?
 - Am I confident in what I am doing? NO ➤ REFER
 - Can I make things worse/do harm? YES ➤ REFER
 - Is the current environment safe to undertake debridement? YES ➤ DEBRIDE
 - Have I got the resources/equipment necessary? YES ➤ DEBRIDE



NO ➤ REFER or PLAN RESOURCES

Expected outcomes of debridement

- Will the intervention remove non-viable tissue in one go?
- Will it be a gradual/staged process?
- Will the debrided wound be ready for another therapy, eg negative pressure wound therapy, skin grafting? YES ➤ SET DATE FOR REVIEW

Options at every stage

- Check clinical guidelines/policies
- Seek advice from a specialist or colleagues in the multidisciplinary team (as simple as making a call)
- Refer to another practitioner for debridement
- Debride wound, selecting the most appropriate method based on: wound and patient need, speed with which debridement is necessary and patient preference



Figure 3: A postsurgical wound in the area of the first interdigital joint of a patient with neuropathy and type 2 diabetes, after removal of the big toe and first ray. Top: before debridement. Below: following sharp debridement and mechanical debridement using a monofilament pad by a podiatrist. Between appointments, appropriate dressings were applied to facilitate autolytic debridement and moist wound healing. This illustrates how specialist and generalist debridement methods are used in combination.

INVOLVEMENT OF MULTIDISCIPLINARY TEAM

In reality, methods of debridement are often chosen based on the skills of the attending practitioner, the perceived availability and accessibility of alternative skills and resources, and financial considerations (Fumarola, 2012a). The complexities of patients and their wounds will often necessitate consulting others in the wider multidisciplinary team (MDT) to reach a diagnosis and create a management plan, which will inform whether to debride or not and indicate the appropriate method (Box 8, Figure 4).

If there are queries around clinical objectives, competing methods of debridement or no experience to draw on, advice must be sought from TVNs, podiatrists and other specialists. For example, if a wound is necrotic as a result of poor perfusion refer the patient to the vascular team for revascularisation before moving to other treatment options. Discussion with the MDT will strengthen the wound management plan and result in better outcomes for the patient and optimal use of healthcare resources (Edmonds and Foster, 2004, 2005; Vowden and Vowden, 2011; NICE, 2004, 2012).

Consulting others may cause a delay in treatment if a member of the MDT cannot be reached immediately. The attending practitioner should, in the meantime, elect to use simple and immediate methods of debridement (eg mechanical debridement using a monofilament pad or autolytic debridement), turn to moist wound healing or maintain a dry eschar while waiting to discuss the options with the MDT. GPs can advise on and facilitate access to services.

Deciding whether a wound needs debriding or not, and the method by which to debride it, are guided by the desired outcome for that wound (Figure 5).

DEBRIDE OR DON'T DEBRIDE?

There are relatively few wounds where it is not safe to debride if the correct method is chosen. As a general rule, if the wound is not covered in granulation tissue, debridement can be performed to progress a wound towards healing. However, patient safety is paramount: practitioners should possess the appropriate skills, be confident in their knowledge of the anatomy of the area and certain of the diagnosis. If they are not competent in the selected method of debridement, it is important to refer to someone with the requisite skills and equipment. Some areas demand extra caution and should not be debrided before advice is sought (see page 9).

Having made the decision to debride, the method of debridement must be selected based on clinical information, the care setting and negotiations with the patient (Fumarola, 2012a).

BOX 8: Selecting a debridement method

Rationale for selecting a debridement method must be based on the wound management plan and the goals for each patient and wound. A particular wound might be debrided by a range of different methods over time, depending on the need to accelerate or stabilise healing.



