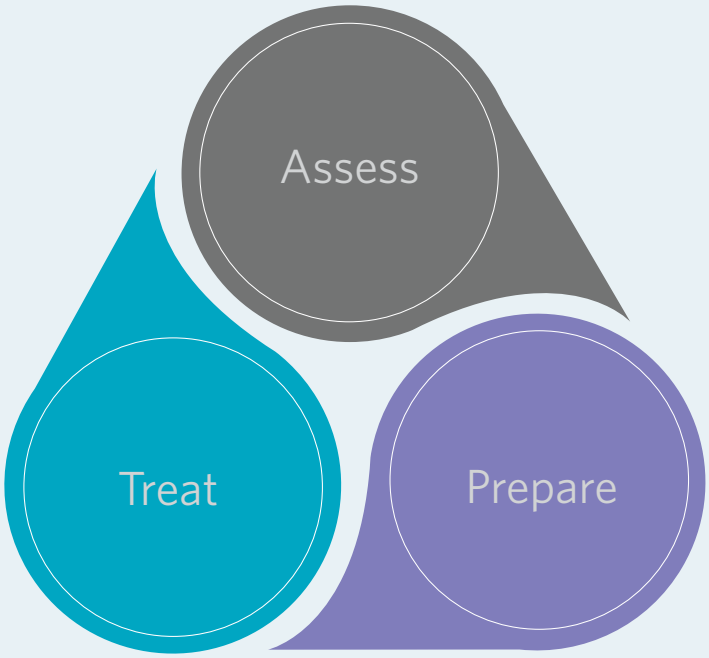
BEST PRACTICE RECOMMENDATIONS

Wound preparation by cleansing and debridement using Alprep® Pad



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FOREWORD

Wound preparation, which encompasses cleansing and debridement, involves preparing the skin and all areas of the wound for healing. Cleansing and debridement are clinically proven to speed up wound healing by removing slough, devitalised tissue and biofilm (Wilcox et al, 2013). Removing the barriers that may delay wound healing is a crucial step in wound care, allowing wound assessment, reducing risk of infection and promoting development of healthy tissue.

Wound care is often seen as a specialist area, which may result in non-specialist nurses and other healthcare workers believing that techniques, such as cleansing and debridement require specialist skills. Generalist healthcare workers remain the primary point of care for most people with wounds — especially community and district nurses. They play an important role in clinical decision making regarding whether cleansing and debridement are necessary, which method(s) to use, and whether to perform debridement themselves or refer.

Although debridement can be an intimidating step in wound care, a capable healthcare worker can perform some level of debridement. As the demography of the wound care workforce grows to include healthcare assistants and support workers, this Best Practice Recommendation aims to support all who are involved in wound care to be confident and capable to know how, when and why to conduct wound preparation.

An Expert Working Group encompassing a diverse range of wound care specialists met online to develop the practical tools required to facilitate optimum wound preparation. Alprep® Pad (Coloplast Limited) offers a solution for all who are involved in wound care to conduct wound preparation with a focus on cleansing and debridement.

WOUND PREPARATION

Wound zones

A wound is a break in the integrity of the skin and can be separated into three main, interconnected, but generally distinct zones that may require different approaches (Dowsett et al, 2015; **Figure 1**):

- **The wound bed:** Look for signs of granulation tissue, while seeking to remove dead or devitalised tissue, manage exudate levels, and reduce potential inflammation. Due to its unpredictability, the wound bed is the most intensely monitored zone.
- **The wound edge:** Lower barriers to wound healing by debriding dried, thickened or keratotic edges or macerated tissue, improving exudate management to minimise risk of maceration.
- **The periwound skin:** The periwound skin is the area surrounding a wound within 4 cm of the wound edge (Ferretti et al, 2003). The aim is to demarcate this area from the wound and reduce the risk of breakdown by protecting the area from exudate and/or moisture.

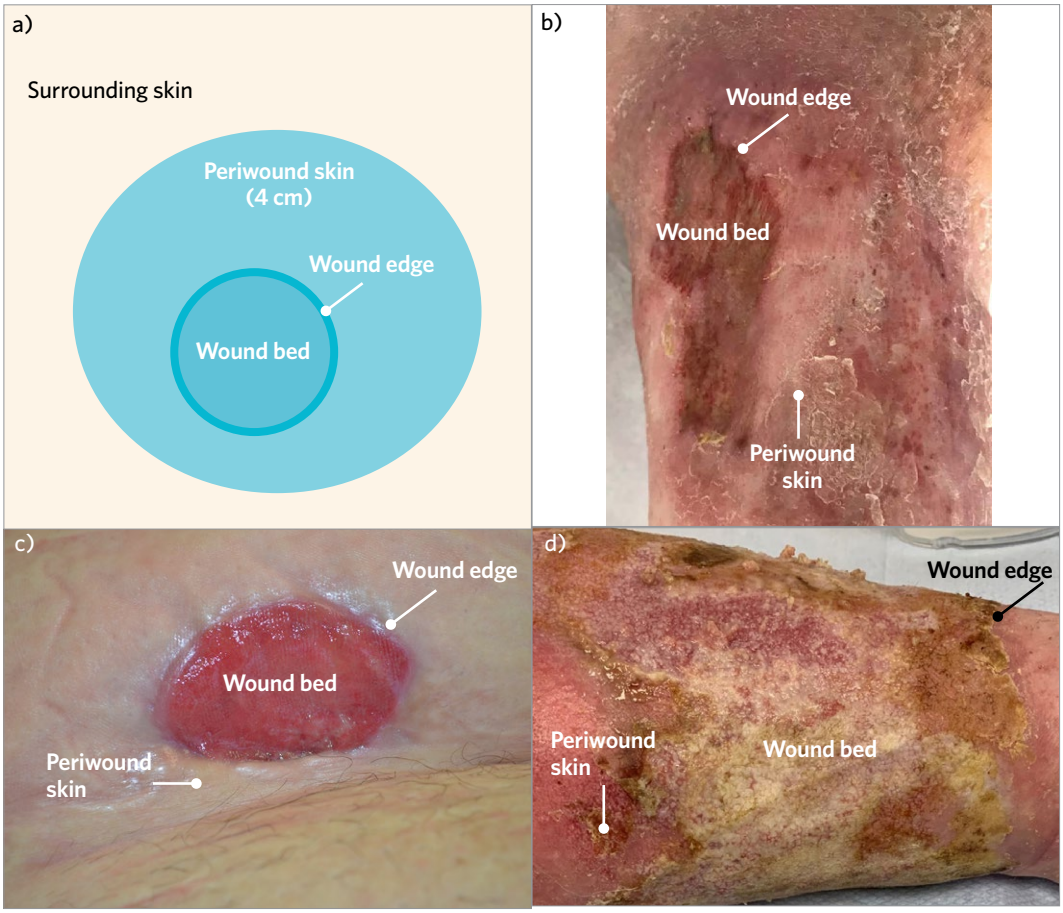


Figure 1. Wound zones a) schematic diagram; b) venous leg ulcer; c) abdominal post-operative wound; d) deteriorated insect bite

Patient and wound preparation guided by a full holistic assessment

A full holistic assessment identifies the patient- and wound-related factors and barriers that impact on wound healing and management, how the patient and wound can be prepared for effective and timely wound healing, or how symptoms can be managed in non-healable wounds. Ongoing re-assessment of the patient and wound will determine if the wound is progressing.

Patient preparation: An holistic assessment will identify how the patient can be supported to encourage optimal wound healing (e.g. addressing and managing underlying comorbidities, previous wound history, hydration and nutritional status, mobility, hygiene and skin care, psychosocial factors, concomitant drugs/ other therapies). An assessment will also consider the patient's environment of care and the ability of the patient and significant others to be involved in care.

