Wound Management Guidelines

Relevant to: All PCT Clinical Staff
Produced by: Tissue Viability Committee
Responsible Executive Director: Director of Nursing
Date of Approval: September 2011
Date of Implementation: Immediate after approval
Due Review Date: September 2013
Responsible Reviewing Officer: Cathy Malone
This document replaces: WE/07/GUI0001/TV Version 2

Signed
Chief Executive

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Scheme of Publication

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POLICY VALIDITY STATEMENT

THIS POLICY IS DUE FOR REVIEW IN …July 2013…..

After this date, this document will become invalid.
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WOUND MANAGEMENT

GUIDELINES

SEPT West Essex Locality

NEPT

September 2011

THE TISSUE VIABILITY SERVICE ©
WOUND MANAGEMENT GUIDELINES

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As with any clinical guideline, recommendations may not be appropriate for use in all circumstances. A limitation of a guideline is that it simplifies clinical decision-making. Decisions to adopt any particular recommendation must be made by the practitioner in the light of:

- Available resources
- Local services, policies and protocols
- The patient’s circumstances and wishes
- Available personnel and devices
- Clinical experience of the practitioner
- Knowledge of more recent research findings.

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1. INTRODUCTION AND SCOPE OF GUIDELINE

1.1 Purpose of the Wound Guideline

1.1.1 The purpose of this guideline is to provide guidance within SEPT West Essex Locality regarding the management of acute and chronic wounds.

1.1.2 This guideline aims to simplify the decision making regarding wound management while ensuring that patients are provided with the best evidence based care. To that end this guideline must be used to ensure that all patients have been assessed and managed holistically and that care is supported with completed care plans and assessments in conjunction with the following guidelines:

- SEPT West Essex Locality Infection Control Guidelines
- SEPT West Essex Locality Pressure Ulcer Prevention and Management Guidelines.
- SEPT West Essex Locality Dressing Formulary Guidelines
- Nursing and Midwifery Council (NMC) The Code: Standards of conduct, performance and ethics for nurses and midwives.\(^2\)
- The Royal Marsden Hospital, Manual of Clinical Nursing procedures.\(^3\)

1.1.3 This document also aims to ensure transparency regarding management of patients with wounds within SEPT West Essex Locality, NHS West Essex and NEPT, ensuring fair and equitable access to the best care and advice regardless of whether care is provided by NHS providers or private nursing homes providers. It is intended that adherence to these guidelines will facilitate all patients with non healing wounds being given access to the Tissue Viability Department if clinically appropriate as illustrated in the Care Pathway available in Appendix 2

1.1.4 This guideline was written by the Tissue Viability Committee, which is a properly constituted subcommittee of the Nursing & Public Health Forum (NPHF) for SEPT West Essex Locality.

1.1.5 This guidelines is the product of collaboration between the Tissue Viability Service, The Leg Ulcer Service, Community and Inpatient Nursing Services, the Medicines Management Department, Infection Control, Dietetics and the Foot Health Department. This guideline does not serve to advise on the management of Burns and Plastics, Dermatology, or Diabetic Foot Ulcers. Clinicians requiring support on such issues should seek advice from the appropriate Burns and Plastics, Dermatology Services or Foot Health Department.

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\(^2\) NMC (2008) The Code, Standards of conduct, performance and ethics for nurses and midwives

2. **PROCESS OF HEALING**

Wound healing is a continuous process, however four stages can be identified. The length of each phase varies with the nature of the wound and the patient’s general condition.

<table>
<thead>
<tr>
<th>STAGE</th>
<th>PROCESS</th>
<th>CLINICAL EFFECTS</th>
<th>IMPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMMEDIATE</td>
<td>• Haemostasis</td>
<td>• Haemorrhage controlled or reduced.</td>
<td>• Dress with a secure pressure bandage.</td>
</tr>
<tr>
<td></td>
<td>• Activation of endothelial cells, platelets and clotting cascade</td>
<td>• Clot forms in wound.</td>
<td>• Seek medical advice if blood loss is excessive persistent.</td>
</tr>
<tr>
<td>INFLAMMATION</td>
<td>• Mediator release</td>
<td>• Inflammatory process initiated.</td>
<td>Observe the following:</td>
</tr>
<tr>
<td></td>
<td>• Vasodilatation</td>
<td>• Pain</td>
<td>• Swelling and discoloration</td>
</tr>
<tr>
<td></td>
<td>• Increased capillary permeability</td>
<td>• Skin becomes red hot</td>
<td>• Signs of infection (see section 4&amp;5) and inform medical staff if concerned.</td>
</tr>
<tr>
<td></td>
<td>• Chemotaxis</td>
<td>• Swelling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Phagocytosis</td>
<td>• Exudate production</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Initiation of Repair</td>
<td>• Crust, pus or sloughing</td>
<td></td>
</tr>
<tr>
<td>PROLIFERATION</td>
<td>• Granulation</td>
<td>• No Clinical effects visible</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Angiogenesis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Collagen production</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Epithelialisation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Contraction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATURATION</td>
<td>• Collagen remodelling</td>
<td>• Red, vascular tissue appears in wound</td>
<td>The nurse must ensure:</td>
</tr>
<tr>
<td></td>
<td>• Capillary regression</td>
<td>• Smooth marginal zone or islands of epithelium seen in wound</td>
<td>• The patient received a nutritious diet, high in vitamin C and protein.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Size of defect reduced</td>
<td>• Movement is encouraged to prevent DVT and contractures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Physical support of the wound area and pain relief.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• The patient is educated regarding any physical restriction and provision of healing</td>
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</tbody>
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Table 1 Stages of Healing. Source: The Wound Programme^5 & Wet Wounds^6

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^6 The Wound Programme (1992) Centre for Medical Education. Dundee
2.1 **Healing by First Intention** (Acute Wounds)

**Definition:** Surgical or traumatic wounds where the edges are brought together by suturing, steristrips, clip, staples or glue.

Acute wounds usually follow a well-defined process as illustrated in Table 1. These stages overlap and the entire wound-healing process can take several months.

Blood and exudate from a surgical wound is usually minimal. Within 48 hours the wound will have formed a natural barrier against invasion by pathogenic bacteria. 7 8

Surgical wounds, which are dry, can be left exposed after 48 hours following surgery. The preference of individual surgeons is likely to vary and staff should adhere to the written instruction within the patients notes.

2.2 **Healing by Second Intention** 9 (Chronic wounds)

**Definition:** All open wounds e.g. pressure ulcers, dehisced surgical wounds, leg ulcers. (These guidelines do not cover the management of Leg Ulceration. Please refer to the Leg Ulcer Guidelines)

In the past, the acute wound-healing model has been applied to chronic wounds, but it is now known that chronic wound healing is different from acute wound healing.10 Chronic wounds become ‘stuck’ in the inflammatory and proliferative phases of healing, delaying healing.11 The epidermis fails to migrate across the wound tissue and there is hyperproliferation at the wound margins, which interferes with normal cellular migration over the wound bed.12 In chronic wounds there appears to be an overproduction of matrix modules resulting from underlying cellular dysfunction and disregulation.13 Fibrinogen and fibrin are also common in chronic wounds and it is thought that these and other macromolecules scavange growth factors and other molecules involved in promoting wound repair.14 So, while there may be large number of growth factors within the wound, these can become trapped and therefore unavailable to the wound repair process. Chronic wound fluid is also bio chemically distinct from acute wound fluid; it slows down, or even blocks the proliferation of cells such as keratinocytes, fibroblasts and endothelial cells, which are essential for the wound-healing process.15 16

For these reasons chronic wounds must be viewed differently than acute wounds. There is often a complex mix of local and host factors, which need to be assessed and treated.

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7 Thomlinson D (1987) To Clean or not to Clean. Nursing Times Journal of Infection Control Nursing, Vol 83.5 - 4 Mar
2.3 **Wound Bed Preparation**

Wound Bed Preparation (WBP) is a well established concept and the TIME framework is a practical tool to assist practitioners when assessing and managing patients with wounds.\(^{17}\)\(^{18}\)\(^{19}\) It is however important to remember to assess the whole patient.\(^{20}\)\(^{21}\) WBP is a way of focusing systematically on most of the critical components of the non-healing wound to identify the possible cause of the problem.

WBP involves the application of the principles of Tissue, Infection, Moisture and Edge (TIME) to a wound bed in order to enable the practitioner to make a systematic interpretation of the observable characteristics of a wound and to decide on the most appropriate intervention. The TIME Table (Table 2) illustrates in a simple way the link between clinical observations and the underlying cellular abnormalities, and the effects of clinical interventions at a cellular level. The first column lists the clinical signs of a non-healing wound. As growth factors, senescent cells or fibroblasts cannot be seen with the naked eye; the clinician needs clear, visible signs that can be assessed at the bedside. The second column highlights the proposed pathophysiology of that clinical observation. Column three and four suggest the clinical actions that need to be taken and the effects of these actions. The final column is for clinical outcomes, which are objective and measurable.\(^{22}\)

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<table>
<thead>
<tr>
<th>CLINICAL OBSERVATIONS</th>
<th>PROPOSED PATHOPHYSIOLOGY</th>
<th>WBP CLINICAL ACTIONS</th>
<th>EFFECT OF WBP ACTIONS</th>
<th>CLINICAL OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>TISSUE NON-VIABLE OR DEFICIENT</td>
<td>Defective matrix and cell debris impair healing</td>
<td>Debridement (episodic or continuous) Autolytic, sharp surgical, enzymatic, mechanical biological agents</td>
<td>Restoration of wound base and functional extracellular matrix proteins</td>
<td>Viable wound base</td>
</tr>
<tr>
<td>INFECTION OR INFLAMMATION</td>
<td>High bacterial counts or prolonged inflammation ↑ inflammatory cytokines ↑ protease activity ↓ growth factor activity</td>
<td>Remove infected foci Topical/systemic: - antimicrobials anti-inflammatories Protease inhibition</td>
<td>Low bacterial counts or controlled inflammation: ↓ inflammatory cytokines ↓ protease activity ↑ growth factor activity</td>
<td>Bacterial balance and reduced inflammation</td>
</tr>
<tr>
<td>MOISTURE IMBALANCE</td>
<td>Dessication slows epithelial cell migration Excessive fluid causes maceration of wound margin</td>
<td>Apply moisture-balancing dressings Compression, negative pressure or other methods of removing fluid</td>
<td>Restored epithelial cell migration, desiccation avoided. Oedema, excessive fluid controlled, maceration avoided</td>
<td>Moisture balance</td>
</tr>
<tr>
<td>EDGE OF WOUND NON ADVANCING OR UNDERMINED</td>
<td>Non-migrating keratinocytes Non-responsive wound cells and abnormalities in extracellular matrix or abnormal protease activity</td>
<td>Re-assess cause or consider corrective therapies: - Debridement Skin grafts Biological agents Adjunctive therapies</td>
<td>Migrating keratinocytes and responsive wound cells. Restoration of appropriate protease profile</td>
<td>Advancing edge of wound</td>
</tr>
</tbody>
</table>

2.3.1 Tissue

Monitoring the type of tissue in a wound is the mainstay of wound assessment in clinical practice, recording the presence of necrosis, slough, granulation tissue or epithelialium. This helps predict the wounds position in the healing continuum. The presence of non-viable tissue is a significant clinical observation as it can be responsible for delayed healing. It is described as necrotic, sloughy, devitalised or dead tissue. Necrotic tissue consists of dead cells and debris, while slough or fibrinous material consists of fibrin, pus and proteinaceous material. Necrotic tissue is usually black or brown in colour and soft or liquefying in consistency. If necrotic tissue dries out, and is hard and leathery it is more commonly described as eschar. Necrotic tissue when grouped with the clinical problems of excess exudate and bacteria within dead tissue is termed necrotic burden. Slough may be creamy in appearance because of large amounts of leukocytes present. Alternatively, a tendon may be exposed, signifying wound deterioration, presenting as striated, yellow tissue. The wound may be shiny, suggesting the presence of biofilms – sophisticated coatings often resistant to antimicrobials. If granulation tissue is friable, unstable to touch and bleeds easily it may be infected. The practitioner should be able to differentiate between healthy and unhealthy tissue.

The surface or the texture of tissue can yield useful clues, for example if granulation tissue is fleshy and exuberant, it may be hyper granulating (overgranulating) and thus stuck in the proliferative stage of healing. It is suggested that healthy granulation tissue has rosettes on the surface. Hyper granulating tissue is thought to arise from an extended inflammatory response. There is of course a danger that tissue could be treated as hyper granulation when it is in fact a carcinoma.

If concerned staff should refer the patient to the medical staff responsible for the patients care.

### Table 3. Characteristics of Healthy and Unhealthy Granulating Tissue, Source: Flanagan (1996)

<table>
<thead>
<tr>
<th>Healthy Granulation Tissue</th>
<th>Unhealthy granulation tissue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bright red</td>
<td>Dark red/bluish discolouration or very pale</td>
</tr>
<tr>
<td>Moist</td>
<td>Dehydrated</td>
</tr>
<tr>
<td>Shiny surface</td>
<td>Dull surface</td>
</tr>
<tr>
<td>Does not bleed easily</td>
<td>Bleeds easily (friable)</td>
</tr>
<tr>
<td>Rapid proliferation</td>
<td>Slow growth</td>
</tr>
</tbody>
</table>

2.3.2 Infection

All wounds contain micro-organisms, yet the majority are not infected. Infection in a wound causes pain and discomfort, delays healing and can be life threatening.\textsuperscript{36} The European Wound Management Association Algorithm illustrated in Figure 1 illustrates the different stages of wound infection. The spectrum of interaction between the microbial community and host may gradually reach a point at which wound healing process is impaired or localised detrimental host effects are initiated.\textsuperscript{37} Bacteria involvement in wounds can be divided into four categories:

- Contamination
- Colonisation
- Critical colonisation
- Wound infection.

