Wounds: an overlooked burden (Part 2) – Wound treatment: a daunting decision

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Various types of wounds are encountered daily in medical practice, and due to the numerous treatment options available on the market, making the most appropriate choice of treatment may be a rather daunting decision. The wound treatment should not inconvenience the patient to the point that the wound care becomes compromised. It is for this reason that a proper assessment of the wound status be conducted in order to select an appropriate treatment intervention or dressing type, as this will directly impact the way in which the wound heals. This article is based on the expertise of three active wound care practitioners and aims to provide guidance to clinicians when providing primary wound care. The downloadable tables can be printed and used as reference materials in daily practice.

Keywords: wound treatment options, treatment guidelines, speciality wound dressings, surgical wounds, trauma wounds, secondary intention wounds

Introduction

The initial treatment of many different wounds often falls to primary healthcare clinicians. The choice of products/agents to treat a wound can be a rather daunting decision, due to the vast number of products available on the market for the treatment of various wound types. Technological innovations and the development of a wide range of specific treatments for different wounds are a great advancement in wound management, but the success of these is highly dependent on the approach taken by the clinician to treat individual wounds. The initial assessment of the wound and choice of intervention will have a direct impact on the healing of the wound.1 This article aims to provide a summary of treatment options arranged according to wound classification.

Assessment

As detailed in part one of this series, it is essential that wounds are critically assessed prior to initiating any treatment approaches. The initial assessment and classification of the wound will influence the choice of procedures, agents, and dressings to use. These aspects have a direct impact on the healing time of the wound. In many instances, if the products used do not suit the wound type, the healing process is hindered and the wound can progress to a more critical clinical status.2

Various diagnostic guidelines and tools are available to assist clinicians in streamlining their product choices based on the appearance and characteristics of the wound. These include but are not limited to, The Wound Bed Preparation Guideline3 (endorsed by WHASA), the Triangle of Wound Assessment (Developed by Coloplast)4 and the T.I.M.E Clinical Decision Support Tool (Developed by Smith & Nephew).5

Although these guidelines provide a clinical framework, it is important to remember that wound healing is a holistic practice. Therefore, factors such as the patient's history/profile, socioeconomic status and psychological state should be considered during assessment and treatment of the wound. For example, when a secondary dressing is required to secure a primary dressing, this adds to the cost, which may not be affordable for the patient. Another factor to consider during an assessment is pain, as it provides vital information for wound bed preparation, dressing selection and further wound management.1,6,7

Wound bed preparation

Wound bed preparation is an important step prior to initiating treatment, and the approaches taken are dependent on the condition of the wound as determined during assessment/monitoring. These approaches include tissue management, infection/inflammation control, moisture balance as well as advancement of the wound edge. The goal of preparation is to optimise the wound environment for the therapeutic agents to accelerate endogenous healing or increase efficacy of advanced therapies.6-10 To achieve this, visible dirt and debris, devitalised tissue, dressing residue and excessive/dry crusting exudate should be removed, and the wound cleaned through irrigation with cleansing solution. These solutions provide a moist environment and promote granulation tissue formation, but where there is potential for the cleansing solution to collect or be trapped in dead spaces, wound irrigation should be avoided.3,11
In instances where there is bleeding and swelling of the wound, direct pressure and elevation can be used. In addition to this, the wound should be washed, disinfected, and treated with the appropriate antibiotic, if necessary. Wound debridement should be performed on wounds where infection is visible and those previously covered with a dressing. It is important for the clinician to ascertain if increases in pain, heat, oedema, and skin redness are related to inflammation, cellulitis or due to bacterial infection. This is necessary to avoid a misdiagnosis that may lead to inappropriate prescription of antibiotics. Procedures during wound preparation for treatment should minimise further trauma as far as possible while ensuring the best initiation of the healing process.10,12-14

**Treating wounds**

**Surgical wounds**

A surgical wound will usually heal by primary intention, where the edges of the wound are brought together and held in place with a suitable intervention such as sutures, staples or adhesives.15-17 The standard of care for primary wound closure is sutures, but in cases where there is brisk bleeding and the wound needs to be closed quickly, staples are an effective alternative. Another option is the use of adhesives, such as skin glue or tape. These interventions have been found to be less painful, making them preferable in children. The advantages and disadvantages of these interventions are summarised in Table I.