Wound preparation: Wound bed preparation is a systematic approach to evaluate and remove wound-related barriers to healing (Falanga, 2001; Schultz et al, 2003). As indicated, a wound is composed of three distinct zones, so it is important to monitor and review all parts of the wound, not just the wound bed. The term 'wound preparation' extends the concept of wound bed preparation and recognises that monitoring the wound edge and periwound skin is necessary for wound progression (Bay et al, 2018; Moore and Baxter, 2021). Wound preparation is a concept that guides a systematic approach to assess, remove and evaluate the barriers to healing that may be present at the wound bed, wound edge and periwound skin. Tools, such as the Triangle of Wound Assessment (**Figure 2**), provide clinicians with an evidence-based framework that includes the minimum data set for wound assessment (Coleman et al, 2017). The Triangle of Wound Assessment incorporates assessment of the patient, their social context and the wound, taking into consideration the wound bed, wound edge and periwound skin (Dowsett et al, 2015; World Union of Wound Healing Societies [WUWHS], 2016).

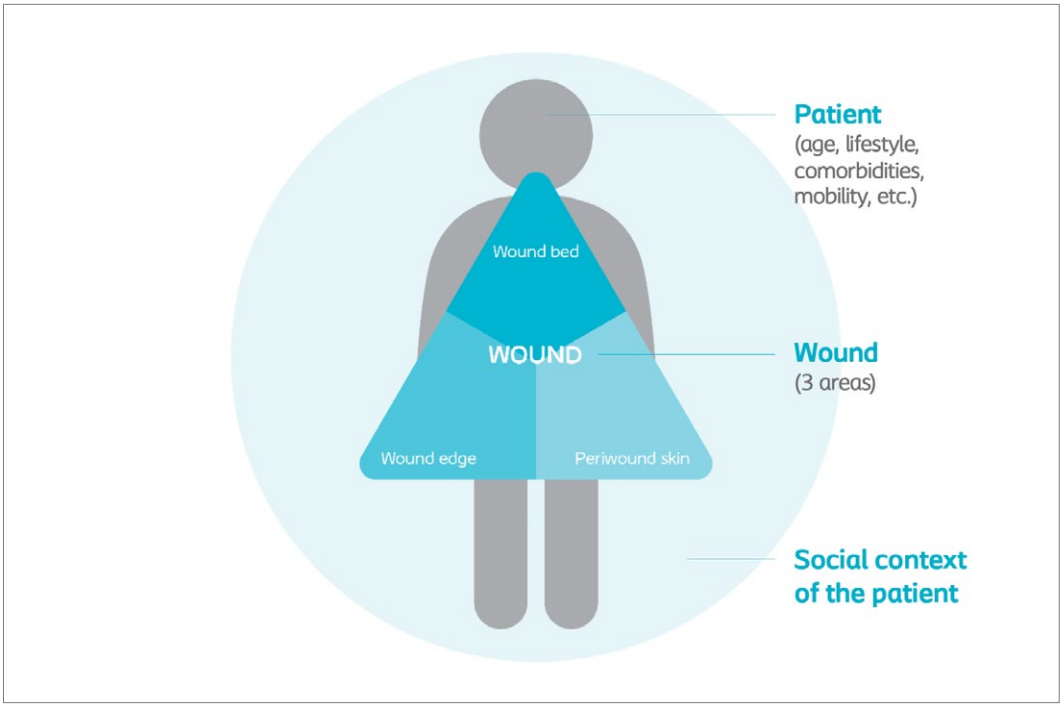


Figure 2. Triangle of Wound Assessment (WUWHS, 2016)

DEMYSTIFYING WOUND CLEANSING AND DEBRIDEMENT

There are two main elements that are involved in wound preparation to maintain a healthy wound bed, wound edge and periwound skin — therapeutic wound cleansing and debridement. By disrupting and preventing the reformation of biofilm, and facilitating the removal of necrotic, non-viable or infected tissue, Wilcox et al (2013) identified that the following can be achieved:

- Assessment of the wound bed, wound edge and periwound skin
- Improved effectiveness of other therapeutic and treatment measures that can be used on the wound bed, wound edge and periwound skin and beyond (such as emollients to the surrounding skin and antimicrobial agents)
- Reduced wound pain associated with maceration and breakdown of devitalised tissue
- Improved quality of life through improved odour management and patient comfort
- Prevention of complications depending on the wound type and aetiology (e.g. wound deterioration, wound re-occurrence, infection)
- Improved healing outcomes.

Box 1. Washing and cleansing – semantics

- Washing of surrounding skin and/or limb (e.g. removal of faeces, sweat using water or soap alternative)
- Cleansing of wound bed, wound edge and periwound skin using water, saline or a wound care cleanser with or without a tool, (e.g. removal of loose surface contaminants, debris, bacteria, excess exudate and wound dressing remnants).

Cleansing

Cleansing is the active removal of loose surface contaminants, debris, excess exudate, bacteria, and remnants of previous dressings from the wound surface and its surrounding skin (Rodeheaver and Ratliff, 2018; Weir and Swanson, 2019). Some experts consider that for wounds to heal in an orderly and timely manner, only minimal, gentle cleansing is required to avoid disrupting granulation tissue and reepithelialisation. Conversely, chronic or hard-to-heal wounds with devitalised tissue or suspected biofilm require vigorous therapeutic cleansing to dislodge loose devitalised tissue, microorganisms or debris from the wound (EPUAP, NPIAP, PPPIA, 2019).

While there is no consensus on the most effective wound cleansing techniques (e.g. passive soaking, swabbing, irrigation or showering/washing [McLain et al, 2021]), washing helps to keep the surrounding skin clean and hydrated, support psychological wellbeing, maintain a healthy environment and to avoid further complications, such as wound infection, skin infections or re-ulceration. For this document, cleansing differs from washing in that cleansing refers to the wound bed, wound edge and periwound skin, whereas washing refers to the surrounding skin and beyond (**Box 1**).

Debridement

Debridement is an essential part of wound care and should not be seen as merely desirable or to be conducted 'if there is time'. Debridement is the removal of adherent non-viable or devitalised tissue, such as slough and necrosis, infected tissue and biofilm, foreign material, haematoma and debris from a wound bed (Wolcott et al, 2009; Wounds UK, 2013).

At a most basic level, autolytic debridement is 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.

The beneficial impact of debridement include to:

- Determine the extent of tissue destruction and aid wound assessment
- Restart the healing process by addressing the 'prolonged or stalled' inflammatory response, reducing excess matrix metalloproteinase production and the likelihood of a septic response
- Remove tissue acting as a physical barrier to healing
- Reduce bioburden, including biofilm, and reduce the risk of infection, as devitalised tissue may serve as a source of nutrients for bacteria
- Remove devitalised tissue that may mask or mimic signs of infection
- Reduce odour
- Reduce excess moisture
- Enable topical agents to be used effectively
- Stimulate wound edges and epithelialisation
- Reduce potential pain associated with devitalised tissue
- Improve patient quality of life.

(Wolcott et al, 2010; Gray et al, 2011; Strohal et al, 2013; Davies et al, 2015; Percival and Suleman, 2015; Anghel et al, 2016)

Types of debridement

It is important to note that there are many types of debridement; the most common being autolytic, mechanical, biological, enzymatic, sharp and surgical, with some requiring healthcare professionals to possess specific skills. Autolytic debridement, which involves using dressings that optimise a moist wound environment, by adding moisture (hydrating wound eschar) or removing moisture (excess exudate), is mostly passive and is often not effective enough to prepare the wound for healing. Other more active forms of debridement — such as biological, mechanical, enzymatic, sharp and surgical — may be needed to accelerate and optimise wound healing.

