Basic Wound Management

Self-Directed Learning Package

Name: .............................................................
Date: .............................................................
Service: ..........................................................
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Introduction

This package will support health care professionals with clinical decision making in relation to the assessment and management of wounds in line with individual professional competence. The self-directed learning package (SDLP) is to be completed by all nursing staff on commencement of employment. Further knowledge and development of skills is encouraged through accessing the education links provided in the package. For further clarification of available wound management resources please; seek guidance from your Direct Line Manager, Nurse Educator, Clinical Nurse Wound Management or Clinical Nurse Consultant Wound and Stoma.

Please forward the completed SDLP to your line manager and retain a copy for your professional development portfolio.

Objectives

Completion of this SDLP will reinforce skills and knowledge in wound management and ensure clinicians maintain competency to:

- Identify the anatomy and function of the skin.
- Describe wound healing phases.
- Describe and explain holistic wound assessment.
- Describe and explain local wound assessment.
- Describe clinical assessment and development of patient focused wound management.
- Identify and describe the classification and actions of main dressing groups.
- Describe and demonstrate wound management documentation.
Basic skin anatomy

Introduction

This section is designed to provide a description of the skin and the structure/function of each layer.

- The skin is the largest organ in the human body and skin healing is often overlooked by health care professionals (Vowden & Vowden, 2017).
- The skin has a number of functions the main function being to protect the body’s internal environment from external factors. Openings in the skin (wounds) can leave the body’s internal environment open to pathogen infiltration. As this is the case, it is important that any wound in the skin be left uncovered for as short a time as possible in an attempt to reduce the chance of bacterial invasion (Carville, 2017).

Epidermis

The epidermis is the outermost layer of the skin and plays the primary role of an external protective layer for the body’s internal environment. Without this layer the body would be unable to retain the water needed to maintain its internal environment and would be open to any pathogens that it met.

The epidermis regeneration process takes around 30 days to complete a full cycle and each of the below layers are made up of cells that are at different phases of this process (Carville, 2017).
Dermis
The Dermis connects the epidermis to the rest of the body and contains three different types of tissue; collagen, elastic tissue and reticular fibres. The bases of hair follicles are found in the dermis as well as sebaceous glands, sweat glands and nerves that are responsible for sensing such things as touch, pressure, pain and changes in temperature. The sebaceous glands found in this layer of the skin are responsible for releasing oil that prevents hair from drying out, maintains the elasticity of the skin and inhibits bacterial growth (Carville, 2017).

Hypodermis/Subcutaneous
The hypodermis is the largest layer of the skin and contains a large number of fat/adipose cells. Veins, arteries, nerves and lymph channels run through the dermis and hypodermis regulating blood flow and receiving touch sensations. The main function of this layer is to regulate temperature and provide a shock absorbent layer to protect underlying structures (Carville, 2017).
Summary
The skin has a range of functions including protection, internal temperature regulation and sensory perception.
Within a health care setting, health care professionals are often presented with patients that have wounds. Depending on its size, the wound will be preventing the skin from achieving a number of its functions. The most common function that is lost when skin integrity is no longer present is protection. As this is the case it is important to maintain the integrity of the skin at all times. This can be done by dressing the wound and only exposing the wound to external factors when necessary.
Phases of wound healing

Introduction

This section is designed to provide a description of the phases of wound healing. Through the completion of this section you will gain knowledge and understanding of how the skin heals and how this process occurs.

Normal wound healing occurs in phases. The process begins when disruption of skin integrity occurs below the epidermis. The four phases of wound healing are Haemostasis, Inflammatory, Proliferative, and Maturation phases. These phases often overlap each other but wound healing always follows the same sequence.

Haemostasis

Haemostasis is the skin’s immediate response to tissue injury, it occurs for approximately 30 minutes following the injury. Haemostasis occurs in three key processes: vasoconstriction, platelet activation and coagulation (Singh, Young, & McNaught, 2017). The purpose of this phase is to control bleeding and provide a temporary barrier to bacterial infection.
**Inflammation**

The inflammatory phase is the beginning of the body's attempt to heal the wound. It occurs from the time of haemostasis until 3-5 days following injury in acute wounds but can be prolonged in chronic wounds (Singh et al, 2017).