The type of intervention used is dependent on wound factors including, the anatomical position, type, depth, desired cosmetic result and the degree of tension.15 If the tension is too low, the wound edges will not be properly opposed, limiting the primary intention healing, and reducing wound strength, whereas if the tension is too high, the blood supply to the region may become compromised and lead to tissue necrosis and wound breakdown. These factors will also determine whether the wound should be left open or covered with a dressing.

Dressing selection and protocol plays a key role in post-surgical wound care. It is centred around the concept of undisturbed wound healing, which involves keeping the dressing in situ for an extended period of time postoperatively (minimum 48 h up to seven days), without unnecessary “ritualistic” dressing changes. This allows the wound to heal with minimal disruptions while limiting exposure to infectious pathogens. The ideal dressing in this instance should meet the following requirements: conformable, well fixed, absorbent, protective, waterproof and eliminate dead space. Proper dressing protocol and selection helps to prevent the failure of wound healing.18-20

**Non-surgical wounds**

These are wounds resulting from trauma and include lacerations, sharp object penetration and skin tearing. In contrast to “clean” surgical wounds, they are considered to be “dirty” due to possible contamination. The treatment of these wounds (discussed in Table I) is similar to that of surgical wounds except that they must be considered non-sterile. The wound should be cleaned with a mild antiseptic, and if the time lapse since wounding is longer than six hours, it should be left open for at least 48 hours and then closed with a dressing if there are no signs of infection. If there are signs of infection, antimicrobial therapy should be considered. This is known as delayed primary closure or healing by secondary intention and is a practice commonly associated with treatment of trauma wounds.15,21

**Trauma wounds**

Trauma wounds range in complexity from simple (e.g. abrasions) to serious wounds that may be associated with major underlying injuries or significant tissue loss (e.g. gunshot wounds). When dealing with any traumatic injuries, first aid always needs to take priority, and in the case of severed blood vessels, haemorrhaging should be stopped and the patient stabilised.15 Following this, thorough cleansing and debridement of trauma wounds should be carried out to reduce possible contamination. Where devitalised tissue is present and sharp debridement of the wound is inappropriate, topical dressings can be used e.g. hydrogels, alginates and hydrocolloids. If the wound cannot be primarily sutured in the case of extensive tissue loss, delayed primary closure15 or advanced wound dressings must be considered. Table II summarises a variety of treatment options available.

**Secondary intention wounds**

Wounds displaying distinct areas of tissue loss, that cannot be closed by simple approximation of the wound edges, will heal by secondary intention.27,28 This means that the wound area must heal through replacement of the lost tissue, typically from the wound bed.29 This can take up to six weeks for complete healing but depends on wound characteristics, anatomical site, clinical complications and patient compliance with treatment procedures.30 The greatest risks for these wounds are infection, drying out, maceration due to copious exudate formation especially in the first few days, lifting or removal of the newly forming granulation tissue and compromised blood flow to the wound bed.

Treatment options will depend on the size and depth of the wound, presence of any infection, the amount of exudate, the required dressing conformability and change frequency, requirement of debridement of compromised tissue or eschar.31,32 Some dressings can perform almost painless enzymatic debridement to replace the surgical debridement during wound preparation,33 while dressings aimed at reducing inflammation can promote healing and avoid degrading to chronic wounds.34

Wound management in these wounds is directed at maintaining a clean granulating base, while avoiding desiccation and crust formation.30 The primary dressing should be non-adherent and absorptive, replaced in time with less absorbent dressings as the exudate decreases. Hydro-conductive dressings and alginates are suitable for wounds with excessive exudate and can be left for several days before changing, while film dressings are not suitable for exuding wounds as they would promote wound maceration.33 Silver impregnated or iodine-containing dressings are recommended for infected wounds but both of these can slow the healing process and should be discontinued once the
### Table I: Treatment options for surgical and non-sterile primary intent wounds