Debridement may be a one-off procedure or a continuous part of the treatment plan, and it may involve more than one method. Although the optimal frequency of debridement is yet to be established, for people with diabetic foot ulcers, weekly or more frequent debridement sessions have been shown to reduce healing time (Wolcott et al, 2009; Wilcox et al, 2013).

The current clinical evidence does not support any one debridement method as more effective than another (Wormald et al, 2020; Shimada et al, 2021) so the choice of debridement should be tailored to the needs of the patient and their wound. However, the choice is more often led by product availability and cost; perceived capabilities, confidence and skill level of the healthcare worker; and the patient setting. Many practitioners operate within their professional capability range (Gray et al, 2011), which can result in them initially only considering autolytic debridement or not considering debridement at all (Wounds UK, 2013). There are many types of debridement, so it is possible to align an appropriate method with the skill level of all health workers.

Wound preparation continuum

The wound preparation continuum (**Figure 3**) illustrates how the elements of washing, cleansing and debridement work together to prepare the wound for healing. If the appropriate debridement method is chosen, there are relatively few wounds where it is unsafe to debride. However, there are certain patient and wound situations that require caution and may require specialist referral due to a high risk of complications (**Box 2**).

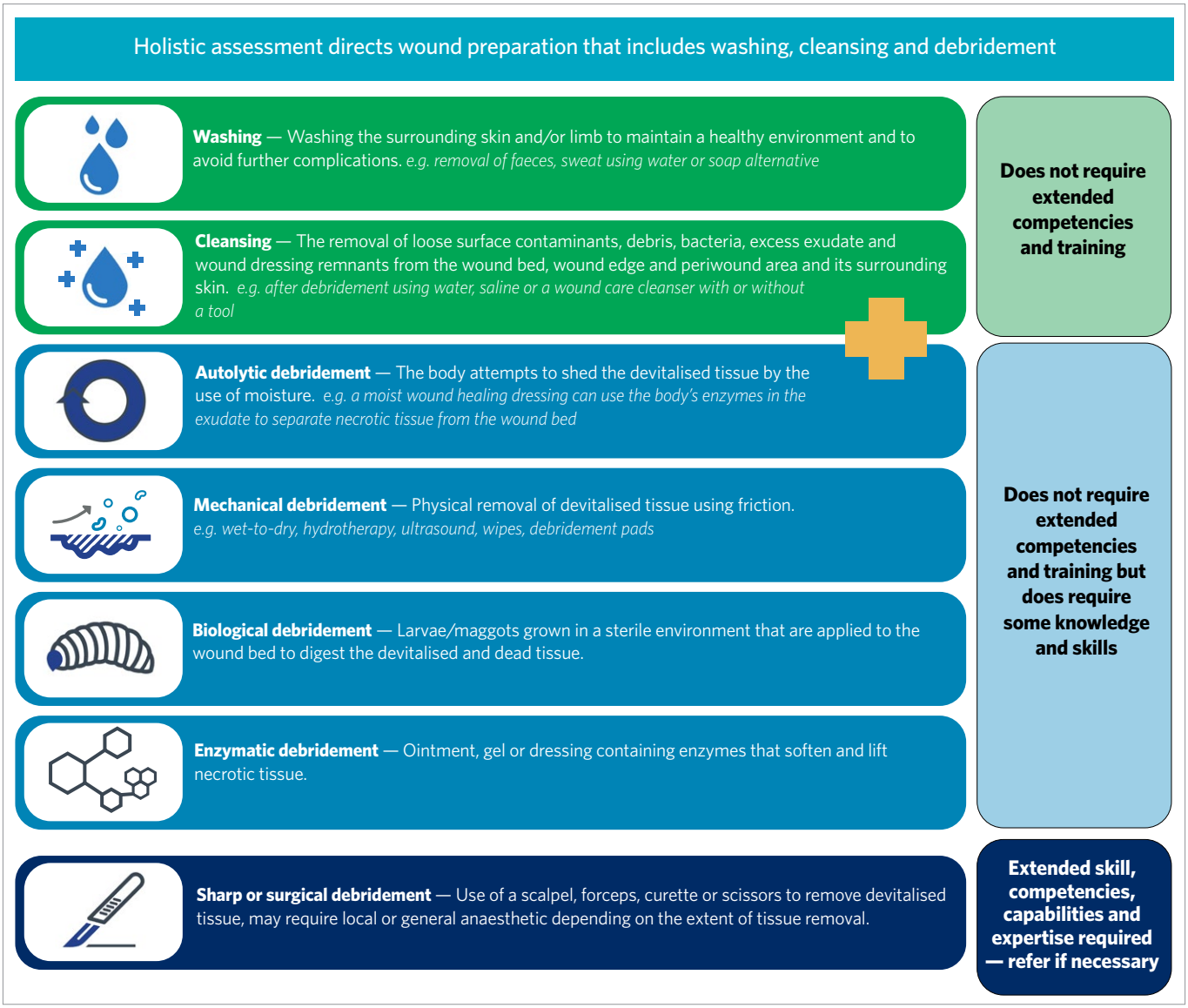


Figure 3. Wound preparation continuum

Box 2. Greater caution is required during debridement of the following situations, and may require specialist referral

- High-risk areas: face, hands, feet, genitalia
- Ischaemic limbs, feet and toes
- Exposed blood vessels, bone or tendon
- Wounds associated with congenital malformations
- Wounds in proximity to blood vessels, nerves and tendons
- Wounds in patients who cannot give informed consent, or in those on palliative treatment regimens
- 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
- Untreated calciphylaxis
- Patients with extreme wound pain.

Immediately escalate if the following are suspected:

- Spreading infection
- Limb-threatening ischaemia
- Red hot swollen leg or foot
- Suspected deep vein thrombosis
- Suspected skin cancer.

MECHANICAL DEBRIDEMENT

MYTH

Wound debridement can only be achieved with a scalpel or curette.

TRUTH

Debridement can be achieved with many methods. Mechanical debridement offers a quick, easy method of debridement that is suitable for healthcare workers and non-healthcare workers to administer in certain situations. As long as there are no signs for immediate referral to a specialist, some form or level of debridement can be achieved.

Mechanical debridement is the most common type of active debridement, and offers an effective method that is readily available, often low cost and can be used by healthcare workers, patients and carers with minimal training compared to sharp or surgical debridement. It can be used on a range of wound types and locations including lower limb wounds, diabetes-related wounds, mixed aetiology ulcers, pressure ulcers, traumatic wounds. The mechanical removal of the barriers to healing in the wound bed, wound edge and periwound skin can be achieved by washing, cleansing and debriding (**Figure 4**).

When to use mechanical debridement

After seeking informed patient consent, the wound can be debrided. Mechanical debridement can be used as part of a regular, routine care plan for faster healing (Wilcox et al, 2013). Mechanical debridement is safe to use on all areas of the body unless there are concerns that require specialist referral within the local pathway (**Box 2**). It is important to remember that mechanical debridement does not replace the need to refer for specialist assessment if there are concerns or the wound is not progressing to healing in a timely manner. A capable healthcare worker can use it for initial management or as part of an ongoing treatment plan. Mechanical debridement can be considered while the patient is waiting for a referral for sharp or surgical debridement if there are no contraindications.

Mechanical debridement may not be suitable for patients who express high levels of wound pain or those with acute wounds, such as burns. A thorough pain assessment (which may identify the need for analgesia before wound treatment), talking to the patient about their concerns and introducing them to the debridement product may help to alleviate some fears and concerns. Sometimes, the patient actively undertaking the debridement themselves can help them manage their pain during the procedure.