Wound contamination is the presence of non-multiplying bacteria in a wound.\textsuperscript{38} Wound colonisation is the presence of replicating microorganisms adhering to the wound without a host reaction. If mixtures of potential pathogens are multiplying, this may lead to a delay in wound healing and the critical colonisation stage is reached.\textsuperscript{39} Unsuppressed, the natural progression from this stage is to wound infection. This is when the sum of the bacterial load and the virulence factors the bacteria produce is greater than the hosts immune defences, resulting in harm to the host.\textsuperscript{40}

Biofilms are communities of microbial cells, attached to surfaces and encased in a slime. Research has shown that biofilms may be totally unperturbed by activated macrophages, neutrophils, antibodies, complemented or other host defences.\textsuperscript{41} This offers protection against phagocytosis, antibiotics and antimicrobial agents.\textsuperscript{42}

Microbial involvement in delayed healing must be suspected when other causes have been eliminated.\textsuperscript{36, 47, 48} Antimicrobials are agents that either kill or inhibit the growth and division of micro-organisms.\textsuperscript{49, 50} They include antibiotics (which act on specific cellular target sites), antiseptics, disinfectants and other agents (which act on multiple cellular target sites).\textsuperscript{51} Chronic wounds do not always display the classic signs of infection; therefore other criteria need to be taken into account. (Table 4)

\textsuperscript{40} Kingsley A (2001) A proactive approach to wound infection. Nurs Stand 15 (30): 50-8
\textsuperscript{44} E WMA (2005) Position Document: Identifying criteria for wound infection
\textsuperscript{47} Rhoads DD (2008) Biofilms in wounds: management strategies. JWC Vol 17 No11 Nov pg 502-507
\textsuperscript{48} Wolcott R D et al (2010) healing and healing rates of chronic wounds in the age of molecular pathogen diagnostics. JWC Vol 19 No 7 pg 272-281
\textsuperscript{49} Cooper R, Jenkins L, Rowlands R. (2011) Inhibition of biofilms through the use of manuka honey. Wounds Uk Vol 7 No 1 pg 24-32
\textsuperscript{50} Butcher M (2011) Introducing a new paradigm for bioburden management. JWC/BSN supplement May. Pg 4-9
**Figure 1 EWMA Algorithm for Managing Wound Infection**

**Stage 1:** Few subtle signs of infection (some odour, pain or exudate)
Healing progressing normally

**Stage 2:** Increasing signs of infection (increasing odour, pain or exudate)
Healing no longer progressing normally

**Stage 3:** Overt signs of local infection (discharge of pus with swelling, pain, erythema and local warmth)
Evidence of surrounding tissue involvement; wound appears unhealthy or deteriorating (cellulitis, lymphangitis or gangrene)

**Stage 4:** Overt signs of focal infection and signs of systemic infection (pyrexia and raised white blood cell count)
Possible evidence of surrounding tissue involvement, which may lead to sepsis and organ failure and can be life threatening

**Signs of Infection**

- No signs other than healing progress altered
- Stages 1 & 2 - signs limited to wound only
- Stage 3 - spreading local sepsis
- Stage 4 - systemic signs

- Are other risk factors present, eg immune-compromise or malignancy?

- Select topical antimicrobial (box, bottom left)

- Consider combination therapy. Drain any local collections

- Start broad-spectrum systemic antibiotics while awaiting culture results

- If systemic signs only, look outside wound for source of infection

- Overt signs of infection eliminated

- Good clinical response

- Complete course of antibiotics. Reassess wound and patient

- Adjust antibiotic selection according to causative agent, sensitivity and patient preference

- Overt signs of infection not eliminated

- Poor clinical response

- Consider adding antibiotic

- Reassess patient and wound

- Select alternative antimicrobial agent

- Stop antimicrobial therapy. Monitor wound progress. Continue managing wound according to local protocol. Reconsider antimicrobial treatment if wound or patient status changes adversely.

**Factors to consider when selecting antimicrobials**

<table>
<thead>
<tr>
<th>Agent</th>
<th>Dressing</th>
</tr>
</thead>
<tbody>
<tr>
<td>• specificity</td>
<td>• absorbency</td>
</tr>
<tr>
<td>• efficacy</td>
<td>• conformability</td>
</tr>
<tr>
<td>• cytotoxicity</td>
<td>• odour management</td>
</tr>
<tr>
<td>• allergenicity</td>
<td>• pain management</td>
</tr>
</tbody>
</table>

Stop antimicrobial therapy. Monitor wound progress. Continue managing wound according to local protocol. Reconsider antimicrobial treatment if wound or patient status changes adversely.
When bacteria proliferate they form micro colonies that become attached to the wound bed and secrete glycocalyx or biofilms that help to protect the microorganism from antimicrobial agents and can delay healing.  

The diagnosis of infection is primarily a clinical skill based on careful history taking and clinical observation, with microbiological data used to supplement the clinical diagnosis. Quantification of bacteria by wound biopsy has been considered the gold standard, but surface sampling cost less and is easier to carry out.  

The European Wound Management Association Algorithm for Managing Wound Infection as illustrated in Figure 1 should be used to assist in clinical decision making regarding the diagnosis and management of suspected infection.

Wound cleansing is an important factor in reducing bacterial burden. Organisms are physically removed by irrigation with saline. Increasing the frequency of dressing changes may also be useful particularly as infected wounds often produce copious amounts of exudate, which may promote bacterial growth causing further tissue breakdown and maceration of the surrounding skin. There is clearly a need to link the I element of WBP to the M element for intervention to be successful.

- MRSA

MRSA stands for meticillin-resistant Staphylococcus aureus. It is sometimes known as a super bug. There are various subtypes (strains) of S. aureus and some strains are classed as MRSA. MRSA strains are very similar to any other strain of S. aureus. That is, some healthy people are carriers and some people develop the types of infections described above.

Most S. aureus infections can be treated with commonly used antibiotics. However MRSA infections are resistant to an antibiotic called meticillin and also to many other types of antibiotics. MRSA strains of bacteria are no more aggressive or infectious than other strains of S. aureus. However, infections are much more difficult to treat because many antibiotics do not work against MRSA. Infections with MRSA can sometimes become more severe than they may otherwise have been if the cause of the MRSA infection is not

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diagnosed early and antibiotics that are not effective are given at first. For this reason it is vital that all MRSA positive wounds are referred to either Tissue Viability, Leg Ulcer Services or Podiatry as appropriate within 72 hours of diagnosis.

Antibacterial strategy

The decision of whether to use antibiotics or antimicrobial products is a complex matter that must be based on the clinical findings of an experienced clinician. Figure 1 provides EWMA guidance on this matter. Ideally systemic antibiotics are not recommended for wounds that only show signs of local infection. Topical antiseptic agents whether antibiotic or antiseptics delivered from a sustained-release dressing formulation therefore represent the first line treatment, as they provide a high antimicrobial concentration at the site of infection. Some iodine and silver preparations have bactericidal effects even against multiple resistant organisms such as MRSA. Topical antiseptics have the additional advantage that they do not interfere with the remainder of the protective bacterial flora in other parts of the body and are also less likely to produce an allergic reaction.

In the case of biofilms the mainstay is frequent removal of the wound surface either with sharp or surgical debridement. At present the effective treatment of medical biofilms is its physical removal. The early biofilm that re-emerges after debridement needs to be suppressed with multiple strategies. This will include wound cleansers, topical antimicrobials and advanced primary dressings. Since biofilms adapt to selective stresses a rotating regime of selective antiseptics such as silver or iodine is recommended. Lack of a noticeable healing response within 2 weeks may necessitate the use of other topical or systemic agents. Given the evidence that improvements in wound healing have previously been associated with the elimination of malodour-causing anaerobes and that mixed anaerobes appear to play some synergistic role in preventing wound healing, the use of a metronidazole gel may then be considered under the instruction of the TVS.

Topical antimicrobials are most appropriate when used to decrease the bacterial burden in chronic wounds with active but localised infection. They are not solely suitable for highly infected wounds with soft tissue invasion or systemic sepsis and should not be used as a substitute for debridement or systemic antibiotics. Increased antimicrobial resistance means these agents should not be used for an extended period of time and should be followed by an appropriate dressing once the bacterial burden has been reduced. Where infection has extended beyond the level that can be managed by local therapy, systemic antibiotics should be used in conjunction with antimicrobial products.

63 Wolcott R D. (2009) Regular debridement is the main tool for maintaining a healthy wound bed in most chronic wounds. JWC Vol 18 No2 pg 54-56
2.3.3 Moisture

Exudate.
Exudate contains a variety of substances including water, electrolytes, nutrients, inflammatory mediators, white cells, protein-digesting enzymes (eg matrix metalloproteinases – MMPs), growth factors and waste products. In the healing wound exudate appears to promote healing in a number of ways, including cell proliferation. MMPs which breakdown the cell-supporting matrix, are present mainly in inactive form. In wounds not healing (Chronic wounds) exudate appears to have the opposite effects. The exudate contains elevated levels of inflammatory mediators and activated MMPs. One of the most significant challenges faced by nurses is the efficient and cost effective management of excessive wound exudates which causes extreme distress and negatively impacts on patients and carers quality of life. The goal of effective wound management is to remove excess moisture, debris and chemicals from the wound, while maintaining the ideal moisture balance to allow cell migration and ultimately wound healing. Poor exudate management can either cause the wound bed to become too dry or too wet, the resultant imbalance of moisture will cause tissue damage. There are no validated precise measurements for assessing exudate, so for progress of a wound to be monitored it is preferable that the same nurse reassesses a wound in order to aid comparison with serial assessments. Colour and consistence are considered in Table 5 with some guidance on causes and how.

There are three main methods of managing exudate:

1. Use of absorbant dressings or dressing which allow evaporation of moisture.
2. Counter pressure through compression
3. Drainage systems, either wound management systems or topical negative pressure (TNP)

2.3.4 Edges

In WBP, E stands for edges, which are non-advancing or undermining. When wound edges fail to migrate or undermining is present, the clinician needs to reassess the cause and intervene using the TIME table. Epidermal edges that are failing to advance over time towards closure are perhaps the clearest sign of all that a wound is failing to heal. Wound measurement provides baseline information while continuous measurement helps to predict healing and aids monitoring of treatment efficacy and evaluation. Wounds should be re-measured every four weeks. If the margin is undermined, this may be a sign of critical colonisation or infection. The use of cytotoxic agents and corticosteroids can totally mask all signs of local or systemic infection. At a cellular level, lack of epidermal migration could be owing to non-responsive wound cells and abnormalities in protease activity, which degrade extra cellular matrix as soon as it is formed.

<table>
<thead>
<tr>
<th>Colour</th>
<th>Consistency</th>
<th>Type of wound</th>
<th>Probable cause</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear/straw colour</td>
<td>Watery</td>
<td>Leg ulcer</td>
<td>Oedema/lymph oedema (sudden increase in exudate may indicate infection)</td>
<td>Compression or elevation of the limb</td>
</tr>
<tr>
<td>Clear/straw colour</td>
<td>Watery</td>
<td>Surgical</td>
<td>Heart failure/oedema caused by fluid overload</td>
<td>Diuretics</td>
</tr>
<tr>
<td>Clear/straw colour</td>
<td>Serous fluid</td>
<td>Acute: traumatic or surgical</td>
<td>Normal inflammatory exudate</td>
<td>Dressings of appropriate absorbency</td>
</tr>
<tr>
<td>Blood stained</td>
<td>Serous fluid</td>
<td>Acute: traumatic or surgical</td>
<td>Slight bleeding from vessel in wound bed</td>
<td>Localised pressure or use of a haemostatic dressing</td>
</tr>
<tr>
<td>Blood</td>
<td>Viscous</td>
<td>Surgical</td>
<td>Bleeding vessel postoperative</td>
<td>Excessive bleeding should be referred back to surgeon</td>
</tr>
<tr>
<td>Blood</td>
<td>Viscous</td>
<td>Any</td>
<td>Trauma from dressing</td>
<td>Traumatic bleeding can be stopped with local pressure or haemostatic dressing. Re-consider dressing choice</td>
</tr>
<tr>
<td>Yellow</td>
<td>Slightly viscous (may appear purulent, may contain fatty globules, usually profuse)</td>
<td>Any sloughy wound</td>
<td>Autolytic debridement of non-viable tissue</td>
<td>Appropriate dressing or drainage system</td>
</tr>
<tr>
<td>Yellow or brown</td>
<td>Purulent or haemopurulent</td>
<td>Abscess or infected wound</td>
<td>Bacteria</td>
<td>Systemic antibiotics, possibly topical antiseptics and appropriate dressing</td>
</tr>
<tr>
<td>Green</td>
<td>Very viscous, mucus-like</td>
<td>Leg ulcer, burn wound</td>
<td>Bacteria especially <em>Pseudomonas aeruginosa</em></td>
<td>Topical antiseptic (systemic antibiotic if cellulitis present)</td>
</tr>
<tr>
<td>Clear green</td>
<td>Watery or slightly viscous</td>
<td>Upper abdominal wound</td>
<td>Fistula to upper intestine</td>
<td>Refer back to surgeon</td>
</tr>
<tr>
<td>Brown, faecal</td>
<td>Viscous</td>
<td>Lower abdominal wound</td>
<td>Fistula to lower bowel</td>
<td>Refer back to surgeon</td>
</tr>
<tr>
<td>Grey or Blue</td>
<td>Viscous or watery</td>
<td>Any</td>
<td>Related to silver containing dressings</td>
<td>Avoid prolonged used of silver</td>
</tr>
</tbody>
</table>

3 FACTORS AFFECTING THE HEALING PROCESS

3.1 Factors that can delay healing

Many factors are thought to delay healing. Table 6 lists the commonest. Figure 4 illustrates how such factors can be grouped into intrinsic and extrinsic factors and can occur alongside each other. Thus some wounds can be exposed to multiple factors, which impede its progress at any one time.