| Product classification | Benefits                                                                 | Drawbacks                                                                 | Considerations                                                                                                           |
|------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Clean surgical wounds  |                                                                         |                                                                           |                                                                                                                       |
| A. Sutures or stitches | Reduces the infection rate                                                | Painful                                                                   | Type of suture material used:                                                                                         |
|                        | Stops bleeding                                                           | Anaesthetic required                                                      | Natural: higher inflammatory reaction in tissues                                                               |
|                        | Accelerates wound healing                                                | Possible rejection from body                                              | Synthetic: low inflammatory reaction                                                                             |
|                        | Ensures a better cosmetic result                                          | Discomfort when stitches must be removed                                 | Absorbable or non-absorbable                                                                                         |
|                        |                                                                           | Tension of stitch may tear tissue                                        | Which suture technique to use – single or double mattress/continuous                                           |
|                        |                                                                           | Dehiscence                                                               | Tension or retention used in obese patients                                                                 |
|                        |                                                                           |                                                                            | Location of the wound                                                                                               |
|                        |                                                                           |                                                                            | Sutures left too long promote formation of scar tissue resulting in epithelialisation of suture sinuses which may     |
|                        |                                                                           |                                                                            | lead to the formation of small abscesses and the “rail track appearance”                                         |
| B. Staples             | Reduces wound closure/operation time                                       | Infection more likely                                                    | Location of the wound: e.g. linear lacerations on scalp or extremities                                            |
|                        | Can be placed quickly                                                    | Painful when removing                                                     | Communication to patients on when the staples should be removed                                                   |
| C. Glue                | Rapid wound closure                                                       | More prominent scarring                                                  |                                                                                                                       |
|                        | Painless                                                                 |                                                                            |                                                                                                                       |
|                        | Quick bonding                                                            |                                                                            |                                                                                                                       |
|                        | No needles or staples required                                            |                                                                            |                                                                                                                       |
|                        | Waterproof                                                               |                                                                            |                                                                                                                       |
|                        | Easy for patients                                                        |                                                                            |                                                                                                                       |
|                        |                                                                           | Cannot be used on wounds with:                                           | Wound should be in a horizontal plane to prevent run off                                                          |
|                        |                                                                           | Jagged edges                                                             | Good preparation of wound bed: wound must be clean and dry                                                        |
|                        |                                                                           | High moisture areas                                                      |                                                                                                                       |
|                        |                                                                           | Contaminated wounds                                                      |                                                                                                                       |
|                        |                                                                           | Mucosal surfaces                                                          |                                                                                                                       |
|                        |                                                                           | Bite wounds                                                              |                                                                                                                       |
|                        |                                                                           | Puncture wounds                                                          |                                                                                                                       |
|                        |                                                                           | Dehiscence                                                               |                                                                                                                       |
| Non-sterile primary intent wounds |                                                                         |                                                                            |                                                                                                                       |
| Same options as above but consider cleaning and local antibacterial therapy | Infection                                                               | Do not close contaminated and infected wounds, but leave them open to heal by secondary intention²¹            |
|                        | Pain                                                                     | In treating contaminated wounds and clean wounds that are more than six hours old, manage with surgical toilet, leave open and then close 48 hours later²¹ |
|                        | Delayed healing                                                          | Wounds should be in a horizontal plane to prevent run off                |                                                                                                                       |

### Table II: Treatment options for wounds arising from trauma

| Type of wound | Characteristics | Potential problems | Goals | Dressing |
|---------------|-----------------|--------------------|-------|----------|
| 1. Deep, moist wound | Deep cavity with copious exudate and maceration of surrounding skin | Maceration | Absorb drainage and fill dead space | Primary: Hydrofibre, alginate or foam cavity filler |
|               | Example degloving injury | Lack of healing | | Secondary: Foam, composite or superabsorber |
|               |                                                                            | Bleeding | | |
| 2. Shallow, moist wound | Superficial | Maceration | Moist wound healing | Primary: Hydrogel, hydrogel sheet, impregnated tulle, hydrocolloid, silicone foam dressing |
|               | Signs of inflammation | Infection | Pain relief | Secondary: Transparent film with hydrogel or impregnated tulle |
|               | Painful | | Prevent infection | |
| 3. Deep infected wound | Increased exudate | Spread of infection | Remove necrotic tissue | Sharp debridement |
|               | Odour | Lack of healing | Fill dead space | | |
|               | Necrotic tissue | Pain | Treat infection | | |
| 4. Shallow infected wound | Clinical signs of infection | Spread of infection | Treat infection | Antimicrobial dressings: Cadexomer iodine, honey, silver, PHMB, hydrophobic dressings |
|               | Increased pain | Lack of healing | Promote moist wound healing | | |
| 5. Laceration | Wound not sutured but skin aligned | Wound dehiscence | Wound closure | Steristrips |
|               | | | Prevent dehiscence | Hydrocolloid |
|               | | | Prevent infection | Hydrogel sheet |
## Table III: Treatment options for secondary intent wounds