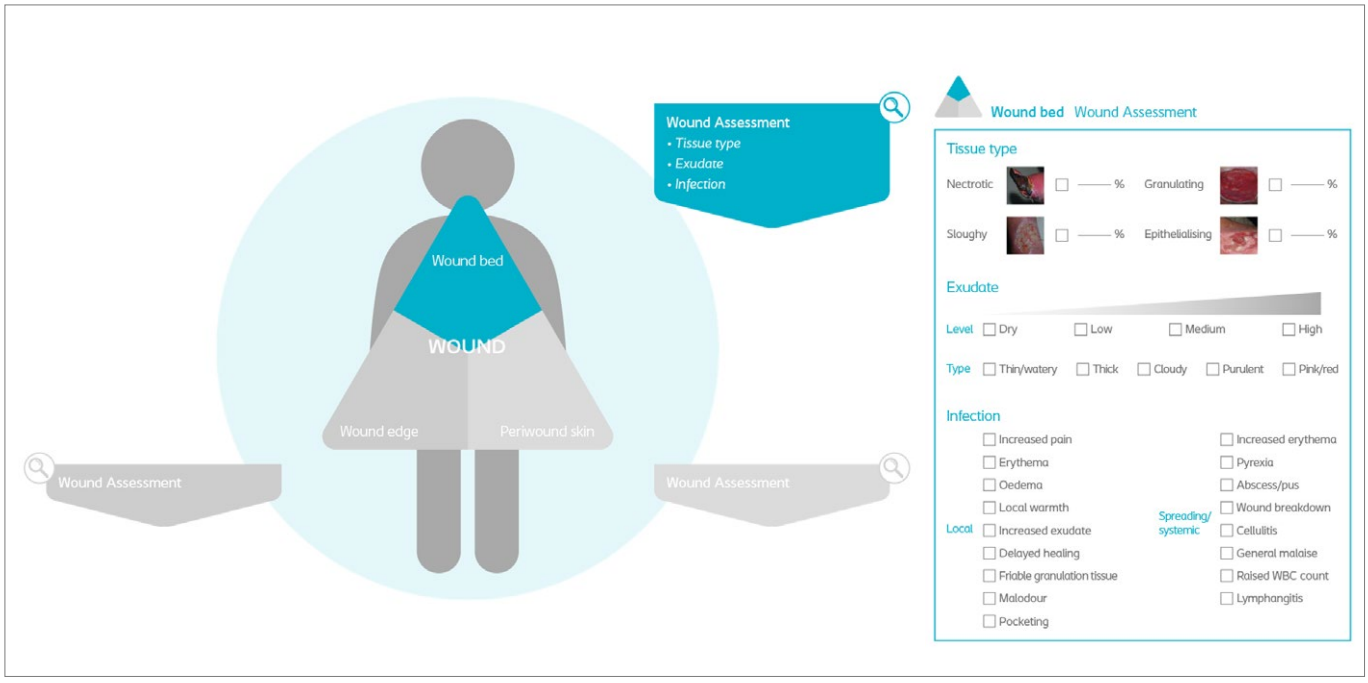


Figure 4. Example of wound bed wound assessment utilising the Triangle of Wound Assessment

When not to use mechanical debridement

While there are no contraindications for mechanical debridement specifically, there are certain situations where mechanical debridement may not be the optimal next step. If in doubt, refer or ask specialist services (**Figure 5**).

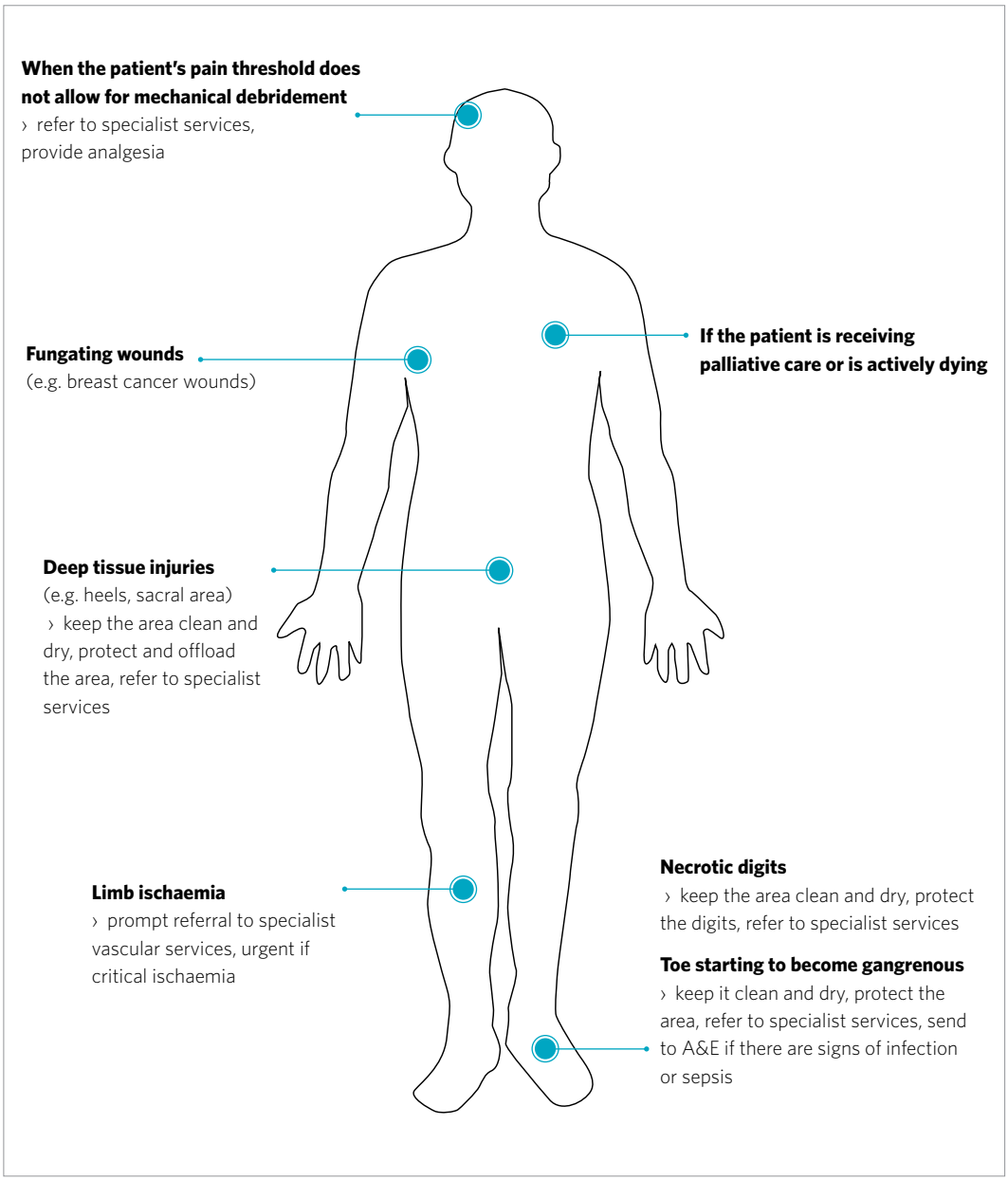


Figure 5. When mechanical debridement may not be the optimal first step

ALPREP® PAD — CLEANSING AND DEBRIDEMENT TOOL

Alprep® Pad (Coloplast Limited) is a 2-in-1 cleansing and debridement tool designed to prepare the wound bed, wound edge and periwound skin to optimise healing. The pad can also be used to cleanse the surrounding skin (**Table 1**).

The tool is designed for improved absorption of devitalised tissue and can help to simplify cleansing and debridement to support optimal wound preparation (**Figure 6**).