Table 6
Conditions and interventions known to delay wound healing

- Use of systemic steroids
- Use of immunosuppressive drugs
- Use of non-steroidal anti-inflammatory
- Rheumatoid arthritis
- Other autoimmune diseases such as systemic lupus, uncontrolled vasculitis or pyoderma gangrenosum.
- Inadequate or poor nutrition
- Diabetes
- Smoking
- Cachexia

3.2 Diet

Adequate nutrition is essential to promote wound healing. A diet rich in carbohydrates, high in protein and moderate fat is essential. Vitamins and trace element supplements should also be provided to all patients with established wounds where deficiency is known particularly vitamins C, E and zinc. However the decision to provide trace element supplements should be done following a thorough nutritional assessment.

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88 Silhi, N. ((1998) Diabetes and wound healing, Jr of Wound Care; 7: 1, 47-51.
90 Whiteford L (2003) nicotine, CO and HCN: the detrimental effects of smoking on wound healing. Wound Care Dec S22-S25
91 Kean J (2010) The effects of smoking on the wound healing process. JWC Vol 19 No 1 pg 5-8
94 Mandal A (2006) Do malnutrition and nutritional supplementation have an effect on the wound healing process. JWC Vol 15 No 6 254 -257
If Nursing Staff are uncertain in specific situations they should discuss their concerns regarding the need to provide supplements with either the Dietician or Medical Staff responsible for the patient.

### 3.2.1. Identification of Patients Risk

Nutritional assessment should be carried out in line with the MUST Nutritional Assessment Form. (Appendix 1)

### 3.3 Pain

Unresolved pain negatively affects wound healing and impacts on quality of life. A painful chronic wound can often indicate that there is something wrong. Holistic assessment using TIME should provide indicators as to possible causes of such pain. Pain at wound dressing-related procedures can be managed by a combination of accurate assessment, suitable dressing choices and skilled wound management and individualised analgesia regimes.

An initial assessment should be carried out by an experienced clinician in partnership with clinical staff able to prescribe the appropriate medication. Every patient with a wound should have an individual pain management plan including regular ongoing assessment which should be performed each time a dressing-related procedure is carried out. Background pain in the wound and surrounding tissue, plus any new regional pain that may have developed should be assessed. The intensity should be rated, before, during and after the procedure. This should be documented in the patient notes and a care plan developed to address the pain. The level of pain should also be recorded on the wound assessment chart using a recognised pain scale as illustrated in Figure 2 and 3.
3.3.1 Using Opiates on wounds

Topical opiates act centrally and peripherally and can be alternative or concurrent forms of pain control for wounds. Opiates can be used on viable and non-viable tissue. The effective analgesia dose is low (10mgs) with analgesia occurring within a few minutes. The duration of pain relief from one dose can last up to 2 days.

The opiate should be mixed with hydrogel carrier and apply directly to the wound. A foam dressing can be used to secure the hydrogel. The effective dose concentration is 10mgs morphine opiate to 1gram hydrogel. Application should be daily or ‘as required’ basis.

There are minimum adverse effects however it is preferable to keep certain wounds such as ischaemic gangrene dry and thus the use of hydrogels would be contraindicated.

Figure 2 Wong-Baker faces Scale

Figure 3 Numerical pain rating scale

0-10 Numeric Rating Scale


Adverse Local Conditions At the Wound Site

- Poor Blood Supply
- Hypoxia
- Necrotic Tissue and Foreign Bodies
- Cardiovascular Disorders
- Anaemia
- General Pathophysiological Factors
- Intrinsic
  - Hypoxia
  - Necrotic Tissue and Foreign Bodies
  - Cardiovascular Disorders
  - Anaemia
- Extrinsic
  - Malnutrition
  - Decreased Resistance To Infection
- Drug Therapy
- Adverse Effects Of Other Therapies
  - Chemotherapy
  - Radiation Therapy

Factors that can Delay Healing

- Hypoxia
- Necrotic Tissue and Foreign Bodies
- Cardiovascular Disorders
- Anaemia
- General Pathophysiological Factors
- Poor Blood Supply
- Fall in Wound Temperature
- Wound Infection
- Dehydration
- Inaccurate Wound Assessment (see Article II)
- Careless Wound Dressing Techniques
- Inappropriate Wound Management By Nurses
- Inappropriate Application Of Topical Agents & Primary Wound Dressing Products
- Negative attitudes of Staff to Treatment and Healing
- Drug Therapy
- Adverse Effects Of Other Therapies
  - Chemotherapy
  - Radiation Therapy

Figure 4 – Factors causing delayed wound healing

TVS Guidelines: Wound Management Sept 2011
4. **CLASIFICATION OF WOUND TISSUE**

The Wound Healing Stage Classification as described below is recommended as it facilitates simple and consistent verbal and written description of the appearance of the wound bed. This is a different classification to the pressure ulcer classification. (See Pressure Ulcer Guidelines)

4.1 **Epithelialising Tissue**

**Appearance.**
- Translucent appearance, usually whitish-pink
- Small islands of epithelial cells may be visible originating from the wound margin or remnants of hair follicles, sebaceous or sweat glands
- The epithelial cells rapidly multiply and migrate across granulation tissue, until they form a continuous layer. At this stage the wound will have smooth edges

4.2 **Granulating Tissue**

**Appearance:**
- Granular appearance, slightly uneven
- Pinky-red colour (well vascularised)
- Healthy granulating tissue does not bleed easily
- Granulating tissue which is dark in colour may signal ischaemia or infection

4.3 **Sloughy Tissue**

**Appearance:**
- Yellow/white hue
- May be dry or slimy
- Adherent to wound bed (Slough forms when dead cells accumulate in the exudate, yellow colour due to the presence of a large number of leucocytes)

4.4 **Infected Tissue**

**Appearance of Acute Wound Infection.**
- Inflammation
- Localised heat and swelling around wound edge
- Yellow/green pus
- Offensive odour
- Presence of green slough in wound
- Pain
- Increased exudate
- Dark in colour

The presence of bacteria does not always indicate the presence of infection. Pus, odour and slough are not always present in the infected wound. Systemic effects and a raised body temperature may be present. It is thus recommended that temperature, pulse, BP and respiratory observations are taken and recorded if there is suspicion of wound infections.

---

4.5 **Necrotic Tissue**

Appearance:
- Black/Brown leathery appearance
- Hard skin-like surface below which is a cavity full of dead tissue
- Depth will not be known until the dead tissue is removed

4.6 **Malignant (Fungating) Tissue**

Appearance:
- Raised irregular islands of malignant tissue
- Often bleeds on contact
- Characterised by very offensive odour due to colonisation by bacteria

It is acknowledged that no classification is likely to be wholly exhaustive; with this in mind it is important to complete a full assessment on a wound as directed on The Wound Assessment Form (WAF) (Figure 5). If the wound is a pressure sore, it is also necessary to state the grade (see Pressure Ulcer Guidelines)

5. **WOUND ASSESSMENT.**

Wounds need regular assessed if appropriate care is to be provided. Wound care products are designed to suit a wound at a particular stage of healing. As the wound changes, dressing type may also need to be changed. It is important to use a classification that all staff understand when assessing, planning and evaluating wound care. This facilitates monitoring the progress and selecting appropriate wound care products.

Wounds should be assessed using the principles of WBP and application of the acronym TIME illustrated in Table 2. Tissue observed should be classified according to the Wound Tissue Classification described in Section 4. The Wound Assessment Form (Figure 5) which incorporates the principles of WBP (TIME) should be completed at every dressing change as documentation is as essential as the assessment itself.

The use of the WAF and a comprehensive care plan ensures that registered nurses are fulfilling their obligations under the NMC Standards for Records and Record Keeping. Failure to keep such records exposes the Nurse and the Trust to the risk of litigation. It is crucial that wound assessment forms and care plans are completed on all patients who have wounds. These records must be clearly written, signed and regularly updated. An entry must be made on the WAF following every dressing change.

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131 Briggs M (1996) Documenting Wound Management JWC Vol 5 No 5 Pg 229 - 231
### Figure 5 Wound Assessment Form (WAF)

#### 1. INITIAL ASSESSMENT:

<table>
<thead>
<tr>
<th>Patient’s Name:</th>
<th>G.P Details:</th>
<th>D.O.B:</th>
<th>NHS. No:</th>
</tr>
</thead>
</table>

Draw Wound Profile (so top of wound is towards patient's head, include dimensions in cm).

#### 2. SOURCE OF WOUND: Tick

<table>
<thead>
<tr>
<th>Surgical ( )</th>
<th>Leg Ulcer ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traumatic ( )</td>
<td>Burn ( )</td>
</tr>
<tr>
<td>Pressure Ulcer ( )</td>
<td>Fungating ( )</td>
</tr>
</tbody>
</table>

#### 3. INDIVIDUAL PATIENT ASSESSMENT

- **Any Delaying Factor?**
- **Interventions**

<table>
<thead>
<tr>
<th>DATE:</th>
<th>TIME:</th>
<th>DATE:</th>
<th>TIME:</th>
<th>DATE:</th>
<th>TIME:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 4. TISSUE:

- Appearance, approximate % of wound surface which meets the description

<table>
<thead>
<tr>
<th>Intact Incision line</th>
<th>Epithelialising</th>
<th>Granulating</th>
<th>Over granulating</th>
<th>Sloughy</th>
<th>Necrotic</th>
<th>Fungating</th>
<th>Exposed bone/tendon</th>
<th>Oedema</th>
</tr>
</thead>
</table>

#### 5. INFECTION:

- EWMA Clinical stage of Infection (1, 2, 3, 4)
- Peri wound inflammation / warmth
- Pyrexia
- Bleeds easily
- Odour Y = Yes N = No
- Pain score 1-10 (0 = no pain 10 = severe pain)
- Wound swab taken, tick for yes

#### 6. MOISTURE: Exudate

- A: Serous, B: Haemoserous, C: Purulent/ Pus
- L: Low, M: Moderate, H: Heavy

#### 7. EDGES:

- Non advancing /undermining

<table>
<thead>
<tr>
<th>Maximum Length, (head to toe)</th>
<th>Maximum Width. (right to left)</th>
<th>Surface Area (cm²)</th>
<th>Undermining</th>
<th>Cavity: Depth cm</th>
<th>Pressure Ulcer: Insert Grade 1,2,3,4</th>
</tr>
</thead>
</table>

Insert generic dressing code number

**Staff Signature**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Semi-permeable</td>
<td>5. Alginate</td>
<td>8. Hydrofibre</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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23
6 WOUND CARE

A holistic assessment of the patient is essential before choosing a wound dressing.\textsuperscript{134} A care plan should be drawn up using the information gathered in the WAF and directed by the TIME WBP Clinical Actions illustrated in the Timetable. (Table 2)

Many wounds will be a combination of some of the already mentioned classifications identified in section 4. When this occurs each area would require different management however the most serious state should be treated first.

6.1 Wounds Healing by First Intention

6.1.1 Uncomplicated Wound

EXAMPLES: Post surgical wounds/clip wounds. Traumatic wound sutured/cliped/glued

PROBLEM: Potential risk of wound breakdown

GOALS: To prevent infection and promote first intention healing by providing an optimal local environment

T: Promote viable granulation from the wound base
I: Reduce inflammation and maintain a bacterial balance
M: Achieve moisture balance
E: Measured advancing edges and base of wound.

CARE PLAN: Non adherent (N/A) dressing\textsuperscript{135} Analgesia to control pain. Should not require cleaning if exudate is a problem it can be removed by irrigating with sterile sodium chloride 0.9%

Dressing: Wounds can be left exposed after 48 hours or covered with a semi-permeable film dressing.\textsuperscript{136}

6.2 Wounds Healing by Second Intention \textsuperscript{137}

6.2.1 Epithelialising Wound (Clean and Flat)

EXAMPLES: Any clean wound that has filled in with granulation tissue or superficial wounds where granulation tissue has been replaced e.g. skin donor sites, superficial burn, and granulated pressure ulcer.

PROBLEM: Break in normal integument. Pain from exposed nerve endings

GOALS: T: Promote epithelialisation
I: Reduce inflammation and maintain a bacterial balance.
M: Achieve moisture balance
E: Measured advancing edges and base of wound.

CARE PLAN: Analgesia to control pain. Does not require cleaning if exudate is minimal. If cleaning is required use sterile sodium chloride 0.9%

Dressing: Minimal exudate $\rightarrow$ Semi-permeable film

Low/moderate $\rightarrow$ N/A Dressing

Moderate $\rightarrow$ Hydrocolloid sheet


\textsuperscript{135} NICE (April 2006) Surgical site infection: Prevention and treatment of surgical site infection.


\textsuperscript{137} Thomas S (1997) A Guide to dressing selection. JWC. Nov Vol 6 No 10 Pg 479-482
6.2.2 Granulating Wounds

**EXAMPLES:** Clean cavity pressure ulcers

**PROBLEMS:** Potential of over closure of epithelial edges before the cavity has filled with new granulation and vascular tissue.

**GOALS:**
- **T:** Promote viable granulation from the wound base
- **I:** Reduce inflammation and maintain a bacterial balance.
- **M:** Achieve moisture balance
- **E:** Prevent closure of edges before wound base has healed. Contemplate therapies which accelerate healing from the base. Measured advancing edges and base of wound.