| Product classification | Benefits                                                                 | Drawbacks                                                                 | Considerations and indications                                                                 |
|------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 1. Hydrocolloids 36-38 | - Produce an odour and leave a residue in the wound bed which may be mistaken for infection  
- May rove over certain body areas that are prone to friction  
- May adhere to the wound bed and can be difficult to remove  
- Can cause hypergranulation  
- Can cause skin stripping in fragile and compromised skin | - May cause desiccation of the wound bed, as well as drying exposed tendon, capsule, or bone  
- Distinctive odour noticeable during dressing changes | - Use on clean wounds, burns, pressure ulcers, venous ulcers  
- De-slough necrotic wounds  
- Not recommended for heavily draining wounds, sinus tracts or fragile skin  
- Not recommended on clinically infected and full-thickness wounds due to the semi-collusive nature of the dressing |
| 2. Alginates 6,26,39    | - Requires secondary dressing to secure  
- Requires secondary dressing | - Requires frequent changes – dried out gauze may stick to the wound bed and disrupt wound healing | - Use on sinusus, heavily exuding bleeding, and flat cavity wounds  
- Should be changed daily when initiating treatment, and thereafter, every other day or when saturated  
- Contraindicated for dry eschar, third-degree burns, surgical implantation and heavily bleeding wounds  
- Should not be packed tightly in cavities as the dressing can expand  
- Capable of absorbing up to 20 times their weight in fluid  
- Use antimicrobial alginate in infected wounds |
| 3. Hydro-conductive wound dressing 40,41 | - Draws exudate away from the wound surface  
- Removes toxic components such as slough, wound debris and bacteria that compromise wound healing  
- Exerts strong vertical and horizontal exudate dispersion and retains wound fluid  
- Requires secondary dressing | - Secondary dressing not required  
- Use antimicrobial dressings  
- Can be used in high exude wound, chronic wounds or acute wounds  
- Can be combined with other topical products | - Not recommended for non-draining wounds or dry eschar  
- Some foams cannot be used on wounds with tunnelling or tracts  
- Can be used under compression  
- Can be used in infected wounds if combined with antimicrobial  
- Silicone border foams have better conformability  
- Silicone foam dressings work well with burn wounds and compromised skin |
| 4. Gauze 42            | - Absorbent capacity, preventing wound edge maceration  
- May be used on clinically infected wounds  
- Non-adherent, trauma free removal  
- Autolytic debridement  
- Non-occclusive and has haemostatic properties for minor bleeding  
- Frequency of dressing changes is reduced  
- Drawn out gauze may stick to the wound bed and disrupt wound healing | - Requires secondary dressing | - Used on draining, necrotic, and infected wounds, those requiring debridement or packing, wounds with tunnels, tracts, or dead space, surgical incisions, burns, ulcers, and pressure ulcers  
- Can be combined with other topical products |
| 5. Foam 42-46          | - Absorbent, waterproof, non-adherent and non-occlusive  
- Moist wound interface  
- Reduce the risk of maceration  
- Conformable and easy to apply  | - May need to be secured by a secondary dressing  
- Absorptive properties may result in maceration of peri-wound skin | - Gel formulation used on dry low exuding wounds  
- Sheet formulation used on low to moderate exuding wounds such as excreted skin and small burns  
- Can be used with topical medications on infected wounds  
- Can not be used in combination with hydrofibre, alginates and/or polyurethane foam dressing |
| 6. Hydrogel 26,36       | - Highly absorptive, non-adherent gel  
- Moist wound interface  
- Promote autolytic debridement  
- Conformable and flexible  
- Secondary dressing required to secure it | - May cause desiccation of the wound bed, as well as drying exposed tendon, capsule, or bone  
- Distinctive odour noticeable during dressing changes | - Use on clean wounds, burns, pressure ulcers, venous ulcers  
- De-slough necrotic wounds  
- Not recommended for heavily draining wounds, sinus tracts or fragile skin  
- Not recommended on clinically infected and full-thickness wounds due to the semi-collusive nature of the dressing |
| 7. Hydrofibre 26,45     | - Highly absorptive, non-adherent gel  
- Moist wound interface  
- Promote autolytic debridement  
- Conformable and flexible  
- Secondary dressing required to secure it  | - May cause desiccation of the wound bed, as well as drying exposed tendon, capsule, or bone  
- Distinctive odour noticeable during dressing changes | - Use on clean wounds, burns, pressure ulcers, venous ulcers  
- De-slough necrotic wounds  
- Not recommended for heavily draining wounds, sinus tracts or fragile skin  
- Not recommended on clinically infected and full-thickness wounds due to the semi-collusive nature of the dressing |
| 8. Transparent film dressing 42,46 | - Primary dressing required to secure it  
- Protects the wound surface and provides a moist wound environment  
- Available in a wide variety of sizes, both sterile and in bulk  
- Wound can be examined through dressing  | - May need to be secured by a secondary dressing  
- Absorptive properties may result in maceration of peri-wound skin | - Use on clean wounds, burns, pressure ulcers, venous ulcers  
- De-slough necrotic wounds  
- Not recommended for heavily draining wounds, sinus tracts or fragile skin  
- Not recommended on clinically infected and full-thickness wounds due to the semi-collusive nature of the dressing |
### Treatment options for secondary intent wounds