Figure 6. Alprep® Pad

Alprep Pad is two tools in one; the dark grey foam is for loosening and the light grey softer foam is for absorbing and capturing debris and devitalised tissue. The pad is designed to be moistened before use and either side of the pad can be used first depending on the wound presentation:

- **Dark grey side:** if the wound has a lot of slough, the dark grey side may be used first to loosen the slough from the wound bed.
- **Light grey side:** if there is a large volume of exudate present, the light grey side may be used first for absorbing and capturing to enable wound assessment. The 'slits' in the light grey foam increase the surface area of the pad for absorption and removal of non-viable tissue from the wound bed, wound edge and periwound skin and hyperkeratotic skin scales. It also removes biofilms and microorganisms from the wound surface as seen in the case study in **Box 4**.

The triangular-shaped pad is ergonomically designed for ease of use and comfortable handling. The packaging can be used as a vessel to wet the pad with an irrigation solution of choice. The product is single use only, and the packaging can be reused to hold the pad for appropriate disposal in accordance with local guidelines. For more information, please refer to the instructions for use packaged with the product (**Box 3**).

Table 1. Potential role of Alprep Pad in supporting wound preparation

Areas	How Alprep Pad may promote optimal healing*
Wound bed	Improves the tissue composition Absorbs exudate Reduces infection risk and bioburden Prepares the wound bed to absorb topical antimicrobial agents
Wound edge	Removes macerated skin Removes dehydrated skin
Periwound skin	Removes macerated skin Removes senescent, dry skin, including eczema Removes hyperkeratosis Prepares the skin to apply topical emollients Prepares the skin to assist the dressing to stay in place
Surrounding skin	Reduces risk of recolonisation and supports good infection prevention from the surrounding skin to wound bed Removes senescent, dry skin and hyperkeratosis Prepares the skin for the application of topical emollients

*Based on case series and satisfaction survey (Moore and Baxter, 2021)

Box 3. Alprep Pad – Instructions For Use

The product is indicated for use in general wound management and is suitable for a wide variety of wounds including non-infected wounds, infected wounds or wounds with suspected biofilm. Alprep Pad can be used by all clinicians treating wounds.

Warnings

Re-use of the single use product is not recommended as cross contamination may occur.

Reprocessing, washing, disinfection and/or (re)sterilisation may compromise product characteristics, causing additional risk of physical harm or infection to the user.

The product must only be used in one wound during one treatment due to the risk of cross-contamination and infection.

Cautions

This product should NOT be left in or on the wound. Leaving this product in the wound may create a potential harm to the patient.

Real-world use of Alprep® Pad

The use of Alprep Pad for the cleansing and debridement of chronic wounds was evaluated in three UK centres to determine its effectiveness and ease of use for healthcare professionals (Moore and Baxter, 2021).

Results of a case series and satisfaction survey (Moore and Baxter, 2021)

Seventeen healthcare professionals participated in the evaluation representing 46 patients.

The Alprep Pad was used weekly for 3 weeks; 41 patients completed three debridement sessions, totalling 153 debridement sessions.

The evaluation showed over the 3-week period:

- Improvements in wound pain during debridement sessions
- Visible effect of cleansing and debridement within 1 minute of the procedure in 89% of cases
- Reduction in devitalised tissue
- 34% reduction of mean wound size from first session (30 cm^2) to last debridement session (19.9 cm^2)
- Improvement in the wound bed composition — the mean proportion of granulating tissue increased 60% from the first to the last visit, and the mean proportion of sloughy tissue decreased 35% from the first to the last visit
- Alprep Pad was perceived to be gentle or very gentle in 65% of the evaluations*
- All the clinicians involved stated that they would use Alprep Pad in the future and recommend it to their peers as a time-effective solution.

Practical considerations for using Alprep Pad

The instructions for use should be followed for any product (**Box 3**). Based on the real-world experience, the panel discussed additional practical considerations when using Alprep Pad.

- The pad is single use only — a new pad should be used for each wound or wounded area. Do not reuse the same pad on other parts of the body
- The pad should be rinsed once it becomes saturated with wound debris. The speed to which Alprep Pad will become saturated will depend on wound aetiology and location, it can then continue to be used in the same area
- Apply light pressure and use circular motion to debride stubborn areas of slough and devitalised tissue
- For infected wounds or wounds with high bioburden, follow the local principles of infection control
- There may be a small amount of superficial bleeding. If excessive bleeding occurs, stop using the pad and apply first aid principles to stem the bleed (i.e. apply pressure to area). Seek immediate medical attention if bleeding is severe (this is a rare risk and is only likely to occur if debridement has occurred on or near an artery, vein, bone or tendon).

*To what extent do you find Alprep Pad a gentle cleansing and debridement pad? Available answers were: Very gentle; Gentle; Somewhat gentle; Not so gentle or Not gentle at all.

USING ALPREP® PAD AS PART OF AN HOLISTIC APPROACH

The Coloplast 3-Step Approach

Alprep Pad is designed to be used as part of an holistic approach to wound care, **Figure 7** illustrates how it fits into the "Assess, Prepare, Treat" paradigm:

- **Step 1: Assess** — Assess the wound and patient to identify the management goals and understand the patient's expectations and concerns
- **Step 2: Prepare** — Prepare the wound for healing using Alprep Pad (or follow local protocol)
- **Step 3: Treat** — Treat the wound in accordance with underlying aetiology and specific wound treatment objectives.

Using the Alprep Pad as part of an holistic approach supports all elements of "Assess, Prepare, Treat" and supports healthcare workers to optimise wound healing in a fast and effective manner (Moore and Baxter, 2021).

ASSESS Complete holistic assessment, including wound assessment

Red flags to be identified as part of assessment process
Refer to appropriate specialist
(e.g. has history of arterial insufficiency)

PREPARE Wound cleansing and debridement to take place using Alprep Pad

1. Preparation with Alprep Pad does not require an extended competency and can be undertaken by any capable person treating wounds.
2. Moisten Alprep Pad with irrigation solution (squeeze excess out), gently wipe the surface working in a circular motion starting at the centre of the wound working outwards to avoid contamination.
3. Alprep Pad should also be used on the wound edge, periwound skin and further surrounding skin if deemed necessary (e.g. hyperkeratotic skin).
4. The dark grey side of Alprep Pad should be used to loosen any devitalised tissue and/or to disrupt suspected biofilm before absorbing with the light grey side.

TREAT wound depending on objectives identified at assessment stage

Reassess

Reassessment is critical as the clinical detail gained from the baseline wound assessment may change, for instance as the tissue types may reduce (e.g. % of slough in the wound bed), the wound will likely appear bigger or change shape once it has been prepared.

As part of reassessment, determine if further second-line debridement or preparation is required (e.g. sharp debridement) and refer on as appropriate.

Figure 7. How Alprep Pad can be part of a wound preparation pathway
N.B. This pathway is designed for guidance only and should not replace clinical judgement. Always refer to local practice and guidelines where they exist.

Ongoing monitoring

It is important to remember to protect granulation tissue as the wound is debrided, and to remember the purpose of debridement and the desired outcomes (e.g. to keep the wound stable or to progress the wound to healing). Ongoing monitoring and reassessment will identify if the wound symptoms have changed.

Real-world experiences

As part of the case evaluations published in Moore and Baxter (2021), **Figure 8** includes images of wounds taken immediately before and after wound preparation with Alprep® Pad.