**CARE PLAN:** Clean with sterile sodium chloride 0.9% if required.
Dressing:
- **Minimal exudate** → Hydrocolloid paste, cover with adhesive non-adherant dressing
- **Moderate exudate** → Alginate rope or Hydrocolloid fibre. Cover with adhesive non-adherant dressing
- **High exudate** → High absorbeny Alginate or Hydrocolloid Fibre and a Foam or Hydrocolloid Sheet.
- **TNP** will manage exudate and accelerate healing from the base of the wound.

6.2.3 Sloughy Wounds

**EXAMPLES:** Common in chronic wounds such as pressure ulcers, leg ulcers and abscess cavities.

**PROBLEM:** Excessive exudate or odour due to bacteria and necrotic tissue.
Slough and necrotic tissue may encourage growth of bacteria and this may delay healing.

**GOAL:**
- **T:** Debridement of sloughy and necrotic tissue
- **I:** Reduce inflammation and maintain a bacterial balance
- **M:** Achieve moisture balance
- **E:** Prevent closure of edges before the base has healed, contemplate therapies which accelerate healing from the base of wound. Measured advancing edges and base of wound

**CARE PLAN:**
1) If wound infection is suspected, take a swab and send for microscopy and culture. Inform Medical Staff and record vital signs.
2) Clean with sterile sodium chloride 0.9%

Dressing:
- (Non cavity sloughy)
  - **Minimal exudate** → Hydrocolloid sheet
  - **Moderate exudate** → Hydrocolloid Fibre Dressing and N/A pad
  - **High Exudate** → Alginate and Foam Dressing
  - Versajet debridement can be performed by the TVS.

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139 NICE (2006) Surgical site infection: Prevention and treatment of surgical site infection draft doc
Larvae therapy can expedite the removal of slough from wounds on advice from the TVS. Antibacterial dressing can be used if infection is suspected. TNP on advice from TVS will contain exudate, accelerate healing and remove bacteria from the wound bed.

If concerned that a wound may be clinically infected await results before using occlusive dressings, however once antibiotic therapy is established and infection is contained, occlusive dressings can be used.

6.2.4 Infected wounds:

EXAMPLES: Pressure ulcers or surgical wounds, which have become red and inflamed with accompanying cellulitis.

PROBLEMS: Oedema, wound pain, exudate, pyrexia and odour

GOALS: T: Debridement of sloughy and necrotic tissue
I: Reduce inflammation and control bacterial balance.
M: Achieve moisture balance
E: Measured advancing edges and base of wound

Identify the organism causing the infection and eradicate with systemic antibiotics. Promote healing by providing an optimum local environment.

CARE PLAN: Clean with sterile sodium chloride 0.9% or povidone iodine solution if an antiseptic is required. Stellicept wash can be used in cases of MRSA.

Dressing: Minimal exudate → Hydrogel held insitu with N/A Pad.
Moderate exudate → Hydrocolloid Fibre held insitu with N/A pad.
High Exudate Alginate or Hydrocolloid Fibre held insitu with Foam Dressing.

TNP on advice from TVS will contain exudate, accelerate healing and remove bacteria from the wound bed.

Antimicrobial/ dressings can also be used, however if appropriate systemic antibiotics are prescribed they may not be necessary. It is not appropriate to use Mupirocin on wounds which are known to be infected with MRSA. This product is for use on the nose only.

Do not occlude clinically infected wounds until antibiotic therapy is established and infection controlled.

Change dressings daily while infected or more frequently if strike through occurs. If malodour is a problem see section 6.3

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144 Visu Dr, Kirkham A (2009) Infection Control Services WEPCT & PAHT
6.2.5 Necrotic Wounds

EXAMPLES: Pressure Ulcers covered with hard necrotic tissue.
(Eschar)

PROBLEM: Extensive cavity wound is hidden beneath the necrotic tissue.

GOALS:

<table>
<thead>
<tr>
<th>T</th>
<th>Debridement of necrotic tissue</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Reduce inflammation and maintain a bacterial balance.</td>
</tr>
<tr>
<td>M</td>
<td>Achieve moisture balance</td>
</tr>
<tr>
<td>E</td>
<td>Measured advancing edges and base of wound</td>
</tr>
</tbody>
</table>

CARE PLAN:

- Surgical debridement:
  - Sharp debridement is the quickest means of removing eschar. Nurses wishing to pursue this form of management must be clinically competent to do so. 
  - Versajet debridement can be performed on soft necrotic tissue by the TVS

- Medical debridement:
  - Dressings: Hard dry eschar will need to be hydrated if medical debridement is to occur.
  - Hydrocolloid sheets will trap the body's humidity and facilitate debridement
  - Hydrogels will actively hydrate eschar

- Bio Surgical debridement:
  - Larvae therapy will effectively and efficiently debride slough and soft eschar.

6.3 Malignant/Fungating Wounds

EXAMPLES: External tumour wounds

PROBLEM: Odour, incipient bleeding, pain, exudate

GOAL:

<table>
<thead>
<tr>
<th>T</th>
<th>Medical debridement of sloughy and necrotic tissue, if indicated.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Reduce inflammation and attempt to maintain a bacterial balance.</td>
</tr>
<tr>
<td>M</td>
<td>Achieve moisture balance</td>
</tr>
<tr>
<td>E</td>
<td>Awareness of advancing wound edges and minimising such advancement where possible through control of I and M.</td>
</tr>
</tbody>
</table>

---

CARE PLAN:

Local support, comfort and pain reduction. Control of bleeding and odour are priorities as healing cannot be a goal. Early identification of infection and reduction of odour will considerably improve the quality of life for the patient. Understanding impact of the wound on the individual quality of life and helping to ameliorate both physical and psychological symptoms.

Odour Control

Establish the cause of the odour by sending a wound swab for microscopy and culture. Clean with sterile sodium chloride 0.9% if required. Dressing: Dress according to the classification of the wound. Additional management: Antibacterial dressing, which includes charcoal or silver can help to reduce odour. Metronidazole gel can be used following a doctor’s prescription.

Incipient Bleeding

Kalostat, an alginate dressing is a licensed haemostat and can help control bleeding.

Relief and Comfort

Foam sheets can be cut to fit a protruding wound and thus provide comfort and support. Small amounts of hydrogel can minimise adherence in dry wounds. Good provision of analgesia is crucial, particularly prior to dressing changes.

Exudate

Foam sheets and high absorbency alginates should be used to control exudate. VAC therapy is contraindicated in malignant wounds.

6.4 Criteria for Removing/Changing Dressings

The wound should be assessed and the appropriate dressing applied in the following events.

- wet contamination from external sources
- strike through (when exudate has leaked through the dressing)
- offensive smell
- pain or prolonged tenderness at wound site
- unexplained pyrexia
- inflammation at site
- removal of drain/clips/sutures
- allergic reactions.

References:

150 Piggin C, Jones V (2009) Malignant fungating wounds: and analysis of the lived experience. JWC Vol 18 No 2 pg 57-64
The frequency of the dressing change will be influenced by the condition of the wound and dressing product used. (see manufacturers instructions) Frequent unnecessary changes should be avoided, as this will reduce the temperature and humidity of the wound. It may also cause trauma to newly formed cells and may permit colonisation of the wound by microorganisms. Dressing changes should be concluded promptly, adhering the aseptic principles as necessary.

6.5 **How To Take A Swab For Culture**

Wound swabs should be taken when the wound presents with the signs of infection. (Figure 1 and Table 4)

- Cleanse the wound bed well with saline, bacteria are not washed away during cleansing and thus can still be identified;
- Do not swab eschar, exudate or pus;
- Select the cleanest area of the wound;
- First, dip the clean swab in the swab medium or sterile saline.
- Firmly press and rotate the swab in the cleanest area of the wound area, move the swab across the area in a ziz-zag motion from the centre to the outside.
- Include tunnelling if present;
- If pus is present take a separate sample of the fluid in a pot.

6.6 **How to Treat Over-granulating Tissue**

Hypergranulation is normally transient resolving itself in time as the granulation tissue contracts. Use of non-traumatic dressings to reduce hypergranulation should be the first choice. If overgranulation persists nurses should discuss the situation with the TVS or the responsible physician to exclude undiagnosed malignancy as the underlying cause. The reduction of hypergranulation/over-granulation may be achieved through the use of the following:

**Foam Dressing; Lyofoam**

Application of light pressure to the wound bed; if not contra-indicated is of benefit.

**Silver Nitrate;** (Sticks or .025% compresses); can be used however it is not a first line measure. Morison (1991) cited in Hampton S and Collins found silver nitrate to be caustic with potential to initiate methaemoglobinemia and metabolic disturbance. Silver nitrate is therefore a treatment for very short-term use only.

**Corticosteroid cream** such as Elocon or Betnovate can be used under medical supervision as a last resort and for very short-term use only. It should also be remembered that topical steroid preparations are not licenced for the treatment of overgranulation and therefore responsibility for its use lies with the prescriber.

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160 Community & primary Care Infection Control Manual. (2006) EFPCT Ref GUI00062/HP
161 Microbiology advice from PAHT
166 Young T (1997) Use of a hydrocolloid in over granulation. JWC Vol 6 No5 pg216-
**Haelan tape;** which contains the steroid Fludrocortisone within it has been reported as suitable for use for over granulation.¹⁶⁹ ¹⁷⁰

NURSING CARE PLAN

<table>
<thead>
<tr>
<th>DATE</th>
<th>PATIENT PROBLEM/NEED</th>
<th>RGN Signature</th>
<th>Review Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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</tr>
</tbody>
</table>

GOAL

NURSING ACTION/INSTRUCTION

CLEANING SOLUTION:

PRIMARY DRESSING:

SECONDARY DRESSING:

FREQUENCY OF DRESSING CHANGE:

OTHER INSTRUCTIONS:

The use of the WAF and a comprehensive care plan ensures that registered nurses are fulfilling their obligations under the NMC Code\textsuperscript{171}. Failure to keep good records exposes the Nurse and the Trust to the risk of litigation. It is crucial that wound assessment forms and care plans are completed on all patients who have wounds. These records must be clearly written, signed, dated and timed and are regularly updated. The WAF must be completed after every dressing change.

\textsuperscript{171} NMC (2008) The Code, Standards of conduct, performance and ethics for nurses and midwives

31
The purpose of wound irrigation is to help create optimum local conditions of healing. It should remove wound debris. It should be performed in an atraumatic method, so that epithelialising and granulation tissue is not damaged. The method used to do this should be based upon an assessment of the wound and the patient's general condition.

Clean epithelialising/granulating wounds do not benefit from mechanical irrigation, which removes exudate containing valuable healing factors. These wounds should be left undisturbed for as long as possible to enhance the rate of healing. Wiping may damage new granulation tissue. Chronic wounds with excess exudate may benefit from irrigation. (See section 2.3.3)

Irrigation using a syringe or by showering is often preferred providing that the pressure achieved is adequate to remove wound debris, but not damage healthy tissue.

When irrigation is not effective in removing remnants of the dressing (e.g. Hydrocolloids, Alginate) gentle wiping can be instituted. It is recommended that non-woven gauze (as supplied in dressing packs) be used in conjunction with either a gloved hand or forcep technique.

Some methods of mechanical wound cleaning can result in the redistribution of bacteria rather than an actual reduction. Care must be taken to wipe from clean areas to dirty and not visa versa.

7.1 Cleansing solutions

Sterile sodium chloride 0.9% solution is the most appropriate for irrigating wounds. When a surgical wound has separated or has been surgically opened to drain pus, then the use of tap water may be considered for wound cleansing. It is however preferable in wounds which are not contaminated with faecal or other severe contamination matter that staff use sterile saline.

A variety of antiseptic preparations are sometimes used for more complex wounds. Traditional antiseptics (e.g. Eusol, diluted Milton, hydrogen peroxide, chlorhexidine with cetrimide) are quickly rendered ineffective by body fluids and pus. The potential disadvantages of using such antiseptics should be weighed against any possible benefits before they are used. NICE guidelines advise against the use of Eusol and mercuric antiseptic on wounds. Products which contain polyhexamethylene biguanide (PHMB) have a broad range spectrum of biocidal activity with demonstrated clinical evidence to support their use. Some studies have indicated that Fungi and Yeasts are more important wound pathogens than previously reported and thus antimicrobial products must be able to target these pathogens if healing is to occur.

It is advisable to warm the cleaning solutions to body temperature just before use.

7.1.1 Sodium chloride 0.9% solution

This isotonic solution does not cause chemical damage to cells and is the preferred irrigating agent for wounds. Sodium chloride 0.9% does not require a prescription; all the other solutions do need a prescription.

7.1.2 Chlorhexidine with cetrimide

Thomlinson D (1987) To clean or not to clean, Nursing Times, Journal of Infection Control Nursing. 4 March Vol 83.5
This is available as chlorhexidine 0.15% w/v with cetrimide 0.015% w/v (sometimes known as Savlon 1 in 100) for cleaning dirty wounds. The products are easily contaminated and any remaining in a container after opening should be discarded.

7.1.3 Prontosan

Prontosan® Wound Irrigation Solution and Gel are ready to use products for cleansing, moisturising and decontamination of acute and chronic wounds. They contain unique ingredients that have a double effect on the wound bed to create a wound environment optimal for healing. Betaine a gentle effective surfactant to penetrate, clean and remove wound debris and biofilm. Polyhexanide (PHMB) a powerful antimicrobial agent that can reduce bioburden. This product is not on the Dressing Formulary and should only be prescribed on the instruction of the Tissue Viability Service.

7.1.4 Iodine

Iodine is active against a wide range of organisms including Gram-negative and Gram-positive bacteria, fungi and bacterial spores. If an antiseptic solution is required iodine is the solution of preference. Cadexomer iodine has in studies been shown to produce a marked decrease in MRSA, and it is recognised as having a role in enhancing healing of chronic wounds. However for management of MRSA Stellisept as discussed below should be used.