The inflammatory phase is manifested by warmth, redness, swelling and pain. Vasodilation occurs allowing more oxygenation to the wound. This increase in blood flow is the cause of the redness and heat visible at the wound site. The swelling and pain is due to the rise in extracellular fluid (Singh et al, 2017).

**Proliferation**

The proliferation phase is the ‘repair’ phase which occurs from 2 to 21 days post injury (Carville, 2017). During this period angiogenesis (revascularisation) occurs, granulation tissue is formed, wound contraction occurs and epithelialisation begins. The new tissue fills the wound cavity and produces new capillaries. The wound edges contract to pull together and reduce the size of the wound defect, thereby reducing the amount of new tissue the body has to produce (Singh et al, 2017). After wound contraction occurs, the surface of the wound is closed by epithelialisation. In a deep wound, epithelial cells move towards each other from the wound margins closing the deficit. This process occurs faster in a moist environment. In a superficial wound, hair follicles may act as islands to help the regeneration (Carville, 2017).
Remodelling (Maturation)

In this final phase of wound healing new collagen forms, which is the body’s attempt to provide strong tissue. This phase occurs from three weeks up to two years post injury (Singh et al, 2017). The tissue gradually becomes stronger, leaving a paler, flatter scar. This scar tissue gains tensile strength although it will only ever be approximately 80% as strong as uninjured skin (Singh et al, 2017).

Summary
These descriptions may be used to describe normal wound healing or the type of healing that occurs in the acute wound. There is significant overlap in both the cellular and molecular activity, and healing phases can move faster or slower depending on other factors that may be affecting the wound.
Holistic assessment

Introduction
The purpose of completing this section is to emphasise the importance of completing a structured, detailed, holistic assessment of the patient, that provides a clear picture of their current health status as well as identifying other significant contributory factors.

Holistic assessment

1, Presenting complaint/recent history – this would be the wound but it is important to record a brief history as this may give clues as to the aetiology of the wound. This would include a structured pain assessment using an assessment tool e.g. OLDCART (onset, location, duration, characteristics, aggravating/associated symptoms, radiating, treatment).

2, Age of patient – all phases of the healing process are affected by the ageing process e.g. fibroblast activity decreases with age subsequently there is poor collagen formation and slowing of healing.

3, Baseline observations – these can indicate that there is infection or hypertension present.

4, Full medical history including the cause of the wound – this gives the opportunity for the clinician to identify conditions that may have caused the wound to develop or exacerbated the existing wound such as diabetes, vascular disease, immune deficiency disorders, conditions that effect mobility and sensation, malabsorption conditions and anaemia.

5, Medication/allergies – some medications can inhibit the body’s natural healing process.

6, Social history – this is important to consider when devising the plan of care as it needs to fit in with the patient’s current lifestyle and their current level of family/carer support. It is also important to consider the patient’s family history, as there are several conditions that have strong familial links.

7, Psychological problems – stress can raise the level of serum corticosteroids and delay wound healing. Stress can also stimulate the sympathetic nervous system which causes vasoconstriction, reducing perfusion of the wound which delays wound healing.

8, Cultural influences – some patients have strong beliefs around the use of traditional medicine and healing. This needs to be considered within the assessment and respected when formulating the plan of care.

9, Nutritional status – poor nutrition can be a result of poor diet which may be influenced by a low income, social isolation, an underlying disorder such as Crohn’s Disease or a restricted dietary intake post-surgery.

10, Lifestyle choices – cigarette smoking affects healing by reducing the amount of circulating oxygen and also causes vasoconstriction and increases blood clotting which decreases tissue perfusion. Alcohol thins the blood and long-term use can cause liver and kidney damage.

Summary
A thorough holistic wound assessment should be conducted which includes both the patient and local wound characteristics. Assessing these factors assists in establishing an appropriate treatment pathway to promote rapid wound healing.
Documentation / assessment framework

Introduction
Local assessment is an ongoing process and should include assessment of the physical wound characteristic – locations, size, depth, presence of pain, condition of the wound bed.