Figure 4: Left: A leg ulcer of seven months' duration with hard eschar on the wound surface. A monofilament pad was used to remove hyperkeratosis from the surrounding skin and soften the edges of the eschar before sharp debridement removed it. Right: After a monofilament pad had been used to remove slough and expose granulation tissue

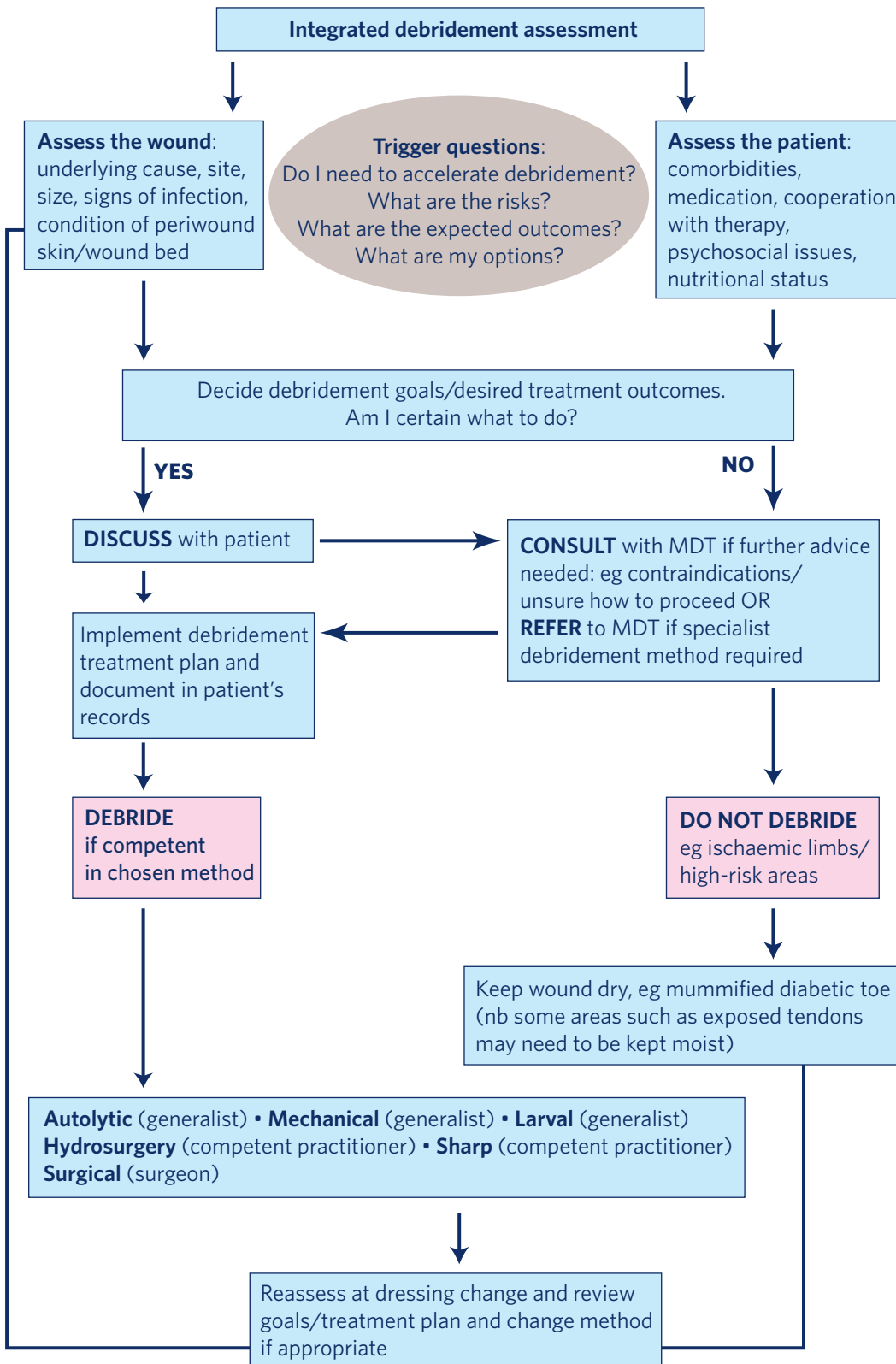


Figure 5: A decision pathway for nurses considering debridement

Selecting a method of debridement



Figure 6: Top: Traumatic haematoma on the inside of a 63-year-old patient's right leg. Bottom: the haematoma after two applications of larval therapy underneath secure dressings. The haematoma has begun to lift and 40% pink tissue is evident

The debridement method should be selected based on the amount and nature of non-viable material to be removed, the anatomical location and size of the wound, the speed with which impediments to healing need to be removed, and what the patient is comfortable with (Vowden and Vowden, 2002).