7.1.5 Stellisept

If a wound is colonised or infected with MRSA it can washed using Stellisept at dressing changes. The wound should subsequently be redressed using an antimicrobial dressing according to its classification and in adherence with the EWMA Algorithm as illustrated in Figure 1.

<table>
<thead>
<tr>
<th>Antimicrobial properties</th>
<th>Gram+ve</th>
<th>Gram-ve</th>
<th>Fungi</th>
<th>Endospores</th>
<th>Viruses</th>
<th>Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorhexidine</td>
<td>+++</td>
<td>++</td>
<td>+</td>
<td>0</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Honey</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>0</td>
<td>+</td>
<td>0</td>
</tr>
<tr>
<td>Iodine</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
<td>0</td>
</tr>
<tr>
<td>Maggots</td>
<td>+++</td>
<td>++</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>0</td>
</tr>
<tr>
<td>Silver</td>
<td>+++</td>
<td>+++</td>
<td>+</td>
<td>ND</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

ND = No data

References:
180 Mertz, P Davis S Brewer L (1994) Can Antimicrobials be effective without impairing healing.
182 Olivo, S. (2011) SEPT Internal communication on management of MRSA in Wounds. 3/8/11
8. WOUND BED PRODUCT INFORMATION

New dressing products are released into the healthcare market daily. It is thus recommended that staff refer to the BNF or the Wound Care Handbook for up-to-date information on products. However, information on the main generic types is provided below to facilitate learning. The Trust Dressing Formulary Guidelines should be referred to regarding selection of products for patient use.

8.1 Semi Permeable Film Dressing

Examples: C View Film dressing  
Episil Film Dressing

These films are adhesive, hypoallergenic, transparent and permeable in various degrees to moisture vapour and other gases. They are useful for low-exudate superficial wounds, which are clean, and to cover surgical wounds healing by first intention. To ensure good adhesion a 4 – 5 cm margin from the wound edge is suggested. As these dressings are semi-occlusive they should not be used with clinically infected wounds unless antibiotic therapy has been established and the infection is under control.

8.2 Hydrocolloids

Examples: Comfeel Ulcer  
Granuflex  
Duoderm Extra thin  
Hydrocolloid Fibre (Aquacel)

Suitable for moderately exuding wounds. Can help promote granulation in clean wounds. They can be used to deslough infected wounds, and to debride necrotic eschar.

The dressing should be changed when the liquidified base of the dressing is visible or by seven days. The frequency will depend on the nature of the wound. On removal of the dressing there will be a viscous, offensive yellow gel on the surface of the wound. This is quite normal and can be removed with sterile Sodium Chloride 0.9% prior to the application of the next dressing. Hydrocolloid sheets are occlusive dressings and are contra-indicated in clinically infected wounds unless antibiotic therapy is established and the infection is controlled.

Research using Hydrocolloids has demonstrated:

1. Inhibition of bacterial growth particularly pseudomonas
2. Enhanced collagen synthesis
3. Controls spread of other bacteria by acting as a barrier

Aquacel is a soft, nonwoven pad or ribbon dressing composed entirely of hydrocolloid fibres, (Sodium cellulose). It is indicated as a primary dressing for the management of light to heavily exuding wounds. It may also be used on clinically infected wounds. It should be changed when it becomes saturated with exudate or by seven days. It is 50% more absorbent than alginites. It converts to a soft coherent gel sheet, which retains its

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194 Thomas S (1996) Vapour-Permeable Film Dressings JWC. Jun Vol 5 No 6 Pg 271-274
195 Banks V. Harding K (1994) The use of two dressings for moderately exuding pressure sores. JWC 32 Vol 3 No 3 Pg 132-134
integrity during handling. It should not be cut; excess dressing should be overlapped. This dressing should only be used on the recommendation of the TVS or Team Leader.

8.3 **Alginites**

**Examples:**
- *Activheal Alginate*
- *Sorbisan*
- *Kaltostat (Sodium Calcium Alginate)*

Made from salts of alginic acid, a polysaccharide derived from seaweed. Suitable for heavily exuding sloughy and infected wounds. The dressing should be changed when “strike through” is visible and may be left for up to 3 days.

8.4 **Foam Dressings**

**Examples:**
- *Lysofoam Non Adherent*
- *Biatain Non Adherent*
- *Allevyn Gentle*
- *Biatain Adherent*
- *Allevyn Adherent*
- *Tegaderm Foam*

These products are highly absorbent polyurethane foams designed to manage moderate to heavily exuding wounds. Various sizes and shapes are available and it can remain in place for up to 5 days.

8.5 **Hydrogels**

**Examples:**
- *Activheal Gel*
- *Nugel*
- *Actiform Cool (Hydrogel sheet)*

Useful for dry/low exudate granulating wounds as it produces a moist wound environment and thus prevents wound desiccation. Also used to deslough low/medium exudating wounds. Can be used on necrotic wounds to dehydrate the eschar. A secondary dressing is needed, ideally a semi permeable film to maintain the moist wound interface.

8.6 **Dressings Containing Charcoal**

**Examples:** *Clinisorb*

Currently all odour-absorbing dressings contain a layer of activated charcoal cloth. Charcoal is a natural and efficient absorber of volatile molecules, odour and gasses. Odour is frequently caused by bacteria such as Proteus, Klebsiella, Pseudomonas, and Bacteroides. More uncommonly Clostridium welchi, the causative organisms of gas gangrene.

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201 Thomas S (1994) Low Adherence Dressings JWC Vol 3 No 1 Pg 27-30
203 Thomas S (1994) Wound Cleansing Agents JWC Oct Vol 3 No 7 Pg 325-328
204 Maund M (2008) Use of an ionic sheet hydrogel dressing on fungating wounds: two case studies. JWC Vol 17 No 2 pg 65-68
8.7 **Dressings Containing Antimicrobials**

The pathogens responsible for wound infection delay healing by destroying viable tissue cells. They also attract polymorphonucleocytes to the wound which express enzymes that destroy invading microbes and, in turn ‘digest’ viable tissue cells. While systemic antibiotic therapy is indicated for established skin infections the increase in antibiotic resistance has led to a resurgence of interest in topical antiseptics. There is growing evidence as to the effectiveness of antimicrobial dressings in limiting bacterial cell growth. However a wound does not need to be sterile to progress towards healing and the use of topical antimicrobial therapy simply to lower microbial load in the healing wound can never be justified. The decision to use an antimicrobial dressing must be underpinned by documented clinical observations. Nurses should be clear on the reasons why they have chosen such products and if in doubt refer to the TVS or their Team leader. The products identified below should only be used where wound infection is suspected. In cases of MRSA wound infection the Care Pathway as illustrated in Appendix 2 should be followed.

**Examples:** Iodoflex, Inadine, Flaminal, Aquacel Ag, Biatain Ag,

Products available such as iodine impregnated dressings provide a controlled release of iodine and are preferable to soaking gauze in iodine. Other controlled release products contain silver. These products control the build up of bacteria on a wound bed without adding a fluid burden to the wound, which increases the risk of strike through, and the subsequent need to renew dressings to maintain the antiseptic level.

8.7.1 **Honey**

**Examples:** Algivon, Actilite

Honey is an ancient treatment that is increasingly earning its place in modern wound care. Evidence suggests it compares with other dressings in terms of its antibacterial properties, ease of use and ability to promote a moist environment.

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207 Cutting K (2011) Why use topical antiseptics. JWC/The Silver debate. March pg 4-7
212 Lansdown A B (2003) Silver in Wound Care and Management. WCS Vol 1 No 3
219 McIntosh CD Thomas CE (2006) Honey versus parfintulle gras following toenail surgery. JWC; 15:3 133-136
221 Gethin G (2004) Is there enough clinical evidence to use honey to manage wounds. JWC Vol 13 No 7 275-278
8.8 **Protease Modulating Therapy (PMT)**

**Examples:** Aquacel, Cadesorb, Promogram

Promogram modulates and rebalances the chronic wound environment by:
- Binding and inactivating protease, which have a detrimental effect on wound healing when present in excessive quantities in chronic wounds.
- Protecting naturally occurring growth factors from degradation by the excess protease.

Protease are the body's natural enzyme providers without which haemostasis would not occur. Proteases degrade foreign material at the inflammatory stage and clean the wound. They also help cells to migrate into, and re-epithelialise over the wound. Normally, the level of protease decreases as a wound heals. However, if their activity becomes uncontrolled, causing protease levels to rise in the wound, delayed healing can occur. Growth factors are also proteins. They are synthesised by a number of different cell types in the wound and work by binding to a specific receptor on the cells surface. This stimulates the cells to migrate, proliferate and produce granulation tissue, required for wound healing. Cadesorb has a similar outcome/effect to promogram but works by altering the Ph of the wound and thus making the wound bed less suitable for protease activity.

8.9 **Larva Therapy/ Biosurgery**

Sterile larvae, break down necrotic tissue within a chronic wound, transforming it into an acute wound. They do not normally harm healthy and healing tissue. They do not invade the body, though they will go into nooks and crannies in the depths of complex wounds. They can be used with other treatments that may be necessary. There is compelling evidence to support the use of larval therapy for the purpose of eradicating MRSA from wounds.

Larva are contained in specially designed dressings, which confine them to the wound itself, and are covered so that they need not be seen. When they have done their job, and have grown about 10mms, they are removed with the dressing, usually after about 48 hours. Some chronic wounds will be slow to heal and need repeated treatment.

No serious complications of this treatment method have been reported. Some patients can feel the larvae in their wounds, and some patients with painful wounds will continue to have pain during the treatment, such pain can normally be relieved by pain relieving treatments. Once the wound starts to heal however, the pain becomes less. Pain due to the larvae can be immediately relieved by removal of the larvae. Ulcers, which are malodorous usually, become markedly less so after one or two treatment cycles. Treatment can be undertaken in secondary or primary care as larvae are available of Drug Tariff.
8.10 **Topical Negative Pressure (TNP)**

TNP is a system which applies topical negative pressure to a wound, promoting wound healing, under the influence of continuous or intermittent negative pressure.

TNP promotes healing by:
- removes infectious materials and /or other fluids
- assist tissue granulation through increased perfusion
- draws the edges of the wound together
- provides a moist wound healing environment

There are two methods of TNP available on the market\(^{238}\).

1. The Foam System
   This technique involves the application of an open pore foam and tubing which is attached to the pump, held in situ with a film dressing creating a controlled closed wound environment.

2. The Cheriker-Jeter System
   Involves application of a gauze dressing and tubing attached to a pump which is then sealed using a film dressing creating a controlled closed wound environment.

In both methods a negative pressure is applied across the wound from the pump via the drainage tube imbedded in the foam or gauze. The complete kit, which includes foams, gauze and suction unit, is available from KCI, Molynlycke or Smith & Nephew. All components are available on FP10.

The Tissue Viability Service hold the budget for the hire of the pumps and thus the TVS must be involved in every patients care where TNP is in use.

Indications:
- Pressure Ulcers
- Traumatic Wounds
- Flaps Fresh/Compromised
- Diabetic Ulcers
- Arterial Ulcers
- Surgical Wound dehiscence
- Meshed grafts
- Venous grafts

Contra-Indications
- Presence of non-enteric or unexplored fistula/fistulae
- Presence of necrotic tissue with eschar
- Malignancy
- Untreated Osteomyelitis
- Exposed blood vessels or organs.

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\(^{233}\) Thompson G (2008) An overview of negative pressure wound therapy. Wound Care June pg S 23-S29

\(^{234}\) Banwell P.E. (1999) Topical Negative Pressure Therapy in Wound Care. The Journal of Wound Care Feb Vol 8 No 2 Pg 79-84


\(^{236}\) Dhar R, CopsonD, Williamson K Nunns D. (2006) Use of topical negative pressure to close a large MRSA-infected groin wound following vulvectomy. JWC Vol 15 No 7 312-313


\(^{238}\) Malmsjo M et al (2010) Influence on pressure transduction when using different drainage techniques and wound fillers (foam and gauze) for negative pressure wound therapy, Int Wound jr Vol 7 No 5 pg 406-411.

Access to VAC therapy is via the Tissue Viability Department see Appendix 2 for referral forms

8.11  **Topical Antibiotic:**

**Example: Anabact gel**

A clear gel, which contains Metronidazole BP 0.75% W/V. It is effective against anaerobic bacteria, which often cause malodour in fungating wounds. This is a topical antibiotic and requires prescription and should only be used following discussion with the TVS or the Team Leader.
9 **WOUND DRAINAGE**

Flow must be maintained at all times. Tubes should not become blocked, kinked or removed by accident. Reduce risk of tension on wound from weight of long tubing can be achieved by using a carrier attached to bed if appropriate.

Accurate measurement of all wound drainage must be kept. Contamination of the wound must be prevented where possible. The drain site must be covered by a dressing or a sterile drainage bag. If appropriate the patient must be encouraged to maintain mobility. Disposable equipment must be discarded un-emptied into a yellow clinical waste bag.

10 **ASEPTIC NON TOUCH TECHNIQUE PROCEDURE**

An aseptic non-touch technique should be used for all wounds both Acute and Chronic. In the case of faecal contamination the clinician responsible for care must use discretion ensuring that best standards of infection control are maintained at all times. Where Leg Ulcers are concerned the procedures recommended in the Leg Ulcer Guidelines should be followed.

a) Dressing Pack - includes gloves  
b) N/Saline  
c) New Dressing  
d) Tape  
e) Forceps available if needed  
f) CSSD bag - only if instruments used  
g) Orange clinical waste bag (hospital only)  
h) Sterile scissors

Analgesia should be provided if the patient is in pain or it is anticipated that the dressing change will cause pain.