| Product classification | Benefits | Drawbacks | Considerations and indications |
|------------------------|----------|-----------|-------------------------------|
| 9. Protease modulating matrix | Removes proteases from the wound fluid | Not to be used in infected wounds (if infected use 1% silver) | Before treatment, dry necrotic tissue must undergo surgical, enzymatic, or autolytic debridement |
| | Maintains an optimal wound healing environment, and is conducive to granulation tissue formation, epithelisation, and rapid wound healing | | Wounds with low or no exudate, apply matrix and hydrate with saline solution |
| | Comprised of a sterile, freeze dried composite of 45% oxidised regenerated cellulose (ORC) and 55% collagen | | Can be used on venous leg ulcers, diabetic foot ulcers and pressure ulcers |
| 10. Enzymatic dressings | Selective removal of dead tissue by enzymatic action | Expensive | Use on sloughy wounds |
| Collagenase and papain-urea enzymatic debridement | Fast-acting and painless | Need to be used frequently depending on exudate | Use on wounds with minimal to moderate exudate |
| | | Can cause maceration | Not to be used on infected wounds |

### Treatment options for infected secondary intent wounds

| Product classification | Benefits | Drawbacks | Considerations and indications |
|------------------------|----------|-----------|-------------------------------|
| 1. Iodine | Highly effective against bacterial, protozoal and fungal infections | Iodine allergy | Critically colonised wounds |
| Available as a povidone iodine ointment/impregnated sheet or as a cadexomer iodine paste/flat sheet | Removes biofilm | Can cause microbial resistance if used over a long period of time | Moderate to highly exuding wounds |
| | Promotes autolytic debridement | | Cavities and flat surface wounds |
| | Cost-effective | | Reassess the wound after 14–21 days and evaluate need for continuation |
| | Moist wound dressing interface | | Moderate to heavily draining wounds, partial- and full-thickness wounds, pressure ulcers, surgical wounds, donor sites, dehisced wounds, cavity wounds, and wounds with sinus tracts or tunnels |
| 2. Silver dressings | Inhibits pathogen growth, especially of antibiotic-resistant strains. | Secondary dressing required secure silver dressing | Critically colonised wounds |
| Variety of silver dressings are available. These dressings contain ionic silver for immediate and controlled release. Transparent film, hydrocolloids, hydrogels, foams, alginites, hydrofibres, and composites | Cost-effective | Sensitivity to silver in some patients | Moderate to highly exuding wounds |
| | Moist wound dressing interface | May stain peri-wound tissue black due to oxidation. | Can be used postoperatively |
| | Cost-effective | Contraindicated in dry wounds or wounds with eschar | Non-adherent |
| 3. Chlorhexidine | Effective against a broad range of Gram-positive and Gram-negative bacteria | Not effective against *Pseudomonas aeruginosa* | Moderate to heavily draining wounds, partial- and full-thickness wounds, pressure ulcers, surgical wounds, donor sites, dehisced wounds, cavity wounds, and wounds with sinus tracts or tunnels |
| Paraffin tulle coated with chlorhexidine antiseptic agent | Can be used postoperatively | | Critically colonised wounds |
| | Non-adherent | | Not to be used in critical colonised wounds or grossly infected wounds |
| 4. Honey | Broad spectrum antimicrobial activity | Highly exuding wounds can cause maceration | Critically colonised wounds |
| Biologic wound dressing with multiple bioactivities that work in concert to expedite the healing process. Available in pastes, sheets, ointment and combination dressings | Reduces wound odour | May cause stinging sensation due to low pH | Low to moderate exuding wounds |
| | Autolytic debridement properties | | Appropriate for use in diabetic patients |
| | Moist wound healing interface | | |
| 5. Polyhexamethylene biguanide (PHMB) | Effective against bacterial and fungal infections | May require secondary dressing | Critically colonised wounds |