Deciding on the most appropriate method of debridement may present challenges depending on how quickly debridement is required, especially if the appropriate resources and skills cannot be accessed within a suitable time frame. Practitioners must assess the risks of not debriding the wound immediately if the intention is to refer for sharp or surgical debridement. In such situations, alternative or adjunctive methods of debridement may be appropriate (eg mechanical or larval) (Figure 6), which can facilitate early treatment at home, reduce emergency admissions and pressure on hospitals and reduce the number of dressings prescribed, thus improving the patient experience of care (Fumarola, 2012b) and potentially increasing healing rates.

Every practitioner has a duty of care to provide debridement services in a manner that is timely, safe and appropriate. The debridement method should always be determined by the patient's clinical need and choices, not limited by the skills of the practitioner (Gray et al, 2011).

As nurses and other healthcare practitioners are required to discuss treatment options with their patients, some of whom are anxious, reluctant or ill-informed about procedures, they must be equipped with the knowledge and resources to do so clearly and confidently (NICE, 2012). Practitioners should identify areas of concern to the patient and ensure he or she is involved in the decision-making process, as well as manage his/her expectations (ie make it clear that it will not heal the wound but allow exposure of healthy tissue and progress the wound towards healing).

Figure 7 (below) illustrates how practitioners can accelerate healing using debridement methods. The speed at which debridement needs to be performed may need to be balanced against the competency of the care provider, the environment in which care is being provided, the availability of funding for the

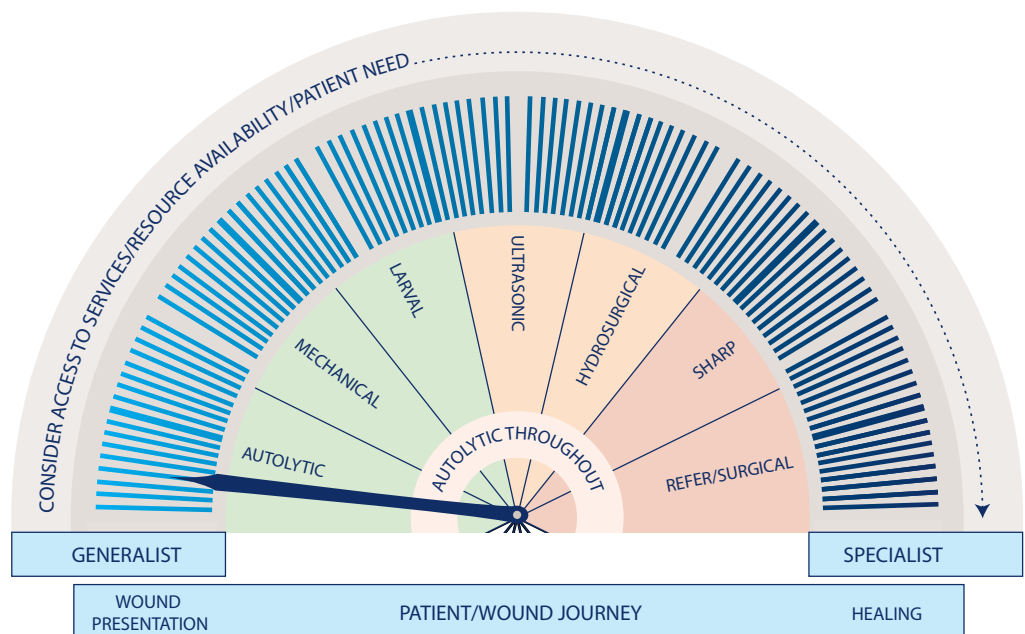


Figure 7: The figure above depicts how the method of debridement chosen must be balanced against patient need when considering access to more specialist methods. Specialist methods offer the potential to shorten the debridement phase but may not always be appropriate for the patient's situation or wound

intervention and the ease of access to specialist services. Most importantly, the choice of debridement method will be determined by the needs of the wound and the patient (Gray et al, 2011).