The length of a wound should always be measured from the direction of the patient’s head to toes and the width should be measured from the direction of the patient’s left to right side.

The direction of areas of undermining should be described using a clock face with the 12’O’clock facing the head of the patient.

In practice, documentation also affects continuity of care. One patient will probably be cared for by a number of different nurses, therefore a detailed record of assessment and plan of care will ensure that different nurses have the same information about the wound and provide the same care (Wounds Australia, 2016).

To facilitate a standardised approach to wound assessment documentation the T.I.M.E. framework can be used which is based on the work of the International Wound Bed Preparation Advisory Board. This acronym comprises of four components that underpin wound healing (Tissue management, Inflammation and infection control, Moisture balance and Epithelial (edge) advancement) (Harries, Bosanquet, & Harding, 2016).

This framework can be utilised as a treatment strategy for all wounds and provides a systematic approach to the management of wounds by focussing on each stage of wound healing and removing the barriers allowing wounds to heal.

- **T** for Tissue
- **I** for Infection or inflammation
- **M** for Moisture imbalance
- **E** for Epithelial edge advancement

(Harries et al, 2016)
The first letter of the acronym T.I.M.E.s is ‘T’ for Tissue.
This wound bed assessment principle focuses on the Tissue within the wound bed.
- What is the condition of the tissue in the wound?
- Is the tissue at the wound bed viable healthy granulating tissue or non-viable sloughy / necrotic tissue?
- If there is non-viable tissue present in the wound, how much of the tissue is viable and how much is non-viable?

The use of percentages to describe the type of tissue identified can aid wound documentation!

Non-viable tissue impedes wound healing as it:
- Provides an environment for bacteria to flourish increasing the spread of infection
- Hinders the development and movement of the epithelial cells across the wound bed

Non-viable tissue needs to be removed to encourage granulating tissue.

Auto-lytic debridement is available to all nurses through the use of moist interactive dressings i.e. hydrogels, hydrofibres, hydrocolloids and alginites to provide additional moisture onto the wound bed environment. This allows slough and necrotic tissue to become liquefied making it easier to be removed from the wound bed. (Harries et al, 2016).

Other debridement options:

- Sharp debridement is the conservative removal of non-viable tissue using a scalpel blade by a skilled credentialed clinician (Harries et al, 2016). It is not an option for all patients and is contraindicated for wounds that have a poor blood supply to support healing.

- Surgical debridement is the excision and resection of necrotic tissue performed when there is extensive infection, undermining/ tunnelling or sepsis (Harries et al, 2016). This procedure is effective in the removal of non-viable tissue but can cause post-operative pain and bleeding.

Summary
There are a number of options when it comes to the removal of non-viable tissue. Each of these options need to be discussed with both the patient and the medical team as not all options are suitable for all patients and all wounds.
The second letter of the acronym is ‘I’ for Infection or Inflammation.
This wound bed assessment principle focuses on identifying wound infection (Harries et al, 2016).

Bacteria is present in all wounds! The level of bacteria and the patient’s immunological status influences whether wound infection occurs. When the patient presents with systemic signs of infection as a result of the infected wound, antibiotics may be required. i.e. spreading cellulitis, pyrexia (Mockford, & O’Grady, 2017).

The amount of bacterial load within a wound is classified as either contamination, colonisation, critical colonisation or infection (International Wound Infection Institute (IWII), 2016).

- **Contamination**: non-multiplying bacteria in a wound (IWII, 2016).
- **Colonisation**: bacteria in a wound but is not causing a systemic reaction (IWII, 2016).
- **Critical colonisation**: a multiplication of bacterial organisms which are hindering wound healing (IWII, 2016). There is an immune response locally around the wound.
- **Infection (spreading/systemic)**: the multiplication of bacteria causing an immune response from the patient which overwhelms the healing process (IWII, 2016).