| These are dressings impregnated with the antiseptic agent PHMB available as gel disks or foams | Have a sustained effect | | Flat, cavity or sinus wounds |
| | Effective against drug resistant wound pathogens | | Gel PHMB disc can be used to de-slough infected wounds |
| | | | Reassess wound after 14 days and evaluate need for continuation |
| | | | Not to be used in dry wounds or wounds with eschar |
| 6. Hydrophobic dressings | No endotoxins are released in the wound bed | May require secondary dressing | Flat, cavity or sinus wounds |
| Bacteria and fungi with hydrophobic cell surfaces are attracted to and trapped within a hydrophobic dialkyl carbamoyl chloride (DACC) grid impregnated with acetate tissue which inactivates them | Available in different formulations | Odour present due to trapping of bacteria within the dressing | Moderate to heavily exuding wounds |
wound is clean. Many of the advanced and exudate-absorbing dressings require a secondary dressing to hold the primary dressing in place and this should take into consideration the status of the surrounding skin that could be damaged by the removal of the secondary dressing.3,13 Tables III and IV provide a summary of treatment options available for secondary intention wounds.

Wounds due to patient pathologies

Chronic wounds

Chronic wounds have different aetiologies and examples include diabetic foot, venous, arterial, mixed leg, pressure and malignant ulcers.60 The processes by which chronic wounds heal differ from acute wounds and consequently, chronic wounds take longer to heal, resulting in extended treatment plans.11 A damaged matrix, inflammatory enzymes and senescent cells are usually present within chronic wound beds, making wound debridement essential, though care should be taken not to remove new or healthy tissue.10 Surgical debridement is non-selective and often removes viable tissue as well, which is why some clinicians would opt for autolytic, chemical, or biological methods.61

In chronic wounds, cellular proliferation and angiogenesis are hindered by the wound exudate62,63 which contains excessive levels of matrix metalloproteinases that break down matrix proteins, growth factors, and cytokines.62-65 Owing to this, an ideal dressing for chronic wounds should provide a moist environment, absorb exudate, prevent maceration of surrounding tissue and be impermeable to bacteria.19 Where there is poor blood circulation, compression stockings or bandages should be utilised, and in the case of diabetic foot and pressure ulcers, offloading strategies must be employed to eliminate abnormal pressure points.66 Most importantly, clinicians should determine the vascular status of the patient before choosing any treatment modality.67 Further elaboration on chronic wounds and their treatment options will be expanded on in part 3 of this series.

Wound monitoring

All wounds, regardless of aetiology need to be monitored and post-treatment follow-up is important till the wound is completely healed. As a wound environment changes constantly, the wound needs to be reassessed when performing dressing changes so that the appropriate interventions can be applied. This may require changing the type of dressing to suit the newly developed characteristics. Using the same treatment plan for the duration of the healing time is no longer a valid practice.11 Referral of patients, especially those with complicated wounds, to wound care specialists is of paramount importance in order to prevent unwanted clinical outcomes such as amputation.68

In summary/concluding remarks

The crux of wound care is “using the right product on the right wound at the right time!”. This can be achieved by thorough wound assessment and matching the wound characteristics to the treatment plan resulting in favourable wound healing. As there are many new products available on the market, keeping abreast of new developments in wound care is an ambitious task, however, clinicians should use updated clinical decision-making tools and reference materials (such as the tables in this article) to achieve favourable clinical outcomes.

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