WHEN TO REFER

Knowing when to refer a patient to the practitioner best qualified to perform the debridement is an important nursing skill at the heart of good basic wound care and a positive intervention in itself. The consensus group expressed concern that referring patients might be considered a failure to act by healthcare professionals. However, in many cases, a referral is necessary to best serve the patient and their wound (Nursing and Midwifery Council, 2008) (Box 9).

Not debriding a wound or not referring a patient to specialist staff for debridement, or choosing the wrong method of debridement, ie incorrectly accelerating or decelerating wound healing, can cause harm to patients, reduce their satisfaction with treatment and have a negative impact on patient wellbeing, as well as increase costs for the NHS.

Referral to a specialist practitioner is often a vital step in accelerating wound healing and should take into account patient choice and preference.

For district nurses seeing patients in the community, who may be less able to access specialist services and advice, it is important to know when to implement simple and effective methods of debridement (eg autolytic, mechanical, larval), as well as how to get the best out of the referral system for the benefit of the patient. In practice this can mean that a district nurse may refer a patient to the podiatry clinic for sharp or larval debridement, but between appointments the community nurse is able to debride the wound using a method that is suited to the patient's environment and situation, eg by using a monofilament pad to debride the wound and prevent a build up of slough and by facilitating autolytic debridement with dressings.

Areas for concern

Debridement of wounds in certain locations carries a greater risk and demands caution and care. Extra caution is needed for:

- High-risk areas: face, hands, feet, genitalia
- Ischaemic limbs
- Wounds associated with congenital malformations or in which malignancy is suspected
- Wounds in proximity to blood vessels, nerves and tendons
- Wounds in patients who cannot give informed consent, or in those on palliative treatment regimens such as the Liverpool Care Pathway
- Any wound that has not been properly assessed by a competent practitioner (origin and diagnosis unknown)
- Wounds in patients with blood clotting disorders
- Wounds in patients with possible implants and/or dialysis fistulas
- Patients with inflammatory conditions, such as Pyoderma gangrenosum.

In the case of ischaemic lower limbs and the neuropathic/ischaemic diabetic foot, regular debridement to remove callus, reduce pressure and allow better inspection of the wound bed is recommended (Leaper, 2002). Clinical risks of conservative sharp debridement of diabetic foot ulcers include damaging viable structures, such as tendons, nerves, and arteries (Haycocks and Chadwick, 2012).

Debridement must be approached cautiously where risks are identified. Practitioners should discuss with the MDT and refer for specialist treatment when appropriate (Figure 5, page 7; Figure 7, page 8).

BOX 9: Acting for the patient

Failing to act in the best interests of the patient is against the Nursing and Midwifery Council's code of conduct, and might fall within clinical negligence (an act or omission [failure to act] which falls below the expected standard of care).

From the Nursing and Midwifery Council's Code (2008):

- You must consult and take advice from colleagues when appropriate.
- You must make a referral to another practitioner when it is in the best interests of someone in your care.
- You must have the knowledge and skills for safe and effective practice when working without direct supervision.
- You must recognise and work within the limits of your competence.
- You must keep your knowledge and skills up to date throughout your working life.
- You must take part in appropriate learning and practice activities that maintain and develop your competence and performance.

Debridement and NHS priorities

BOX 10: Barriers to effective debridement

- Inability to access certain methods of debridement/services within the timeframe necessitated by the wound condition
- Inability to consult with MDT
- Practitioners' lack of debridement knowledge
- Unclear referral pathways
- Funding issues/lack of access to services.

The NHS is driven by quality targets that permeate all specialities and care settings, and by the need for safety, efficiency and patient-centred care (DH, 2011). These priorities impact daily on nurses and the decisions they make (Fumarola, 2012a).

IMPLEMENTING CARE PATHWAYS

For debridement to be carried out in an effective and efficient manner (ie to accelerate wound progression, relieve pressure on wound management services in the NHS and improve the patient experience), certain challenges must be overcome (Box 10). The primary challenges are availability of debridement products and services and the speed with which these can be accessed. Efficient pathways of care can help address these issues.