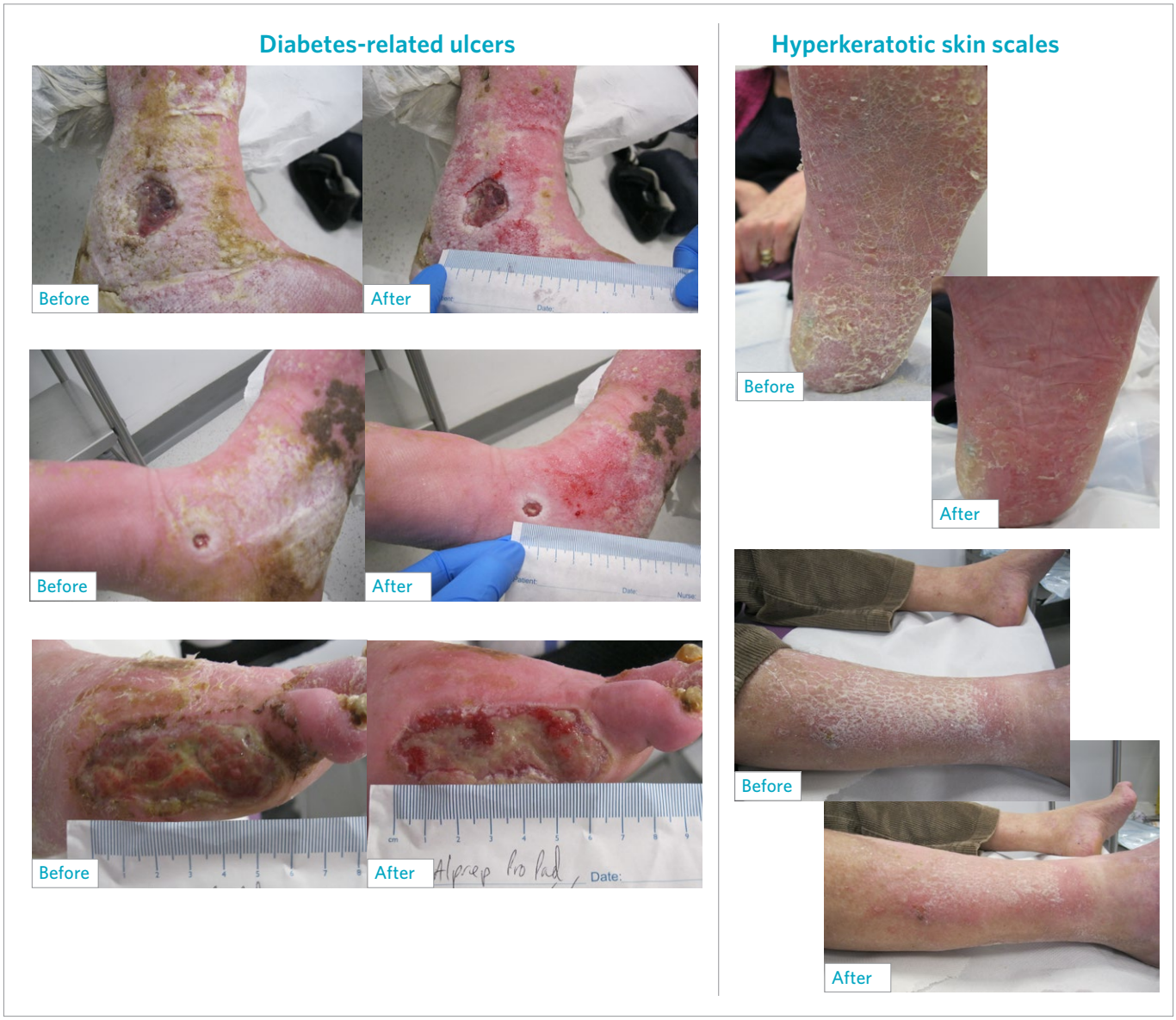


Figure 8. Wounds before and after debridement with Alprep Pad (images courtesy of Andrew Sharpe)

The case study in **Box 4** is taken from an ongoing evaluation of Alprep® Pad as part of a holistic wound care approach. The evaluation recorded the tissue type ratio within the wound bed and used wound and fluorescent imagery before and after wound preparation (MolecuLight *i:X* Wound Imaging Device). The fluorescent images are interpreted and indicative of the following:

- **Pink-red:** associated with the presence of harmful levels of bacteria
- **Maroon-black:** associated with blood, highly vascularised tissues
- **Green:** associated with connective tissue in skin
- **Cyan/glowing white:** associated with the presence of *Pseudomonas aeruginosa.*

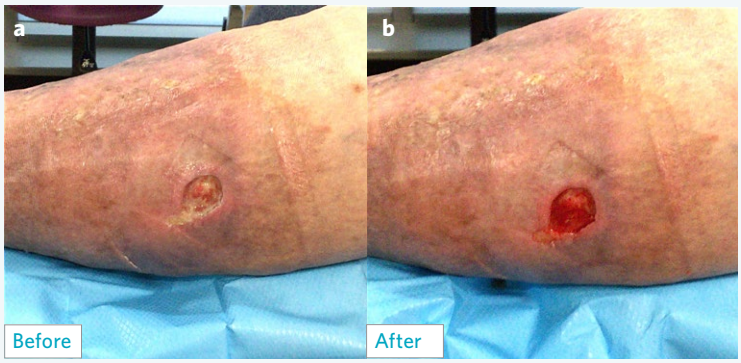
The percentage of non-viable tissue (e.g. debris/necrosis/slough) removed, the number of pads used and the time spent by the clinicians cleansing and debriding the wound were also recorded. The patients' wound pain during debridement was also monitored.

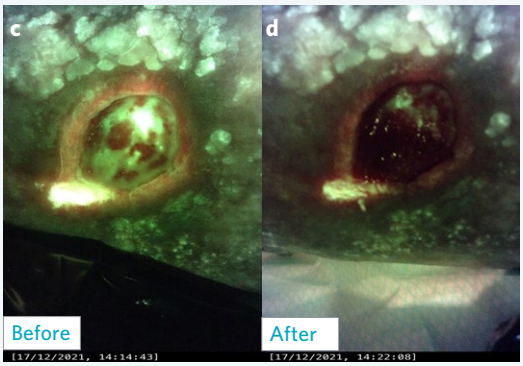
Box 4. Case study (courtesy of Karen Staines)

A 68-year-old man had a venous leg ulcer present for 8 months with delayed healing and suspected biofilm. On initial assessment, wound dimensions, tissue type ratio, infection indicators and fluorescence imagery (MolecuLight *i:X* Wound Imaging Device) were recorded prior to wound preparation with Alprep Pad. The wound was debrided every 3 to 4 days on four occasions.

The fluorescent image before debridement (c) shows a pink/red colour, which indicates the presence of bacteria at the wound surface. The light-pink blush colour around the wound edge indicates a level of sub-surface bacterial fluorescence. The bright white fluorescence at the bottom of the image reflects scar tissue and is not indicative of bacterial contamination, which is also visible on image a.

One Alprep Pad used for 3 minutes reduced debris/necrosis/slough by 50-80% (image b). The patient reported no pain during debridement. After 3 minutes of cleansing and debridement the wound was photographed with the fluorescent imagery device (image d). The maroon-black fluorescence illustrates that wound preparation has been effective, as the maroon-black indicates a well-vascularised wound bed. The volume and density of the light green skin cells on the periwound skin indicates the presence of dried skin cells rather than bacteria.





Wound bed tissue composition

Before: necrotic 0%; granulating 22%; sloughy 78%; epithelialising 0%

After: necrotic 0%; granulating 98%; sloughy 2%; epithelialising 0%

Fluorescent images

Before: pink-red 8%; maroon-black 0%; green 90%; cyan/glowing white 2%

After: pink-red 0%; maroon-black 95%; green 2.5%; cyan/glowing white 2.5%

EMPOWERING ALL TO UNDERTAKE WOUND PREPARATION: EDUCATIONAL STRATEGIES

Capabilities

The National Wound Care Strategy Programme (NWCSP) commissioned the development of a core capabilities framework for health and care staff involved in wound care in England. The framework describes the required skills, knowledge and behaviours to improve wound care in three clinical areas (pressure ulcers, lower limb and surgical wounds).