Wound infection is not to be confused with the normal inflammation process in the second stage of wound healing after haemostasis in the first 0-5 days following the wound injury. The inflammatory wound healing stage can continue for approximately 7-10 days (Singh et al, 2017).

**Summary**
High bacterial loading within a wound or the surrounding tissue can have a large effect of the body’s ability to heal the wound. It is important that infection is identified early and managed effectively.
The third letter of the acronym is **M’ Moisture imbalance**. This wound bed assessment principle looks at the amount and type of wound exudate. During the inflammatory phase, wound exudate is produced as part of normal wound healing to provide wound cleansing and an optimal moist environment for healing. Excess production of abnormal exudate is an indication of infection (Harries et al, 2016).

<table>
<thead>
<tr>
<th>Types of Exudate</th>
<th>Colour</th>
<th>Consistency</th>
<th>Description</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serous</td>
<td>Clear / straw colour</td>
<td>Thin watery</td>
<td>Clear fluid</td>
<td>Normal during inflammatory healing phase</td>
</tr>
<tr>
<td>Sanguinous</td>
<td>Red</td>
<td>Thin watery</td>
<td>Blood</td>
<td>New vessel growth or disruption</td>
</tr>
<tr>
<td>Serosanguinous</td>
<td>Light red/pink</td>
<td>Thin Watery</td>
<td>Blood / clear fluid</td>
<td>Normal inflammatory healing phase</td>
</tr>
<tr>
<td>Seropurulent</td>
<td>Cloudy yellow</td>
<td>Thin watery</td>
<td>Pus/watery fluid</td>
<td>Early signs of wound infection or autolytic debridement</td>
</tr>
<tr>
<td>Purulent/pus</td>
<td>Yellow/green</td>
<td>Thick, Opaque</td>
<td>Pus, cloudy, viscous, malodourous</td>
<td>Wound infection</td>
</tr>
</tbody>
</table>

(Carville, 2017).

It is important to choose an appropriate dressing product to manage the excessive exudate in an infected wound and prevent surrounding skin maceration. The amount of exudate can be described as - dry, moist, wet, saturated or leaking.
Evaluation of dressing exudate interaction:
(Assessment of the exudate volume on the wound bed and on the dressings).

<table>
<thead>
<tr>
<th>Dry</th>
<th>Wound bed is dry; with no visible moisture. The primary dressing is unmarked; dressing may be adherent to wound.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moist</td>
<td>Small amounts of fluid are visible on the removed dressing. The primary dressing may be lightly marked.</td>
</tr>
<tr>
<td>Wet</td>
<td>Small amounts of fluid are visible on the removed dressing; the primary dressing is extensively marked, without strike-through.</td>
</tr>
<tr>
<td>Saturated</td>
<td>Primary dressing is wet and with strike-through. The dressing change is required more frequently than usual for the dressing type. The surrounding skin may be macerated.</td>
</tr>
<tr>
<td>Leaking</td>
<td>Dressings are saturated and exudate is escaping from primary and secondary dressings onto clothes or beyond; dressing change is required much more frequently than usual for dressing type.</td>
</tr>
</tbody>
</table>

(From Carville, 2017).

Summary
The management of moisture is an important aspect of wound care and at times difficult to achieve in the first instance. It is important that your assessment of wound fluid is clearly documented using the correct terminology to enable effective reassessment and justification for product choice.

E for Epithelial edge advancement

The fourth letter of the acronym is ‘E’ Edge of the wound non advancing or undermined (Harries et al, 2016). This wound bed assessment principle focuses on whether or not epithelisation (growth of epithelial cells over the wound) is occurring at the wound edge. As part of the proliferation phase of wound healing, epithelial cells start to migrate from the edges across the wound bed. As this is the case it is important to keep the wound edges free of debris/build-up and it is also important to consider the wound’s surrounding skin as:

- Excess exudate from a wound can cause maceration of the surrounding skin.
- Dressing products can cause irritation to the surrounding skin.
- Incorrect application/removal of the dressing can cause blistering/trauma of the surrounding skin.
- Excessively dry flaky skin can harbour bacteria.
- Calluses can build up and thickening of the skin, due to neuropathy and imbalance of weight distribution causing pressure.
Summary
The build-up of non-viable tissue/undermining at the epidermal edge of a wound can slow wound healing due to their obstructive nature. As this is the case these obstructions need to be firstly recognised and secondly managed.