A debridement care pathway containing referral triggers is vital to ensure timely access to the appropriate specialists is not blocked. Local referral guidelines are a necessary component and all staff looking after patients with a wound must understand service provision in their locality. Referral guidelines can be as simple as a list of people with the appropriate skills (eg vascular liaison nurse, acute care diabetic podiatry clinic, TVN, leg ulcer specialist nurse, etc), with details on where they are based and their contact information. Debridement care pathways will differ depending on the care setting, ie acute or community. For example, a practitioner working in a hospital is likely to have faster access to colleagues with specialist skills. Specialists have a responsibility to ensure all members of the MDT have referral guidelines.

Non-specialists should ensure they have an understanding of the support networks available to them. This may include access to clinical guidelines to assist them in their decision making and an understanding of who their local specialists are and how to refer to them. Specialist practitioners are a good source of additional information, as is networking with colleagues outside of a particular organisation (Box 11).

Each care provider should establish pathways of care that allow patients to receive debridement in a safe, timely and appropriate manner from trained staff, recognising the importance of the MDT in managing more complex wounds. There is increasing evidence of community specialists developing sophisticated referral pathways that result in patients being fast-tracked into hospital services in line with clinical need (Fox et al, 2012).



Figure 8: A deteriorating surgical wound two weeks after amputation, before and after debridement by a specialist with a monofilament pad. The patient had presented at the emergency care centre after being referred by a GP

BOX 11: Removing organisational barriers to debridement

Some services are not available as a result of commissioning decisions or financial concerns. Specialist practitioners can help break down any organisational barriers that might prevent non-specialists from referring patients for debridement. It is worth seeking support from specialist practitioners where funding for treatments is not currently available. When doing so, clearly articulate the patient's risk factors, the dangers of not debriding the wound and what can be gained (including financial benefits for the local health service) from optimising wound healing. This may involve preparing a business case for debridement services and securing the necessary funding, by seeking out experts in the field who will carry out the more specialist forms of debridement and, most importantly, by ensuring clear written guidance is available to all staff in the organisation. In preparing a business case, answers to the following questions on chosen method can be used to remove barriers:

- Is the choice of method based on a course of treatment as opposed to individual unit cost of a product?
- Does it take into account the number of applications (including practitioner time) required to successfully debride a wound?
- Is there a sound rationale for use? For example, the **SIMPLE acronym**, is a concept that can be used to ascertain a treatment's efficacy in individual patients. It involves assessing whether the intervention is safe (**S**), indicated (**I**), can offer a measurable advantage (**M**), give patient benefit (**P**), as well as the treatment's length of time to review (**L**) and the desired treatment endpoint (**E**).

CHANGING PRACTICE

Efficient care and the best possible journey experience and outcome for the patients depend on practitioners accelerating healing where appropriate and moving away from ritualistic care (eg reliance on autolytic debridement) by modifying their practice. Although organisational and administrative tools are necessary, there is a growing literature on the techniques that may be effective for health professionals to achieve changes in practice. Table 2 presents the potential enablers to performing debridement or referring appropriately, and some behavioural actions that are realistic for practitioners to implement.

Importance of education and ongoing training

Where non-specialists would like to improve their knowledge and skills for them to practice safely and effectively, they should approach their managers about further training and should expect to be encouraged (TRIEPodD-UK, 2012). This can be done as part of their personal review/development plan, or outside of it. Lifelong learning and keeping skills up to date is a basic requirement (Nursing and Midwifery Council, 2008; see Box 9) and practitioners must maintain and develop their competence and performance, aside from upgrading their skills.