Capabilities are the attributes (skills, knowledge and behaviours) that individuals bring to the workplace. This includes the ability to be competent and beyond this, to manage change, be flexible, deal with situations that may be unpredictable and continue to improve performance (NWCSP, 2021).

To perform any skill safely, a person must become capable; this is usually achieved through observation of practice, training and education, repetition of the skill, feeling confident completing the skill, and an understanding of the wider context and benefit of said skill for all (**Figure 9**). The sense of satisfaction at being able to intervene and make such a difference is invaluable to practitioner morale and the quality of care they can provide.

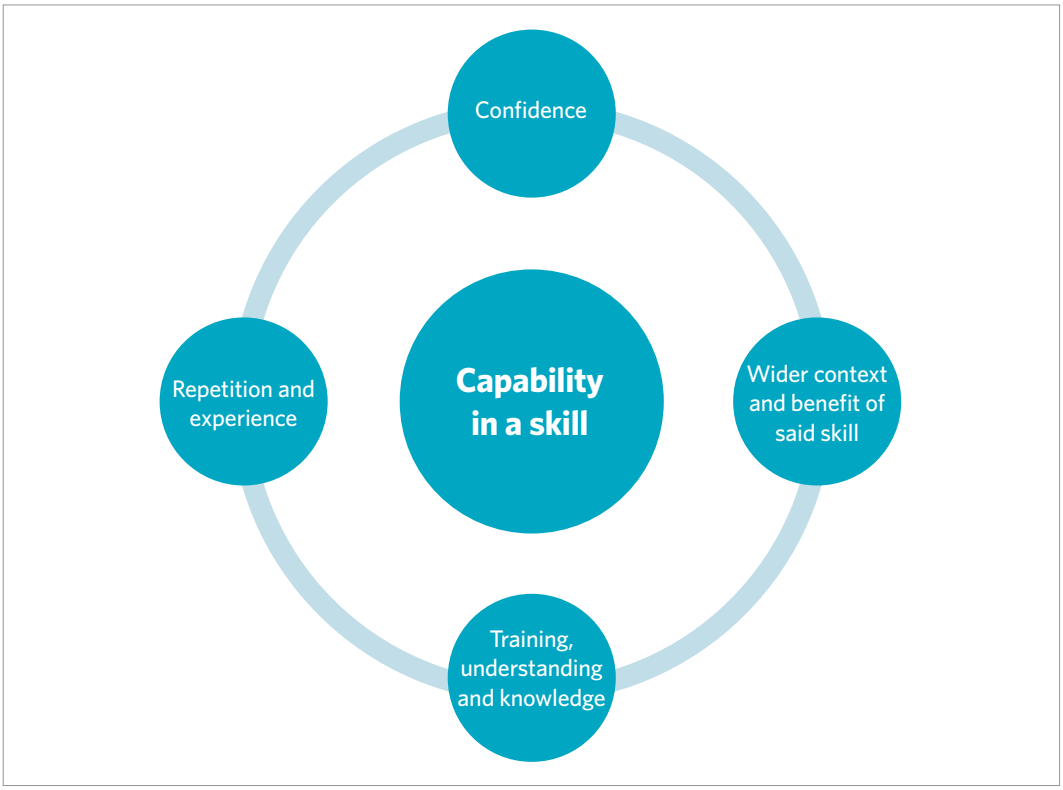


Figure 9. Elements of becoming capable in a skill — relevant for healthcare workers, patients and informal carers

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 (Wounds UK, 2013). Identifying your current level of knowledge and skill against a national framework, such as the National Wound Care: Core Capabilities Framework for England (NWCSP, 2021; **Box 5**), is the first step in knowing what you can do to improve your skill set.

Box 5. National Wound Care: Core Capabilities Framework for England (NWCSP, 2021)

The overall aim of such a framework is to standardise wound care in England by setting out the knowledge and skills needed by all levels of staff to deliver high quality, consistent wound care across all settings, improving healing rates and patient outcomes.

The framework enables commissioners of services to specify minimum standards for employment in health and care settings where wound care is provided; it sets out clear expectations about what staff need to do. The 12 capabilities in the framework are described in three tiers and a practitioner may move between these tiers depending on their role, setting or circumstances. The tiers do not relate to specific roles or pay grades.

Tier 1 capabilities are those that require a general knowledge and understanding of wound care and the skills which support the provision of that care.	Tier 2 capabilities that enable the provision of wound care independently and with a degree of critical analysis.	Tier 3 capabilities are those that require a high degree of autonomy and complex decision making, and an ability to lead wound care practice and innovate. In relation to wound care, there are three tiers of skills.
Capabilities relevant for cleansing and debridement		
Tier 1: Be able to apply and change wound dressings. Be able to contribute to wound therapies as instructed.	**Tier 2 (Tier 1 plus the following):** Be able to recommend and carry out agreed wound management techniques and therapies within the scope of practice.	**Tier 3 (Tier 2 plus the following):** Carry out advanced wound management and techniques and explore the use of potential additional therapies within the scope of practice.

Alprep® Pad can be used by individuals with Tier 1 and Tier 2 capabilities

If it is not possible to debride the wound, then refer to a specialist with Tier 3 capabilities

Mechanical debridement should be considered an integral, essential part of standard wound care and not an "optional extra". There is a misconception that debridement is an advanced skill for wound care specialists, and fear is often a major barrier for non-specialists. In fact, routine mechanical debridement using Alprep Pad can be used by all involved in administering wound care (e.g. non-specialists, the person with the wound and informal carers).

Listening to the patient

As healthcare resources and the workforce changes, there is an ongoing health service commitment to involve patients and the public within the wider context of the development and evaluation of healthcare service delivery and quality improvement. As such, there is increasing international attention regarding the use of patient-reported experiences measures (PREMs) and patient-reported outcome measures (PROMs) that provide a patient-centric view of healthcare and can be used as a quality indicator of patient care and safety (Weldring and Smith, 2013).

SUPPORTED SHARED CARE

Helping patients to share the care of their wounds improves self-confidence and enhances understanding of their condition. It improves quality of life and provides more convenient and consistent care. Engaging in supported shared care can be motivating for the patient and their carers; however, it is important that patients do not feel alone and that they continue to receive support throughout (Moore et al, 2016).

Supported shared care should be a joint decision for all involved. The first step is to determine if the patient is willing and capable of being involved in shared care. The appropriateness of supported shared care needs to be regularly considered and reassessed as circumstances or changes to the wound can change willingness to be involved.

Once the patient and/or carer are identified as willing, the patient and/or carer should be assessed for their wound care capability, hand hygiene, and understanding of wound dressings, the wound itself, signs and symptoms of wound deterioration (i.e. increased pain, size, maceration, heat, swelling, smell, or deterioration of the surrounding skin), and when and where to report problems or if they have concerns. Another important element is to manage the patient and carer's expectations and to ensure that they understand each part of the treatment plan. For example, when using Alprep® Pad:

"Using the Alprep Pad after your dressing has been removed will help to clean your wound. Using the pad will hopefully over time reduce the time it takes your wound to heal. We will need to use a new pad at every dressing change for a few weeks. The wound might look like it has got bigger or might bleed slightly initially."

Tools to support patients and informal carers to take part in supported shared care may include leaflets, videos, patient passports or journals. Safe consensual sending of wound images from the patient and/or carer to the clinician can all be useful.