The T.I.M.E. tool provides a simple and systematic approach to wound bed assessment. Visual observation and evaluation of each wound bed principle will enable you to provide effective wound care management.
Quiz

1. It is ok to leave a wound undressed or covered for an extended period?
   - True
   - False

2. What is the primary function of the epidermis?
   A. Protection
   B. Temperature regulation
   C. Shock absorption
   D. House sweat glands

3. Which is the middle layer of the skin?
   A. Hypodermis/subcutaneous layer
   B. Epidermal layer
   C. Dermal layer

4. Which phase occurs from 2-3 days to 21 days post injury?
   A. Remodelling/maturation
   B. Proliferative
   C. Inflammatory
   D. Haemostasis

5. Scar tissue regains how much of the tissue’s original strength?
   A. 50%
   B. 60%
   C. 70%
   D. 80%

6. The wound is heavily exuding, the surrounding wound edges are macerated and the primary wound dressing is saturated. Which element of the T.I.M.E. assessment tool is identified as being in imbalance?
   A. Tissue
   B. Infection or Inflammation
   C. Moisture
   D. Edges of the wound
7. On first observation of the wound bed, non-viable tissue is present. What wound bed assessment principle are you using?

A. M for Moisture  
B. S for surrounding skin  
C. E for wound edges  
D. T for tissue

8. When assessing the exudate from the wound and on the primary dressing you have removed, what factors do you need to consider?

A. Amount of exudate  
B. Type of exudate  
C. Consistency of exudate  
D. All the above

9. Using the ‘E’ wound bed assessment principle, you are observing

A. Exudate volume and consistency  
B. Exercise and activity of the patient to improve circulation to aid the healing process.  
C. Edges of the wound to determine if the wound size is decreasing or if the wound is not progressing.  
D. Evidence of local infection
Further reading

Wound Management is an ever-evolving practice with research being conducted into both practice and consumable development daily. Understanding the basics is a good starting point and once you have completed this SDLP you may wish to develop your knowledge further. To support you the below list of resources has been compiled for you to explore further:


Wound Innovations is a Brisbane-based service that provided clinical consultations and clinician education including several online courses: [https://www.woundinnovations.com.au/](https://www.woundinnovations.com.au/)

Promoting Healthy Skin is a QUT self-directed learning package [http://promoting-healthy-skin.qut.edu.au/](http://promoting-healthy-skin.qut.edu.au/)

Wounds Australia is the peak body for wound care and management in Australia. This link will guide you to a number of resources including information as to becoming a member of the Wounds Australia society: [https://www.woundsaustralia.com.au/](https://www.woundsaustralia.com.au/)

World of Wounds is a peer reviewed online journal providing a wide range of wound related articles: [http://www.worldwidewounds.com/](http://www.worldwidewounds.com/)

European Wound Management Association is a peak body that delivers professional guidance in the field of wound care and through this link you’ll find information around educational resources and international guidelines: [http://ewma.org/it/](http://ewma.org/it/)

This link to the Wounds Australia will guide you to a number of publications designed to both guide and improve clinical practice in wound care: [https://www.woundsaustralia.com.au/Web/Resources/Publications/Web/Resources/Publications/Publications.aspx?hkey=1285b5b2-6030-44c3-87c8-5222fc1a88d9](https://www.woundsaustralia.com.au/Web/Resources/Publications/Web/Resources/Publications/Publications.aspx?hkey=1285b5b2-6030-44c3-87c8-5222fc1a88d9)

Dressings is a website that contains a list of wound product data cards designed to guide clinicians and patients in understanding how and why products are used: [www.dressings.org](http://www.dressings.org)

For free access journals, search wound care/management in your itune/google play stores and download free journal apps such as “Wounds”, “Podiatry Today” and “Ostomy Wound Management”.