Key factors	Theory	Actions for change
Beliefs about consequences	Often regarded as core to clinical reasoning, this covers perceived benefits and harms of a clinical action. It can also include consequences for the practitioner such as workload, career progression, or for the hospital or health service	Seek out information and examples about likely benefits and harms
Behavioural regulation	This factor includes the 'how' of changing clinical practice: what are the practical strategies that would facilitate or hinder uptake of a new practice	Keep a diary of wound management practice and review with line manager
Beliefs about capabilities	This concerns how confident individuals are that they can change their practice effectively	Observe another competent nurse or practitioner performing debridement. Practice the technique first on a straightforward case
Emotion	This includes issues such as work stress, patient anxiety and other emotional factors that may help or hinder the uptake of new approaches to care	Clearly explain the procedure to the patient and use relaxation techniques to reduce anxiety
Environmental context/ resources	This domain includes the physical (including financial) issues that may limit change, including staffing levels and time, as well as equipment or space	Design and carry copies of a 'pro-forma' to support wound /patient assessment and use this as evidence to strengthen the case for services
Knowledge	This covers knowledge of the field (ie whether there is adequate evidence) and individuals' knowledge of the evidence or of a guideline	Read the appropriate literature/evidence base/this consensus document and discuss it with colleagues
Memory, attention and decision processes	The level of attention that is needed to perform the key clinical action (ie is forgetting likely to be a problem) and the processes by which clinical decisions are made by individuals and teams	Prepare and use a decision tree document of 'if-then' statements to support appropriate decision making about types of debridement and referral options
Motivation and goals	This concerns the relative priority that is given to one clinical issue, compared with other demands	Set a personal goal such as how many debridements you will perform in the next month
Professional role and identity	This covers the clinical thinking, accepted roles and norms of a particular profession	Discuss with colleagues whether debridement or referral is part of a generalist nurse's routine responsibility
Skills	This covers the possibility that new skills will be required by the staff who are required to implement a new procedure	Undertake training in the procedure if needed. For communication skills, eg explaining the options to the patient, practise the explanation aloud until it feels comfortable and appropriate
Social influences	This domain concerns the influence of other individuals or groups on clinical practice, for example, patients and their families, pressure groups, etc	Use strategies to ensure that patients are comfortable with the reasons for debridement. Ask specialist colleagues to be encouraging when they are asked to discuss uncertainties around type of debridement
Nature of the behaviours	Some new practices are very similar to current practice and so can be easier to implement than new practices that require a dramatic change in ways of working	If performing debridement is very new to you, first choose an easy, non-complex case



Figure 9: A Category 3 pressure ulcer in a 76-year-old referred to a tissue viability nurse by ward staff. Top: devitalised tissue in the ulcer. Below: after sharp debridement

Appropriate education and training in debridement for non-specialist practitioners can often be received from the employing organisation and might be delivered by a tissue viability nurse or podiatrist. Training should cover definitions of non-viable/devitalised tissue, anatomy of the skin and structures encountered during debridement, benefits of debridement, contraindications for debridement, methods of debridement, as well as professional and legal issues including consent. Some organisations facilitate this through a link nurse system. Education and training in particular methods of debridement may also be offered by industry.

Practical debridement skills can be gained by first observing a competent practitioner performing the procedure, and then by performing the techniques under supervision. Assessment of a practitioner's competency may be undertaken by an appropriate assessor after completing multiple successful performances of a technique. For those who wish to gain specialist debridement skills, university courses are available.

To support and empower all healthcare practitioners working in the NHS, it is important that organisations implement the following:

- Develop a competency framework to assess debridement skills with continuing education and training to maintain skills
- Provide education on debridement during nurse training. For example, an online training tool (such as NHS Education for Scotland's LearnPro: <http://nhshelp.learnpro.uk.com>) can be used to explore debridement methods and when each may be indicated. Other online resources can be useful (www.wounds-uk.com), and wound care companies often offer online education and learning zones (such as www.activahealthcare.co.uk/learning)
- Standardise documentation to quantify effectiveness of debridement options and outcomes
- Develop more formal care pathways for debridement.

It is the responsibility of specialists, TVNs, podiatrists etc, to support non-specialist practitioners, championing change and best practice.