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### Table 8. Procedure for aseptic non touch technique

<table>
<thead>
<tr>
<th>AIM</th>
<th>INDICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>To minimize the risk of introducing organisms capable of causing an infection into a wound or other susceptible site where microorganisms would normally colonize or be expected. To prevent the transfer of organisms capable of causing an infection to other susceptible sites, service users of staff.</td>
<td>• Wounds healing by primary and secondary intention (before the skin has healed), e.g. surgical wounds and chronic wounds. • Urinary catheterization • Suturing • Coil fitting (family planning service) • Insertion of intravenous cannulae • Any other medical invasive procedure • Dressing intravenous lines</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure all equipment required is ready and available and that there is a clear field in which to carry out procedure.</td>
<td>To prevent unnecessary movement and potential cross-contamination</td>
</tr>
<tr>
<td>Verbally check the identity of the patient. Check with carer/family if not able to confirm.</td>
<td>To confirm identity</td>
</tr>
<tr>
<td>Explain the procedure to the service user obtain informed and understood consent</td>
<td>To enable service user to make informed decisions about their own health care</td>
</tr>
<tr>
<td>Position the patient, with dignity and privacy so that the procedure can be performed</td>
<td>To gain optimal position for patient’s comfort</td>
</tr>
<tr>
<td>Decontaminate hands</td>
<td>To reduce the risk of transfer of transient organisms on the healthcare worker’s hands</td>
</tr>
<tr>
<td>Put on single-use apron</td>
<td>To protect clothing and prevent transfer of transient organisms to a susceptible site</td>
</tr>
<tr>
<td>Open wound care pack, onto a clean field</td>
<td>To prevent introducing organisms capable of causing an infection into the site</td>
</tr>
<tr>
<td>If dressing present, loosen and remove using the inside of the waste disposal bag</td>
<td>To remove contaminated item without contaminating hands</td>
</tr>
<tr>
<td>Decontaminate hands</td>
<td>Reduce the risk of transfer of transient organisms on the healthcare workers hands</td>
</tr>
<tr>
<td>Put on sterile gloves in a manner which prevents the outer surface of the sterile glove being touched by a non-sterile item</td>
<td>To prevent the introduction of organisms capable of causing an infection into the site</td>
</tr>
<tr>
<td>Use aseptic principle to ensure that only sterile items are used, to keep exposure of the susceptible site to a maximum</td>
<td>To prevent the introduction of variable microorganisms which could cause a healthcare-acquired infection</td>
</tr>
<tr>
<td>On completion of the procedure, dispose of waste</td>
<td>As per clinical waste policy</td>
</tr>
<tr>
<td>Decontaminate hands</td>
<td>To remove any accumulated transient skin flora that may have built up under the gloves</td>
</tr>
<tr>
<td>Record all care in the patient’s records</td>
<td>As per SEPT policy</td>
</tr>
</tbody>
</table>

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11. WOUND COMPLICATIONS

11.1 Infection with/without Exudate

1. Report to person in charge and doctor.

2. Take wound swab and send for culture and sensitivity.

3. Monitor temperature and pulse, BP and respiration

4. Follow EWMA Algorithm for managing wound infection. (Figure 1)

5. Evaluate on a daily basis and record findings on WAF, reporting any concerns Medical staff.

6. Give treatment if prescribed, (systemic) and monitor effect.

7. Take repeat swab at 4 days unless otherwise indicated.

11.2 Wound Dehiscence

1. Inform medical staff immediately. Assess severity, length and depth and record.

2. Cover with sterile saline soaked dressing with support bandage until further medical advice is available.

3. Make sure patient understands the problem and anticipated plan of care.

4. Ensure that the patient is pain free by offering analgesia as prescribed.

5. Refer patient to TVS.

Beware of other complications such as abscess, haematoma, haemorrhage or sinus, all of which may need further medical treatment.
12. DEBRIDEMENT OF NECROTIC OR SLOUGHY TISSUE

“Debridement is an essential technique for all those who provide wound care. It is often done badly for lack of experience and training.” 243 It is widely accepted that the presence of devitalised tissue on the wound surface impedes healing. 244 Cutting defines necrosis as the death of local tissue and describes it as, tissue that is black or brown in colour, with a leathery appearance. Slough is defined as devitalised tissue, which has a yellow/white hue, may be dry or slimy in nature and is seen to adhere to the wound bed. 245

Surface associated bacterial populations (Biofilms) are present in chronic wounds and are a primary barrier to healing. Evidence suggests that serial debridement and removal of mature Biofilm does facilitate wound healing. 246

Any nurse wishing to undertake sharp debridement must be able to demonstrate his/her ability to safely undertake the technique either through the provision of certificates of training, 247 or a portfolio of case studies, which involved peer review, or both. Such evidence of competence must be endorsed by the Trust either by the Director of Nursing or the direct line manager if appropriate. 248

All nurses wishing to undertake this technique must do so in line with the recommendations outlined within The NMC Code of professional conduct (2008). 249 250

12.1 Definition of Debridement

Debridement is the excision of devitalised tissue and the removal of all foreign matter from a wound surface. 251 There are several debridement options available ranging from wound care products which enhance or promote autolytic debridement to techniques using instruments. 252

For the purpose of the policy, sharp debridement is the removal of devitalised tissue with the assistance of instruments such as a scalpel and scissors.

Blunt debridement is the removal of tissue with the assistance of forceps and or the application of traction to separate tissue from its anchorage.

Versajet debridement is the removal of devitalised tissue using the Versajet Hydrosurgery system. 253 254 This system is a debridement tool which makes uses of an innovative technology based on a jet of water and the Venturi effect resulting from it, which is capable of demolishing, and at the same time, removing by suction the necrotic tissue. The treatment is well tolerated by the patient and drastically reduces bacterial load. 255

12.2 Scope

243 Gautam V. Consultant Surgeon, East Herts NHS Trust.
246 Wolcott RD et al (2010) Biofilm maturity studies indicate sharp debridement opens a time dependent therapeutic window. JWC Vol 19 No 8 pg 320-327
248 Dimond B. (1900) Legal aspects of nursing pg 39-50. Prentice Hall
In SEPT WEL sharp debridement by nurses will only be performed on devitalised tissue, which is necrotic or sloughy. No removal or cutting of healthy tissue with a blood supply will occur. No debridement of ischaemic digits will be performed. No perforation of vessels should occur during the procedure. Blood loss as a result of contact with granulating tissue during the procedure will be minimal. Versajet debridement of slough, soft necrosis, senescent cells, biofilm and devitalised tissue can be performed by the TVS within competency.

12.3 Contra-indications for Versajet or Sharp Debridement

- Densely adherent necrotic tissue.
- No visual evidence of a demarcation line between viable and non-viable tissue.
- Patients with impaired clotting mechanisms.
- Ischaemic limbs with ulcers where tissue perfusion is inadequate to support healing.
- Cellulitis.
- Diabetic foot ulceration. (Unless under supervision of Vascular Team or Foot Health Department)
- Fungating malignant wounds
- Where wounds are near, vascular structures, Dacron grafts, prosthesis, dialysis fistula, hands face or feet with the exception of the heel.
- Necrotic toes or fingers

12.4 Criteria for sharp debridement

Sharp debridement of necrotic or sloughy tissue may take place if; the nurse wishing to undertake the procedure, working in accordance with the NMC code of professional conduct and in line with Trust Policy believes that sharp debridement offers the greatest advantage for the patient above other methods of debridement or in cases where other methods of debridement have been unsuccessful.

12.5 Criteria for Versajet debridement

Versajet debridement may take place if the Tissue Viability Nurse Specialist undertaking the procedure working in accordance with the NMC code of professional conduct and in line with Trust Policy believes that it offers the greatest advantage for the patient above other methods of debridement.

12.6 Procedure of communication with other disciplines prior to Versajet or sharp debridement.

The nurse wishing to undertake sharp debridement must ensure that:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The intention to debride should be discussed with the responsible medical team and should be documented in the patient’s medical notes. If the medical team involved hold an objection to such debridement this should be written clearly in the patients notes in advance of any debridement taking place.</td>
<td>- To gain the opinion of the medical staff regarding sharp debridement, and to ensure they agree and support the decision to sharp debride.</td>
</tr>
<tr>
<td>- The proposed procedure is discussed with the patient and is documented in line with Trust Consent Policy.</td>
<td>- To inform the patient of their condition and provide them with insight into the options available and reasons why sharp debridement has been chosen and to gain consent for the procedure.</td>
</tr>
</tbody>
</table>

12.7 Procedure for debridement

---

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Routine procedures to ensure patient comfort and safety will be followed.</td>
<td>• To ensure the patient is comfortable and safely positioned for the procedure.</td>
</tr>
<tr>
<td>• Routine analgesic normally provided for the individual concerned prior to dressing changes will be provided. However to ensure patient comfort and allay anxiety additional analgesia may be prescribed by Medical Staff or Independent Prescribers if required.</td>
<td>• As debridement of necrotic issue only will take place, there should be no reason to cause increased pain and thus no requirement for additional or stronger analgesia however holistic patient assessment may indicate that additional analgesia may enhance the patient experience and ensure an improved outcome.</td>
</tr>
<tr>
<td>• Aseptic technique and a sterile debridement pack /Versajet pack will be used.</td>
<td>• To prevent cross infection.</td>
</tr>
<tr>
<td>• An additional nurse will be present to comfort the patient throughout the procedure and assist the debridor.</td>
<td>• To comfort the patient and ensure that the debridor is assisted when necessary.</td>
</tr>
<tr>
<td>• Additional gauze and bandages will be at hand in case of accidental haemorrhage.</td>
<td>• To ensure immediate control of any accidental bleeding.</td>
</tr>
<tr>
<td>• Good seating and lighting will be available for the debridor.</td>
<td>• To promote optimum visualisation of the area to be debrided.</td>
</tr>
<tr>
<td>• No callous or chronic ulceration tissue with a blood supply will be removed by sharp debridement. Suspected Biofilm or devitalised granulating tissue can be debrided using Versajet Debridement</td>
<td>• The purpose of debridement is to remove necrotic, sloughy tissue only and in the case of versajet biofilm and senescent devitalised tissue only.</td>
</tr>
<tr>
<td>• Necrotic eschar and sloughy tissue only will be removed via sharp debridement.</td>
<td>• To remove devitalised tissue and facilitate proliferation of the wound bed.</td>
</tr>
<tr>
<td>• If accidental cutting of viable tissue should occur, direct pressure will be applied with sterile gauze until bleeding ceases. A haemostatic pressure dressing can also be used.</td>
<td>• To ensure accidental blood loss is minimal and that no haemodynamic instability occurs.</td>
</tr>
<tr>
<td>• If direct pressure fails to control bleeding within 15 minutes medical staff will be contacted for immediate assistance.</td>
<td>• To obtain expert assistance in curtailing blood loss.</td>
</tr>
<tr>
<td>• In all cases of accidental bleeding an entry to detail the extent of the situation will be made in the medical notes.</td>
<td>• To ensure patient records provide evidence of the event and the action taken to minimise patient harm.</td>
</tr>
<tr>
<td>• If accidental cutting of healthy tissue occurs medical staff will be contacted to discuss the possibility of prophylactic antibiotics.</td>
<td>• If medical staff feels there might be a risk of sepsis as a result of incident, prophylactic antibiotics may be provided to reduce the risk.</td>
</tr>
<tr>
<td>• All patients who have undergone sharp debridement or Versajet debridement should be monitored for signs of bleeding or pyrexia following the procedure.</td>
<td>• To detect any signs of complications as a result of the procedure and to ensure prompt action should such events take place.</td>
</tr>
<tr>
<td>• The patient’s notes will be updated giving full details of the extent of debridement and providing instructions for aftercare. Together with date of review by the Debridor. Versajet handset serial numbers will be place in the notes.</td>
<td>• To provide good record of the procedure and ensure good communication will all staff regarding aftercare.</td>
</tr>
<tr>
<td>• A registered nurse will inspect the wound after 24 hours and any deterioration reported to the</td>
<td>• To check that the wound is healthy and to detect any complication. Should complication</td>
</tr>
</tbody>
</table>

---


<p>| debridor and medical staff immediately. | occur the debridor and medical staff will provide advice regarding action to be taken. |</p>
<table>
<thead>
<tr>
<th>PATIENT DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME:</td>
</tr>
<tr>
<td>ADDRESS:</td>
</tr>
<tr>
<td>DATE OF BIRTH:</td>
</tr>
<tr>
<td>HOSPITAL NUMBER:</td>
</tr>
<tr>
<td>CONSULTANT:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BRIEF MEDICAL DETAILS</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DETAILS OF AREA TO BE DEBRIDED</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>RESULTS OF PROCEDURES OF RELEVENCE</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>TECHNIQUE TO BE USED INCLUDING SERIAL NUMBER OF VERSAJET HANDSET</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DESCRIPTION OF PROCEDURE</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>EVALUATION OF DEBRIDEMENT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>FOLLOW UP VISIT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>BRIEF DESCRIPTION OF ANY COMPLICATIONS AND TREATMENT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>MEDICAL EVALUATION OF END RESULT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>NAME:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>SIGNATURE:</th>
</tr>
</thead>
</table>

TRAINING RECORD
## COURSES

<table>
<thead>
<tr>
<th>DATE &amp; VENUE</th>
<th>COURSE TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## RECORD OF CLINICAL OBSERVATION

<table>
<thead>
<tr>
<th>CLINICAL AREA</th>
<th>OBSERVED INDIVIDUAL</th>
<th>PROCEDURES OBSERVED</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
13 MONITORING OF ADHERANCE TO GUIDELINE

It is the responsibility of clinical teams to regularly audit wound care practice as part of their audit cycle. Appendix 4 provides an audit tool which has been developed to facilitate the review of practice relative to these guidelines. It is recommended that clinical teams incorporate wound management into their audit cycle as a regular occurrence and action plan to achieve continuous improvement.