Basic Wound Management SDLP

RESULT: (circle)

<table>
<thead>
<tr>
<th>ACHIEVED</th>
<th>NOT ACHIEVED</th>
</tr>
</thead>
</table>

Comments

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Signature of Assessor ___________________________ Date / /

Name________________________________________________

Signature of Assessee ______________________________ Date / /

Name________________________________________________
Reference list


Appendix 1

The following is intended as an overview only. A full assessment and clinical judgement should be used at all times.
<table>
<thead>
<tr>
<th>Category</th>
<th>Function</th>
<th>Indications</th>
<th>Contraindications</th>
<th>Secondary dressing</th>
<th>Wear time</th>
<th>General comment</th>
<th>Product Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Alginate</td>
<td>Haemostatic</td>
<td>All for bleed</td>
<td>Dry wound bed</td>
<td>Absorbent pad</td>
<td>Up to 24 Hours</td>
<td>Can cause discomfort in line dressing wounds. bleeding wounds. elevate the site. apply pressure. apply calcium alginate. seek medical assistance.</td>
<td>Kaltostat</td>
</tr>
<tr>
<td>Hydrocolloid</td>
<td>Autolytic débridement and re-hydration</td>
<td>Dry necrotic, slough and granulation lesions</td>
<td>Wet to leaking wound</td>
<td>None</td>
<td>Up to 7 days</td>
<td>Hydrocolloid dressing promotes a warm moist environment through the total resorption of the wound. the exclusive property promotes breaking down of adherent granulation tissue.</td>
<td>DuroDerm extra thin</td>
</tr>
<tr>
<td>Hydrogel / Hydrogel sheets</td>
<td>Autolytic débridement and re-hydration</td>
<td>Dry necrotic, slough and granulation lesions</td>
<td>Wet infected wound</td>
<td>Island dressing / low adherence dressing</td>
<td>Up to 3 days</td>
<td>This consistency gel often require a low adherence dressing to contain the gel. supports a moist wound environment.</td>
<td>Solosite gel</td>
</tr>
<tr>
<td>Low-Adherent Mesh</td>
<td>Contact layer</td>
<td>Primary dressing that will not disrupt healing tissue by sticking to the wound</td>
<td>All source types for example: abrasions, non-burrowing wounds, split thickness donor sites, skin grafts, burns and under negative pressure wound therapy.</td>
<td>Wet – leaking wound</td>
<td>Absorbent pad / Negative Pressure Wound Therapy</td>
<td>2–7 days</td>
<td>Used as a cheap basic contact layer.</td>
</tr>
<tr>
<td>Film/Surgical Island dressing</td>
<td>Breathable primary/secondary dressing, used to protect the wound and in the case of dehiscence dressing to manage exudate.</td>
<td>Wet – leaking wound</td>
<td>None</td>
<td>Wet – leaking wound</td>
<td>Up to 7 days</td>
<td>Protect from external factors and manage wound exudate.</td>
<td>Compose</td>
</tr>
<tr>
<td>Gel/Blister dressing</td>
<td>Eccentric management Autolytic débridement</td>
<td>Abras – wet wound</td>
<td>Dry wound bed</td>
<td>Absorbent pad / film / island dressing / foam</td>
<td>Up to 7 days</td>
<td>Suitable for all wound depths including superficial and cavities</td>
<td>Aquecel Extra</td>
</tr>
<tr>
<td>Absorbent pad</td>
<td>Primary/secondary dressing Eccentric management</td>
<td>Abras – wet wound</td>
<td>Dry – moist wound</td>
<td>None</td>