Frequently asked questions related to Alprep® Pad

Q: What do I do if the wound starts bleeding?
A: A small amount of bleeding during debridement can be a positive sign. If the wound bleeds excessively, stop using the pad, apply some pressure by placing your hand/finger over a sterile dressing or gauze over the area bleeding. Once it stops bleeding, dress the wound as per the treatment plan. If you are unable to stop the bleeding, seek medical advice immediately via A&E, minor injuries or by contacting a health professional.

Q: How do I know when to stop using Alprep Pad?
A: Stop using Alprep Pad if the patient asks for debridement to be stopped or when the goals of the debridement session have been achieved. Preliminary work suggests Alprep Pad should be used for 3-4 minutes (**Box 4**). A new Alprep Pad may be used at each dressing change for a few weeks if the wound requires further cleansing and debridement as part of an ongoing treatment plan.

Q: Is it going to be painful?
A: If the patient is unable to tolerate the pain during cleansing and debridement, stop using the tool. The level of pressure applied to the Alprep Pad can be adapted according to pain levels and to suit patients' tolerance. Some patients may find it soothing with no pain, while others may find it quite sore (e.g. acute wounds such as burns). A pain assessment and analgesia may be beneficial before commencing debridement again.

Q: When do I rinse Alprep® Pad?
A: Alprep Pad is indicated for single-use mechanical debridement for one wound or one wounded area. The wound aetiology and the level of contamination will impact on the frequency of rinsing required.

Q: How do I discard Alprep Pad?
A: The Alprep Pad packaging can be used to dispose of the Alprep Pad as per local protocols.

Q: Where on the body can I use Alprep Pad?
A: Alprep® Pad is predominantly designed to treat the wound bed, wound edge and the periwound skin through cleansing and debridement. A healthcare professional should direct and advise where to focus treatment.

Q: Can Alprep Pad be used in the shower or bath?
A: For active foot wounds, it is often advocated to keep these dry as it may have a negative impact on wound healing. Using Alprep Pad at wound dressing changes should provide appropriate cleansing and debridement of the wound without the need to use it in the shower or bath.

BEST PRACTICE RECOMMENDATIONS

The panel discussed and agreed upon the following key statements, in order to guide best practice and provide optimum wound preparation, specifically for Alprep® Pad.

Statement 1
An individual patient and wound holistic assessment following the components of the generic wound assessment minimum data set (Coleman et al, 2017) should be undertaken using a standardised tool as per local guidance to identify the barriers to healing and the management goals.

Statement 2
An appropriately qualified clinician should develop the wound care plan alongside the patient. Treatment may encompass a multidisciplinary team approach that reflect the patient's healing journey.

Statement 3
Wound preparation is an essential part of wound care and not an occasional, or desirable option. What is removed from the wound is often more important than what is applied to the wound in terms of dressing selection.

Statement 4
Every practitioner has a duty of care to provide wound preparation 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).

Statement 5
Wound preparation should be routine and regular; the more frequent the debridement sessions, the better the healing (Wilcox et al, 2013). Debridement can occur at every dressing change by whoever is conducting wound care (e.g. wound care specialist, non-specialist, healthcare assistant, patient or carer).

Statement 6
If the correct method is chosen, there are relatively few wounds where it is not safe to debride. As a general rule, if the wound is not covered in granulation tissue, debridement can be performed to progress a wound towards healing.

Statement 7
Debridement can reduce the risk of further complications and support wound healing.

Statement 8
Alprep Pad enables wound preparation at each dressing change and can be used by all health and care providers, including the patient and the carer.

Statement 9
Empowering practitioners to perform wound preparation by learning the skills to perform a wide 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.

Statement 10
Outcomes, including patient-reported outcomes and experiences, must be tracked, reported and, where possible, published, to enable a global understanding of the positive impact of wound preparation.

References

Anghel EL, DeFazio MV, Barker JC et al (2016) Current Concepts in Debridement: Science and Strategies. *Plast Reconstr Surg* 138(3 Suppl): 82S-93S

Bay L, Kragh KN, Eickhardt S et al (2018) Bacterial Aggregates Establish at the Edges of Acute Epidermal Wounds. *Adv Wound Care* 7(4): 105-13

Coleman S, Nelson EA, Vowden P et al (2017) Development of a generic wound care assessment minimum data set. *J Tiss Viability* 26(4): 226–40

Davies CE, Woolfrey G, Hogg N et al (2015) Maggots as a wound debridement agent for chronic venous leg ulcers under graduated compression bandages: A randomised controlled trial. *Phlebology* 30(10): 693-9

Dowsett D, Gronemann M, Harding K (2015) Taking wound assessment beyond the edge. *Wounds International* 6(1): 19–23

EPUAP, NPIAP, and PPPIA (2019) *Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline*. 2019 (ed). Haesler E.

Falanga V (2001) Introducing the concept of wound bed preparation. *Int Forum Wound Care* 16(1): 1–4

Ferretti DE, Harkins SM (2003) Assessment of periwound skin. In: Milne CT, Corbett LQ, Dubuc DL (eds). *Wound Ostomy, and Continence Nursing Secrets*. Philadelphia, PA: Hanley & Belfus Inc; 2003: 45–8

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

McLain NE, Moore Z, Afsar P et al (2021) Wound cleansing for treating venous leg ulcers. *Cochrane Database Syst Rev* 3: CD011675

Moore K, Baxter E (2021) 'Wound Preparation' using a 2-in-1 cleansing and debridement tool. *Wounds UK* 17(3): 82–6

Moore Z, Bell T, Carville K et al (2016) *International Best Practice Statement: Optimising patientinvolvement in wound management*. Wounds International, London. Available at: https://www woundsinternational.com/resources/details/international-best practice-statement-optimising-patient-involvement-in-wound management

National Wound Care Strategy Programme (2021) *National Wound Care: Core Capabilities Framework for England*. Available at: https:// skillsforhealth.org.uk/info-hub/national-wound-care-core-capability-framework-for-england/ (accessed 25.01.21)

Percival SL, Suleman L (2015) Slough and biofilm: removal of barriers to wound healing by desloughing. *J Wound Care* 24(11):498, 500-3, 506-10

Rodeheaver GT, Ratliff CR (2018) *Wound cleansing, wound irrigation, wound disinfection*. In: Krasner DL, van Rijswijk L (eds.) Chronic Wound Care: The Essentials e-Book. HMP: Malvern, PA: 47–62

Schultz GS, Sibbald RG, Falanga V et al (2003) Wound bed preparation: a systematic approach to wound management *Wound Repair Regen* 11(Suppl 1): S1-28

Shimada K, Ojima Y, Ida Y et al (2021) Efficacy of Versajet hydrosurgery system in chronic wounds: A systematic review. *Int Wound J* 18(3): 269-78

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

Weir D, Swanson T (2019) Ten top tips: wound cleansing. *Wounds International* 10(4): 8-11

Weldring T, Smith SM (2013) Patient-Reported Outcomes (PROs) and Patient-Reported Outcome Measures (PROMs). *Health Serv Insights* 6: 61-8

Wilcox JR, Carter MJ, Covington S (2013) Frequency of debridements and time to heal: a retrospective cohort study of 312 744 wounds. *JAMA Dermatol* 149(9): 1050-8

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

Wolcott RD, Rumbaugh KP, James G et al (2010) Biofilm maturity studies indicate sharp debridement opens a time-dependent therapeutic window. *J Wound Care* 19(8): 320-8

Wormald JC, Wade RG, Dunne JA et al (2020) Hydrosurgical debridement versus conventional surgical debridement for acute partial-thickness burns. *Cochrane Database Syst Rev* 9: CD012826.

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

World Union of Wound Healing Societies (2016) *Position Document. Advances in wound care: the Triangle of Wound Assessment*. Wounds International, London

Wounds UK