14 EDUCATION

This guideline has been compiled to facilitate the continuous education of clinical groups. In addition the Tissue Viability Service provides regular training sessions to support these guidelines. Detail of planned training can be obtained from the Trust Education Directory available on the Intranet.
Appendix 1

The MUST Nutrition Risk Score
“MUST” FOR COMMUNITY HOSPITALS AND RESIDENTIAL/NURSING HOMES

“MUST” FOR THE COMMUNITY

“MUST” SCORE RECORDING SHEET
**Malnutrition Universal Screening Tool (MUST)**

*FOR COMMUNITY HOSPITALS and RESIDENTIAL/NURSING HOMES*

### STEP 1

<table>
<thead>
<tr>
<th>BMI kg/m²</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 20</td>
<td>0</td>
</tr>
<tr>
<td>18.5 – 20</td>
<td>1</td>
</tr>
<tr>
<td>&lt; 18.5</td>
<td>2</td>
</tr>
</tbody>
</table>

### STEP 2

Unplanned weight loss in past 3 – 6 months

<table>
<thead>
<tr>
<th>%</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 5</td>
<td>0</td>
</tr>
<tr>
<td>5 - 10</td>
<td>1</td>
</tr>
<tr>
<td>&gt; 10</td>
<td>2</td>
</tr>
</tbody>
</table>

If the patient is acutely ill AND there has been or is likely to be NO nutritional intake for > 5 days

Score 2

### STEP 4 - Overall risk of malnutrition

Add scores together to calculate overall risk of malnutrition

- Score 0 = Low risk
- Score 1 = Medium risk
- Score 2 or more = High risk

### STEP 5 - Care Plan

**= 0 (LOW RISK)**

*If BMI is greater than 30 kg/m² then include a healthy eating plan*

**ROUTINE CARE:**

- Repeat MUST score weekly in Community Hospitals and monthly in Residential/Nursing Homes

**= 1 (MEDIUM RISK)**

**OBSERVE:**

- Observe intake using food chart and fluid chart
- If oral intake is poor encourage oral intake, offering high calorie snacks and meals – implement “Food First”
- If there is no improvement then there is clinical concern – implement nutrition care plan
- If improved/adequate oral intake then there is little clinical concern – continue routine care
- Repeat MUST weekly in Community Hospitals, and monthly in Residential/Nursing Homes or more frequently if clinical condition deteriorates

**= 2 or More (HIGH RISK)**

- *(Unless detrimental or no benefit is expected from nutritional support e.g. terminal phase of illness)*
- Observe intake using a food chart and fluid chart
- Implement nutrition care plan
- Aim to improve and increase oral intake. This could be done by offering high calorie snacks and meals and nutritional supplements. Implement “Eat Well Tray System” and/or “Food First”
- If no improvement after 7 days (Hospital) or 4 weeks (NH), consider referral to the dietitian
- Also refer to dietitian if MUST is 3 or more and BMI < 18.5 kg/m²
- Monitor and review care plan weekly in Community Hospitals and monthly in Res/Nursing Homes

*If height, weight or BMI cannot be obtained due to strict bed rest, the following criteria can assist your professional judgement of the patient’s nutritional risk:*

**a) BMI**

Clinical impression – thin; acceptable weight; overweight. Obvious wasting (very thin) and obesity (very overweight) can also be noticed.

**b) Unplanned weight loss**

Clothes and/jewellery have become loose fitting

History of decreased food intake, reduced appetite or swallowing problems over 3 – 6 months, and underlying disease or psycho-social/physical disabilities are likely to cause weight loss.
**Malnutrition Universal Screening Tool (MUST)**

**FOR THE COMMUNITY**

<table>
<thead>
<tr>
<th>STEP 1</th>
<th>+</th>
<th>STEP 2</th>
<th>+</th>
<th>STEP 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI Score *</td>
<td></td>
<td>Weight loss score</td>
<td></td>
<td>Acute disease effect score</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BMI kg/m²</th>
<th>Score =</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 20</td>
<td>0</td>
</tr>
<tr>
<td>18.5 – 20</td>
<td>1</td>
</tr>
<tr>
<td>&lt; 18.5</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unplanned weight loss in past 3 – 6 months</th>
<th>Score =</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td></td>
</tr>
<tr>
<td>&lt; 5</td>
<td>0</td>
</tr>
<tr>
<td>5 -10</td>
<td>1</td>
</tr>
<tr>
<td>&gt; 10</td>
<td>2</td>
</tr>
</tbody>
</table>

If the patient is acutely ill AND there has been or is likely to be NO nutritional intake for > 5 days

Score 2

**STEP 4 - Overall risk of malnutrition**

Add scores together to calculate overall risk of malnutrition

<table>
<thead>
<tr>
<th>Score 0 = Low risk</th>
<th>Score 1 = Medium risk</th>
<th>Score 2 or more = High risk</th>
</tr>
</thead>
</table>

**STEP 5 - Care Plan**

= 0 (LOW RISK)

(If BMI is greater than 30 kg/m² then include a healthy eating plan)

ROUTINE CARE: -

- Repeat MUST score annually for at risk patients e.g. those over 75 yrs
- People with neurological degenerative diseases need to be monitored every 4 months

= 1 (MEDIUM RISK)

OBSERVE: -

- Observe intake using food chart and fluid chart
- If oral intake is poor encourage, offering high calorie snacks and meals – implement “Food First”
- If there is no improvement then there is clinical concern – implement nutrition care plan
- If improved/adequate oral intake then there is little clinical concern – continue routine care
- Repeat MUST at least every 2 – 3 months

= 2 or More (HIGH RISK)

- (Unless detrimental or no benefit is expected from nutritional support e.g. terminal phase of illness)
- Observe intake using a food chart and fluid chart
- Implement nutrition care plan
- Aim to improve and increase oral intake. This could be done by offering high calorie snacks and meals and nutritional supplements. Implement “Food First”
- If no improvement after 4 weeks refer to the dietitian
- Also refer to dietitian if MUST is 3 or more and BMI < 18.5 kg/m²
- Monitor and review care plan monthly

*If height, weight or BMI cannot be obtained due to strict bed rest, the following criteria can assist your professional judgement of the patient’s nutritional risk: -

a) BMI

Clinical impression – thin; acceptable weight; overweight. Obvious wasting (very thin) and obesity (very over weight ) can also be noticed

b) Unplanned weight loss: -

Clothes and/jewellery have become loose fitting

History of decreased food intake, reduced appetite or swallowing problems over 3 – 6 months, and Underlying disease or psycho-social/physical disabilities are likely to cause weight loss
MUST Score Recording Sheet

<table>
<thead>
<tr>
<th>Date</th>
<th>Weight</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A = Actual</td>
<td>BMI Score</td>
<td>Weight loss score</td>
<td>disease score</td>
<td>MUST score</td>
<td>0 = Low</td>
</tr>
<tr>
<td></td>
<td>estimated</td>
<td>kg/m²</td>
<td>Score</td>
<td>Weight loss %</td>
<td>Score</td>
<td>1+2+3</td>
</tr>
<tr>
<td></td>
<td>U = Unable to weigh – with rationale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Action taken</th>
<th>Review Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Print and sign name
Appendix 2

- TVS Referral Form
- TNP Referral Form
- Care Pathway for a Patient with a Wound
- Care Pathway for MRSA infected Wound
TISSUE VIABILITY PATIENT REFERRAL FORM

Ward referer to complete sections 1 to 6 fax no 01279 827178. All Sections must be completed before TVS will accept referral.

Date of Referral:

Section 1: Referrer's Details:
Name: 
Contact Tel No: 
Name of Hospital/ G.P. Practice/Clinic

Section 2: Patients Details:
Name: 
Address: 
Tel No: 
G.P and G.P Base: 
Consultant: 
D.O.B

NHS No
Is the Patient eligible for NHS care 
Yes ☐ No ☐

Section 3: Consent:
Patient consents to being assessed by TVN? 
Yes ☐ No ☐

Section 4: Referral Details:
Wound Management Pressure Ulcer Category/Grade 1 ☐ 
Surgical ☐ 2 ☐ for all Category 2 & above 
Traumatic ☐ 3 ☐ please provide 
Burn ☐ 4 ☐ incident form no 
Malignant ☐ 
Other ☐ 
Duration: 
Waterlow Score Must Score 
Has a SET SAF 1 Form been completed, please give date 
Has TNP Therapy been requested 
Yes ☐ No ☐

Pressure Reducing/ Relieving Mattress: Propad ☐ Alpha x cell ☐ Auto x cell ☐ 
Eclipse ☐ Nimbus 2 ☐ Nimbus 3 ☐ Biwave ☐ Airwave ☐ Other ☐ State:

Section 5: Wound Details
Site: Sacrum ☐ Trochanter ☐ Buttocks ☐ Heels: Left ☐ Right ☐ Both ☐ Head ☐ 
Other ☐State:
Tissue Appearance: Necrotic %, Sloughy %, Granulating %, Epithelialising %

Current Wound Management (State):

Please attach copy of current Wound Assessment Form and TV Care Plans:
Medical History/ Diagnosis/ is patient taking Steriods / Nsaisd

Section 6
Is the Patient Diabetic YES / NO CBG---------- HbA1c ---------- Urinalysis----------
**TISSUE VIABILITY TNP REFERRAL FORM**

*Referrer to complete sections 1 to 5 and fax no 01279 827178*

<table>
<thead>
<tr>
<th>Date of Referral:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Section 1: Referrer’s Details:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
</tr>
<tr>
<td>Contact Tel No:</td>
</tr>
<tr>
<td>Name of Hospital/ G.P. Practice/Clinic</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Section 2: Patients Details:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
</tr>
<tr>
<td>Address:</td>
</tr>
<tr>
<td>Tel No:</td>
</tr>
<tr>
<td>G.P and G.P Base:</td>
</tr>
<tr>
<td>Consultant:</td>
</tr>
<tr>
<td>NHS No</td>
</tr>
<tr>
<td>Is the Patient eligible for NHS care</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Section 3: Reason TNP Required</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Acquired Pressure Ulcer: Yes/No</td>
</tr>
<tr>
<td>Category/Grade:</td>
</tr>
<tr>
<td>Community Pressure Sore: Sore present on admission to Acute Trust</td>
</tr>
<tr>
<td>District Nurse or Practice Nurse involved:</td>
</tr>
<tr>
<td>District Nurse or Practice Nurse Name:</td>
</tr>
<tr>
<td>Acute Wound: Reason required:</td>
</tr>
<tr>
<td>Chronic Wound: Reason required:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Section 4: Ordering TNP</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>When TNP Therapy commenced:</td>
</tr>
<tr>
<td>Who requested commencement:</td>
</tr>
<tr>
<td>How long will TNP be required:</td>
</tr>
<tr>
<td>Should funding be refused what other treatment could be used:</td>
</tr>
<tr>
<td>If TNP is used what is the potential reduction in length of stay:</td>
</tr>
<tr>
<td>State method of TNP: (Gauze or Foam)……………… Canister in use ………….Dressings in use …………..</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Section 5: Wound Details:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Site: Sacrum □ Trochanter □ Buttocks □ Heels: Left □ Right □ Both □ Head □</td>
</tr>
<tr>
<td>Other □ State:</td>
</tr>
<tr>
<td>Tissue Appearance: Necrotic %, Sloughy %, Granulating %, Epithelialising %</td>
</tr>
<tr>
<td>Please attach copy of current Wound Assessment Form:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Brief Medical History/Diagnosis</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Section 6: N.B Tissue Viability Nurse to complete Section 6</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Appointment Made: Date…………………… Time………………….am/pm</td>
</tr>
<tr>
<td>Tissue Viability Nurse: Name………………………… Signature……………….</td>
</tr>
</tbody>
</table>
Care Pathway for a Patient with a Wound

**Acute Wound less than 6 weeks old.**

Is the wound healing well without complications.

- **YES**
  - Continue normal post operation plan
  - GP, Medic, Surgeon to be contacted for advice/review & consideration for referral to Tissue Viability Service
  - Tissue Viability Service to be involved, collaborating with Surgeon to support patient in primary care.

- **NO**
  - Has the G.P / Medic/Surgeon been informed?
    - **NO**
    - Consider a review of management by Tissue Viability Team to check that care is optimum
    - Refer to Tissue Viability Team for assessment
    - Follow advice given & make Tissue Viability referral concurrently for collaborative care

**Chronic Wound more than 6 weeks old**

Is the wound healing well, and likely to be healed within 12 weeks

- **YES**
  - GP, Medic, Surgeon to be contacted for advice/review & consideration for referral to Tissue Viability Service
  - Follow advice given & make Tissue Viability referral concurrently for collaborative care

- **NO**
  - Has the G.P / Medic/Surgeon been informed?
    - **NO**
    - Consider a review of management by Tissue Viability Team to check that care is optimum
    - Refer to Tissue Viability Team for assessment
    - Follow advice given & make Tissue Viability referral concurrently for collaborative care
Care Pathway for MRSA Infected Wound

All MRSA infected wounds must be referred to the Tissue Viability Service, the Leg Ulcer Service or Podiatry (According to Type of Wound) within 72 hours of diagnosis.

Holistic Wound Assessment and complete SEPT WEL WAF

Identify wound aetiology and develop care plan for appropriate treatment

Treat according to condition of wound bed and TIME.

MRSA Colonised Antibiotics not required

MRSA Locally/systemically infected. Treat with antibiotics as per SEPT WEL Guidelines

Heavy Exudate?