<td>Up to 3 days</td>
<td>Cheap absorbent pad for frequent dressing changes.</td>
<td>Gauze / Combine / Monto / Zetvitr</td>
</tr>
<tr>
<td>Foam</td>
<td>Eccentric management</td>
<td>Abras – wet wound</td>
<td>Dry wound bed</td>
<td>None</td>
<td>Up to 7 days</td>
<td>Remove high fluid levels and support increased wear time.</td>
<td>Do not cut to shape. Noplex Border</td>
</tr>
<tr>
<td>Skin care</td>
<td>Dressing adhesive removal Skin preparation prior to dressing application</td>
<td>Fray / pin wound area</td>
<td>Satisfactory</td>
<td>None</td>
<td>None</td>
<td>Beneficial in reducing tissue to the pin wound area through dressing removal</td>
<td>Comfort Film / Remove wafers / Cavilon</td>
</tr>
<tr>
<td>Antimicrobial</td>
<td>Reduce bio burden Odour management</td>
<td>Contaminated – colonised - early signs of infection</td>
<td>Absent</td>
<td>Low adherence mesh / absorbent pad / foam / island dressing</td>
<td>Up to 7 days</td>
<td>This is available in a range of sizes and shapes. can be used for both superficial and deep wounds. kills broad spectrum pathogens including MRSA and VRE within 2 minutes of exposure.</td>
<td>Aquecel Ag</td>
</tr>
<tr>
<td>Silver Colloidal Flake</td>
<td>Anti-inflammatory Eccentric management Autolytic débridement</td>
<td>Abras – wet wound</td>
<td>Micro – leaking wound / Silver sensitivity</td>
<td>Low adherence mesh / foam / island dressing</td>
<td>Up to 7 days</td>
<td>This is available in a range of sizes and shapes. can be used for both superficial and deep wounds. kills broad spectrum pathogens including MRSA and VRE within 2 minutes of exposure.</td>
<td>Aquecel Ag</td>
</tr>
<tr>
<td>Castorson Active</td>
<td>Pro-inflammatory Eccentric management Autolytic débridement</td>
<td>Abras – dry wound</td>
<td>Wet – leaking wound / iodine sensitivity</td>
<td>Low adherence mesh / absorbent pad / foam / island dressing</td>
<td>Up to 3 days</td>
<td>Can affect taste of wound fluid.</td>
<td>Indesorb</td>
</tr>
<tr>
<td>Silver Mesh</td>
<td>Anti-Inflammatory Eccentric management</td>
<td>Abras – leaking wound</td>
<td>Dry wound, Silver sensitivity / Preparing or dressing or dressing wound damage in a granulation</td>
<td>Low adherence mesh, absorbent pad / foam / island dressing</td>
<td>Up to 2 days</td>
<td>Cannot be used with saline. used to debride the wound.</td>
<td>Acticoat flex 3</td>
</tr>
<tr>
<td>Silver ouacridin</td>
<td>Neutrophilic bacteria</td>
<td>Wound debrideal</td>
<td>No odour, Silver sensitivity / Preparing or dressing or dressing wound damage in a granulation</td>
<td>Low adherence mesh, absorbent pad / foam / island dressing</td>
<td>Up to 7 days</td>
<td>Can be applied with or over secondary dressing to all in odour control.</td>
<td>Acticosb silver 25</td>
</tr>
<tr>
<td>Cholesterol Mesh</td>
<td>Primary dressing that will not disrupt healing issue by sticking to the wound</td>
<td>Dry – wet wound</td>
<td>Split thickness donor sites, skin graft, burns</td>
<td>Wet – leaking wound</td>
<td>Absorbent pad</td>
<td>Primarily used with plastic surgery teams to protect skin grafts and donor sites. 5.3% Cholesterol w/rich mixture which is absorbed quickly by the wound.</td>
<td>Barstgrass</td>
</tr>
</tbody>
</table>