DEVELOPING AN IDEAL DEBRIDEMENT SERVICE

To support effective debridement in a changing NHS, the consensus group described the components of an ideal debridement service as follows:

- Integrated services (primary and secondary care) so that patients/practitioners are able to access all methods of debridement where appropriate
- Patient information/leaflets to facilitate patient understanding of debridement and choice of techniques recommended by staff
- Confident practitioners knowledgeable about all debridement methods, decision making and referral pathways
- Clarity of roles to ensure interventions are carried out by the most appropriate practitioner, providing the most efficient care
- Pathways of care with expected time frames for patients to receive treatment
- Clear concise evidence-based clinical guidelines across community and acute services
- Rolling programme of relevant education and training with clear guidelines for non-specialists on how to access education and training
- Audits to measure outcomes
- Access to clinical photography and diagnostic services
- MDT support where required.

Improvement in the skill level of non-specialists in debridement and greater access to appropriate resources will lead to improved patient choice, more responsive care as a result of timely referrals, and safer care and optimal outcomes for patients with wounds.

REFERENCES

- Adderley U (2008) Wound exudate: what is it and how to manage it. *Wounds Essentials* 3: 8-13
- Baranoski S, Ayello AE (2004) Wound debridement. In: Ayello AE, Baranoski S, Kerstein MD, Cuddington I (eds). *Wound Care Essentials: Practice Principles*. Springhouse, Pennsylvania: Lippincott, Williams and Wilkins
- Bahr S, Mustafi N, Hättig P, et al (2010) Clinical efficacy of a new monofilament fibre-containing wound debridement product. *J Wound Care* 20(5): 242-8
- Dowsett C, Ayello E (2004) TIME principles of chronic wound bed preparation and treatment. *Br J Nurs* 13(15): S16-23
- Dowsett C, Newton H (2005) Wound bed preparation: TIME in practice. *Wounds UK* 1(3): 58-70
- Department of Health (2011) *The NHS Outcomes Framework 2012/13*. Available at: www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_131700
- Edmonds M, Foster AVM, Vowden P (2004) Wound bed preparation for diabetic foot ulcers. In: *European Wound Management Association (EWMA) Position Document: Wound bed preparation in practice*. MEP Ltd, London. 6-11
- Edmonds M, Foster A (2005) *Managing the Diabetic Foot* (2nd edn). Blackwell Publishing, Oxford
- European Pressure Ulcer Advisory Panel and National Pressure Ulcer Advisory Panel (2009) *Treatment of Pressure Ulcers: Quick Reference Guide*. Washington DC: National Pressure Ulcer Advisory Panel. Available at: http://www.epuap.org/guidelines/Final_Quick_Treatment.pdf
- European Wound Management Association (2004) *Position Document: Wound Bed Preparation in Practice*. MEP Ltd: London. Available at: <http://www.woundsinternational.com/clinical-guidelines/wound-bed-preparation-in-practice>
- European Wound Management Association (2013) Debridement: An updated overview and clarification of the principal role of debridement. *J Wound Care* 22(1)
- Falanga V (2001) Introducing the concept of wound bed preparation. *Int Forum Wound Care* 16(1): 1-4
- Fox M, Stuart L, Proudman M, et al (2012) A PAD service led by nurses and podiatrists. *Nursing Times* 108(44): 18-20
- Fumarola S (2012a) The effect of a new debridement technique on patient wellbeing. *Wounds UK* 8(4): 84-9
- Fumarola S (2012b) A study to review the practice of wound cleansing, debridement and removal of foreign bodies from acute wounds in an accident and emergency department. Poster at Wounds UK Conference, Harrogate, 2012
- Gray, D, White R, Cooper P, et al (2009) An introduction to Applied Wound Management and its use in the assessment of wounds. In: *Applied Wounds Management: Part 3: Use in practice*. *Wounds UK* (suppl) 5(4): 4-5. Available at: <http://www.wounds-uk.com/applied-wound-management>