**Cost Considerations**

- **Cost Indicator**
  - Green – Low cost
  - Orange – Moderate cost
  - Red – High cost

**Moderate - High cost**
- Review the need / effectiveness of these products every two weeks or at the time of a significant change in the primary goal.
- Aim for these products to be changed less frequently.

**Acute Wounds**
Fast wound progressor / frequent primary goal change
- Keep it basic
- Avoid high cost products in the first instant unless rationalised

**Chronic Wounds**
Initial potential for frequent dressing change
- Avoid high cost products in the first instant
- Once the symptoms are under control consider using 3 day + products to extend wear time

**Palliative/Conservative Wound Management**
Long term goal is to manage wound symptoms only
- Keep it basic
- Avoid high cost products in the first instant unless rationalised

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*Produced by: Allen Shackleton*
Appendix 2
Wound Care Scenarios

Introduction

This section is not compulsory but is designed to provide wound care scenarios to enable the learner to practice using the T.I.M.E. principles in making appropriate clinical decisions around wound care management and product choice.

Once completed discuss your answers with either the Wound/stoma CNC or the Wound Management CN.

Case Study 1

Mr T is a 48 year old man who developed a small wound on his left arm. Mr T is unsure how the wound developed but he reports that it has been there for three weeks with very little change. Mr T has no other co-morbidities. Mr T has been washing the area daily in the shower and applying a band-aid type dressing that he purchased from the supermarket. Mr T also leaves the area open to air to 'help dry it out' for a couple of hours after his shower. Mr T states the area is not painful.

You assess his wound using the T.I.M.E. principles and this is what you find:

T  Approximately 70% eschar, 20% slough and 10% granulation tissue.
I  No increase in redness or swelling, periwound skin is a little pink.
M  Wound is moist; there is no leakage of exudate from the dressing
E  Edges are healthy other than where the eschar is evident.

After your assessment using the T.I.M.E. principles your goal for this wound is to debride the eschar and slough from this wound with the aim being to have a healthy red granulating wound base. You will monitor the surrounding pink area but you do not feel that there is any infection as there are no other signs of infection – no increase in swelling, pain or exudate.
Question 1.
You would like this wound debrided of the eschar and slough to encourage granulation tissue to form. What product choice would be suitable to enable autolytic debridement?

Question 2.
Depending on the dressings you selected for the previous question, how frequently would you change this dressing?

Question 3.
What education would you give Mr T on managing his dressing?
Mrs I is an 83-year-old woman who lives at home with her elderly husband for whom she is the sole care giver. Mrs I has a history of poorly controlled diabetes, hypertension, lower limb swelling and poor nutrition. After working in the garden Mrs I sustained an injury to her lower leg which initially blistered and has now burst and become raw, red, painful and warm to the touch. Mrs I states the raw area has become even more swollen and is leaking a lot of fluid. She has been covering the area with a clean face cloth and a bandage.

Question 1.
Using the T.I.M.E. acronym what would your assessment be around ‘I’ – inflammation/infection?

Question 2:
Mrs I was started on IV antibiotics and you now need to decide upon a wound care plan to manage the high level of leakage. What would your dressing plan be?
Case Study 3

Mr M is a 79-year-old man who due to reduced mobility has spent most of the past three months in his bed. As a result, Mr M has developed a stage 4 pressure injury to his sacrum which is being managed by community nurses. There has been pressure relieving devices put in place, education and support has also been provided for caregivers around how to maintain good pressure area care.

You assess his wound using the **T.I.M.E.** principles:

- **T** Approximately 95% granulation tissue, with visible bone.
- **I** No periwound redness or swelling.
- **M** Surrounding edges are macerated
- **E** Edges are rolled and undermined with the surrounding skin intact but macerated and fragile

**Question 1:**

A Negative Pressure Wound Therapy (NPWT) dressing is not appropriate in this case due to personal circumstances. The previous dressing of Cuticerin and dressing pad, was being changed every 2\textsuperscript{nd} day. Is this still the most appropriate dressing plan? If not what would your new dressing plan consist of?
Mr E is a 54-year-old man with a chronic plantar ulcer which is producing a high level of serous exudate. Because of the wound Mr E is unable to work; his work requires him to wear steel-capped boots and be up on his feet all day. Mr E has had 2 infections in his foot in the last 3 months which required oral antibiotic treatment.

Mr E was diagnosed with Type II diabetes in 2000. As a result of the diabetes Mr E has severe neuropathy.

Question 1:
You have assessed the wound using the T.I.M.E. acronym. What would your assessment of the wound edges be?

Question 2:
After your assessment, you refer Mr E to a Podiatry service for review, treatment and pressure off loading shoes. There is an obvious deeper area in the wound, some granulation but the wound bed is quite pale.
What dressing would you apply and why?