- Gray D, Acton C, Chadwick P, et al (2011) Consensus guidance for the use of debridement techniques in the UK. *Wounds UK* 7(1): 77-84
- Haycocks S, Chadwick P (2012) Debridement of diabetic foot wounds. *Nurs Stand* 26(24): 51-6
- Jones V (2004) Wound preparation and its implication for practice: an educationalist's viewpoint. In: *Applied Wound Management Supplement*. *Wounds UK* 1(1): 4-8
- Kubo M, Van der Water L, Plantefaber LC, et al (2001) Fibrinogen and fibrin are anti-adhesive for keratinocytes: a mechanism for fibrin eschar and slough during wound repair. *J Invest Dermatol* 117(6): 1369-81, erratum in 118(5): 910
- Leaper D (2002) Sharp technique for wound debridement. *World Wide Wounds*. Available online at: www.worldwidewounds.com/2002/december/Leaper/Sharp-Debridement.html
- Michie S, Johnson A, Abraham C, et al (2005) Making psychological theory useful for implementing evidence based practice: a consensus approach. *Qual Saf Health Care* 14(1): 26-33
- National Institute of Clinical Excellence (NICE) (2004) *Type 2 Diabetes: Prevention and Management of Foot Problems (CG10)*. Available at: <http://www.nice.org.uk/guidance/cg10>
- National Institute of Clinical Excellence (NICE) (2012) *Patient Experience in Adult NHS Services (CG138)*. London. Available at: <http://www.nice.org.uk/guidance/cg138>
- National Institute of Clinical Excellence (NICE) (2012) *Support for Commissioners and Others Using the NICE Guidance and Quality Standard on Patient Experience in Adult NHS Services (QS15)*. Available at: <http://guidance.nice.org.uk/QS15/CommissionerSupport/pdf/English>
- Nursing and Midwifery Council (2008) *The Code: Standards of Conduct, Performance and Ethics for Nurses and Midwives*. London. Available at: www.nmc-uk.org/Documents/Standards/The-code-A4-20100406.pdf
- O'Brien M (2002) Exploring methods of wound debridement. *Br J Comm Nurs* 10(12): 10-18
- Ousey and Cook (2012) Wound Assessment Made Easy. *Wounds UK* 8(2). Available at: www.wounds-uk.com/made-easy/wound-assessment-made-easy
- Phillips P, Wolcott R, Fletcher J, et al (2010) Biofilms Made Easy. *Wounds International* 1(3). Available from www.woundsinternational.com
- Reid J, Morison M (1994) Towards a consensus: classification of pressure sores. *J Wound Care* 3: 157-60
- Schultz, G, Sibbald RG, Falanga V, et al (2003) Wound bed preparation: a systematic approach to wound management. *Wound Repair Regen* 11: S1-S28
- Steed DL, Donohoe D, Webster MW, et al (1996) Effect of extensive debridement and treatment on the healing of diabetic foot ulcers. Diabetic Ulcer Study Group. *J Am Coll Surg* 183(1): 61-4
- Strohal R, Apelqvist J, Dissemond J, et al (2013) EWMA document: debridement. An updated overview and clarification of the principle role of debridement. *J Wound Care* 22: S1-S52
- TriePodD-UK (2012) *Podiatry Competency Framework for Integrated Diabetic Foot Care - A User's Guide*. Eds: McCardle J, Chadwick P, Leese G et al. SB Communications Group, London. Available at: http://footindabetes.org/system/files/Tripod_compframe_20120525_0.pdf
- Vowden K, Vowden P (2002) Wound bed preparation. *World Wide Wounds*. Accessed at: <http://www.worldwidewounds.com/2002/april/Vowden/Wound-Bed-Preparation.html>
- Vowden P, Vowden K (2011) Debridement Made Easy. *Wounds UK* 7(4). Available from <http://www.woundsuk.co.uk/made-easy/debridement-made-easy>
- Weir D, Scarborough P, Niezgoda JA (2007) Wound debridement. In: Krasner DL (ed). *Chronic Wound Care: A Clinical Source Book for Healthcare Professionals* (4th edn). HMP Communications, Malvern: 35; 343-55
- Wolcott RD, Kennedy JP, Dowd SE (2009) Regular debridement is the main tool for maintaining a healthy wound bed in most chronic wounds. *J Wound Care* 18(2): 54-6
- Young T (2011) Debridement - is it time to revisit clinical practice? *Br J Nursing* (Suppl) 20(11): S24-28