NO

Wound Dressing Options
- Iodoflex
- Actilite Honey
- PhysiOTulle Ag
- Sorbian Silver flat
- Allevyn AG

YES

Wound Dressing Options
- Iodoflex
- Alginon
- Aquacel AG
- Sorbian Silver packing
- Suprasorb X Plus
- PHMB
- Larval Therapy
- TNP Therapy
Appendix 3

Proforma Care Plans

These care plans are available electronically and must be amended and tailored electronically to each individual patient wound before printing. Please speak to your team leader or ward manager for access or contact The Tissue Viability Dept on EXT 5551.
### WOUND CARE PLAN

<table>
<thead>
<tr>
<th>DATE/TIME</th>
<th>PATIENT PROBLEM/NEED</th>
<th>RGN SIGNATURE</th>
<th>REVIEW DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Patient has a clean epithelialising flat wound (State where and cause) If the wound is a leg ulcer refer to the leg ulcer guidelines. Patient understands nature of problem and consents to treatment.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DATE/TIME</th>
<th>GOAL</th>
<th>RGN SIGNATURE</th>
<th>REVIEW DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maintain patients involvement and concordance. Ensure patients pain is controlled.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**T:** Promote epithelialisation

**I:** Reduce inflammation and maintain bacterial balance

**M:** Achieve moisture balance

**E:** Measure advancing edges

<table>
<thead>
<tr>
<th>DATE/TIME</th>
<th>NURSING ACTION/INSTRUCTION</th>
<th>RGN SIGNATURE</th>
<th>REVIEW DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Discuss progress with patient, explaining changes and maintaining concordance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wound Assessment Form (WAF) completed: Date: The WAF must be completed at each dressing change.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If a pressure ulcer, develop a care plan to prevent deterioration and development of new sores.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide analgesia 30 minutes prior to dressing change if required, record pain rating on WAF. Establish a pain care plan if required.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If wound is clean no cleaning is required. Sterile saline should be used if cleaning is required to remove dressing debris.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Minimal exudate:** Use semi-permeable film

**Low/moderate exudates:** Non-adherent or low adherent dressing

**Moderate exudate:** Hydrocolloid sheet

<table>
<thead>
<tr>
<th>DATE/TIME</th>
<th>FREQUENCY OF DRESSING CHANGE</th>
<th>RGN SIGNATURE</th>
<th>REVIEW DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Follow manufacturers guidelines regarding frequency of dressing changes and state this on this plan Change dressing every .................Days. However all dressings should be changed when strike through occurs or if the dressing is soiled from other sources.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refer to the Tissue Viability Service if wound is failing to progress.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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**WOUND CARE PLAN**

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<td></td>
<td>Patient has a granulating cavity wound (State where and cause). If the wound is a leg ulcer refer to the leg ulcer guidelines. Patient understands nature of problem and consents to treatment.</td>
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<td></td>
<td>Maintain patients involvement and concordance. Ensure patients pain is controlled. T: Promote viable granulation from the wound base I: Reduce inflammation and maintain a bacterial balance. M: Achieve moisture balance E: Prevent closure of edges before wound base heals Measure advancing edges and base of wound.</td>
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<td>Discuss progress with patient, explaining changes and maintaining concordance.</td>
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<td></td>
<td>Wound Assessment Form (WAF) completed: Date: The WAF must be completed at each dressing change. If a pressure ulcer develop a care plan to prevent deterioration and development of new sores. Provide analgesia 30 minutes prior to dressing change if required, record pain rating on WAF. Establish a pain care plan if required. If wound is clean no cleaning is required. Sterile saline should be used if cleaning is required to remove dressing debris. Minimal exudate; use Hydrocolloid paste. Cover with adhesive N/A dressing. Moderate exudate: Alginate rope or Hydrofibre rope. Cover with adhesive non adherent dressing. High exudate: High absorbent Alginate or Hydrofibre. Cover with Foam or Hydrocolloid sheet. TNP Therapy will manage a high amount of exudate and accelerate healing from the base of the wound.</td>
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<td>Follow manufacturer’s guidelines regarding frequency of dressing changes and state this on this plan. Change dressing every.................Days. However all dressings should be changed when strike through occurs or if the dressing is soiled from other sources. Refer to TVS if wound is failing to progress.</td>
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**WOUND CARE PLAN**
Patient has a granulating non-cavity wound (state where and cause). If the wound is a leg ulcer refer to the Leg Ulcer Guidelines. Patient understands nature of problem and consents to treatment.

Maintain patients involvement and concordance. Ensure patient’s pain is controlled.

T: Promote viable granulation from the wound base
I: Reduce inflammation and maintain a bacterial balance
M: Achieve moisture balance
E: Measure advancing edges

Discuss progress with patient, explaining changes and maintaining concordance.

Wound Assessment Form (WAF) completed:
Date: The WAF must be completed at each dressing change.
If a pressure ulcer develop a care plan to prevent deterioration and development of new sores.
Provide analgesia 30 minutes prior to dressing change if required, record pain rating on WAF. Establish a pain care plan if required.
If wound is clean no cleaning is required. Sterile saline should be used if cleaning is required to remove dressing debris.
Minimal exudate: use Hydrocolloid adhesive sheet.
Moderate exudate: Hydrocolloid fibre covered with Hydrocolloid sheet.
High exudate: High absorbent Alginate or Hydrofibre. Cover with a Foam or sheet. A gauze pad may also be used for additional absorbancy as an outer layer.

Follow manufacturer’s guidelines regarding frequency of dressing changes and state this on this plan. Change dressing every...............Days.
However all dressings should be changed when strike through occurs or if the dressing is soiled from other sources.

Refer to the Tissue Viability Service if wound is failing to progress.

Care plan discussed and agreed with patient Patient signature:.........................

WOUND CARE PLAN
### WOUND CARE PLAN

**Patient's Name:**

**Address:**

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<td>Patient has an infected wound. (State where and cause) If the wound is a leg ulcer refer to the Leg Ulcer Guidelines. Patient understands nature of problem and consents to treatment.</td>
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<td>Maintain patients involvement and concordance. Ensure patients pain is controlled.</td>
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<tr>
<td></td>
<td>T: Debridement of sloughy and necrotic tissue</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I: Reduce inflammation and control bacterial balance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M: Achieve moisture balance</td>
<td></td>
<td></td>
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<td>E: Measure advancing edges and base of wound</td>
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<td></td>
<td>If a pressure ulcer develop a care plan to prevent deterioration and development of new sores.</td>
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<tr>
<td></td>
<td>Provide analgesia 30 minutes prior to dressing change if required, record pain rating on WAF. Establish a pain care plan if required.</td>
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<td></td>
<td>Clean with sterile saline 0.9%, Stellisept wash or povidine iodine solution if an antiseptic is required to remove dressing debris</td>
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<tr>
<td></td>
<td>Minimal exudate: use a Hydrogel held in place with a N/A Pad.</td>
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<td></td>
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<td></td>
<td>Moderate exudate: use an Alginate or Hydrofibre held in place with a non-adherent Pad.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High exudate: use an Alginate or Hydrofibre held in place with a foam dressing.</td>
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<td></td>
<td>Do not use occlusive dressings on infected wound until antibiotic therapy has controlled the infection.</td>
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<td>Follow manufacturer's guidelines regarding frequency of dressing changes and state this on this plan. Change dressing every......................days. However all dressings should be changed when strike through occurs or if the dressing is soaked from other sources. Refer to the Tissue Viability Service if wound is failing to progress.</td>
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Patient has a hard necrotic eschar covering a wound. (State where and cause) If necrotic area is a toe or hand do not debride, seek advice from medical staff or Tissue Viability Service If the wound is a leg ulcer refer to the Leg Ulcer Guidelines Patient understands nature of problem and consents to treatment.

**DATE/TIME** | **PATIENT PROBLEM/NEED** | **RGN SIGNATURE** | **REVIEW DATE**
---|---|---|---

Maintain patients involvement and concordance. Ensure patients pain is controlled.

**DATE/TIME** | **GOAL** | **RGN SIGNATURE** | **REVIEW DATE**
---|---|---|---

**DATE/TIME** | **NURSING ACTION/INSTRUCTION** | **RGN SIGNATURE** | **REVIEW DATE**
---|---|---|---

Discuss progress with patient, explaining changes and maintaining concordance.

Wound Assessment Form (WAF) completed:

**Date:**

The WAF must be completed at each dressing change.

If a pressure ulcer develop a care plan to prevent deterioration and development of new sores.

Provide analgesia 30 minutes prior to dressing change if required, record pain rating on WAF. Establish pain care plan if required.

Refer patient to a clinician who can sharp debride wound OR use debridement agents such as

**Hydrocolloid sheet:**

**Hydrogel:**

Secure primary dressing with non-adherent dressing where required

**DATE/TIME** | **FREQUENCY OF DRESSING CHANGE:** | **RGN SIGNATURE** | **REVIEW DATE**
---|---|---|---

Follow manufacturers guidelines regarding frequency of dressing changes and state this on this plan

**Change dressing every** .................**Days.** However all dressings should be changed when strike through occurs or if the dressing is soiled from other sources.

Refer to the Tissue Viability Service if wound is failing to progress.

**DATE/TIME** | **OTHER INSTRUCTIONS:** | **RGN SIGNATURE** | **REVIEW DATE**
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Care plan discussed and agreed with patient

Patient signature:.........................
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<td>Patient has a sloughy wound (Cavity) (State where and cause) If the wound is a leg ulcer refer to the Leg Ulcer Guidelines Patient understands nature of problem and consents to treatment.</td>
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<td><strong>T:</strong> Debride Slough</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>I:</strong> Reduce inflammation and maintain bacterial balance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>M:</strong> Achieve moisture balance</td>
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<td></td>
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<td>The WAF must be completed at each dressing change.</td>
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<td>If a pressure ulcer develop a care plan to prevent deterioration and development of new sores.</td>
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<td>Provide analgesia 30 minutes prior to dressing change if required, record pain rating on WAF. Establish a pain care plan if required.</td>
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<td>Clean with Sterile Saline to remove debris.</td>
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<td></td>
<td><strong>Minimal Exudate:</strong> Hydrogel, &amp; non adherent dressing</td>
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<td></td>
<td><strong>Moderate Exudate:</strong> Hydrogel and non adherent pad.</td>
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<td></td>
<td><strong>High Exudate:</strong> Hydrocolloid fibre rope and foam dressing. A gauze pad can be used as an outer dressing if additional absorbency is required.</td>
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<td><strong>Change dressing every .................Days.</strong></td>
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<td>However all dressings should be changed when strike through occurs or if the dressing is soiled from other sources.</td>
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<td>Refer to the Tissue Viability Service if wound is failing to progress</td>
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## DATE/TIME

**PATIENT PROBLEM/NEED**

Patient has a sloughy wound (Non Cavity) (State where and cause) If the wound is a leg ulcer refer to the Leg Ulcer Guidelines

Patient understands nature of problem and consents to treatment.

**RGN SIGNATURE**

**REVIEW DATE**

---

## DATE/TIME

**GOAL**

Maintain patient involvement & concordance.

Ensure patients pain is controlled

T: Debride Slough

I: Reduce inflammation and maintain bacterial balance

M: Achieve moisture balance

E: Measure advancing edges

**RGN SIGNATURE**

**REVIEW DATE**

---

## DATE/TIME

**NURSING ACTION/INSTRUCTION**

Discuss progress with patient, explaining changes and maintaining concordance.

Wound Assessment Form (WAF) completed:

**Date:**

The WAF must be completed at each dressing change.

If a pressure ulcer develop a care plan to prevent deterioration and development of new sores.

Provide analgesia 30 minutes prior to dressing change if required, record pain rating on WAF. Establish a pain care plan if required.

Clean with Sterile Saline to remove debris

**Minimal Exudate**: Hydrocolloid sheet

**Moderate Exudate**: Hydrocolloid fibre dressing and Non adherent pad.

**High Exudate**: Alginate and foam dressing. A gauze pad can be used as an outer layer if additional absorbency is required

**RGN SIGNATURE**

**REVIEW DATE**

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## DATE/TIME

**FREQUENCY OF DRESSING CHANGE:**

Follow manufacturer’s guidelines regarding frequency of dressing changes and state this on this plan. **Change dressing every ..........Days**. However all dressings should be changed when strike through occurs or if the dressing is soiled from other sources.

Refer to the TVS if failing to progress.

**RGN SIGNATURE**

**REVIEW DATE**

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## DATE/TIME

**OTHER INSTRUCTIONS:**

Care plan discussed and agreed with patient

Patient signature:..........................
## WOUND CARE PLAN

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<td>Patient has an uncomplicated post surgical wound (State where ) Patient understands nature of problem and consents to treatment.</td>
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Appendix 4

Wound Management Audit Tool

- Staff questionnaire
- Questionnaire answers
- Patient questionnaire
- Audit tool
**WOUND MANAGEMENT STANDARD STAFF QUESTIONNAIRE**

<table>
<thead>
<tr>
<th>CODE</th>
<th>QUESTION</th>
<th>ANSWERS</th>
</tr>
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</table>
| P1   | 1. Name five factors which impair wound healing in patients? | a)  
b)  
c)  
d)  
e)  |
| P2   | What factors can promote wound healing? (Include two local and two systemic factors) | Systemic  
a)  
b)  
Local  
a)  
b)  |
| S5 & S10 | What would be the cleaning solution for a granulating wound (non-infected)? | |
| S5 & S10 | What would be the dressing for a granulating wound with:-  
a) minimum exudate  
b) low exudate  
c) moderate exudate  
d) heavy exudate | a)  
b)  
c)  
d)  |
<p>| S5 &amp; S10 | What would be the cleaning solution for a sloughy wound (non-infected)? | |</p>
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<td>S5 &amp; S10</td>
<td>What would be the dressing for a sloughy wound with:-</td>
<td></td>
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<tr>
<td></td>
<td>a) low exudate</td>
<td>a)</td>
</tr>
<tr>
<td></td>
<td>b) moderate exudate</td>
<td>b)</td>
</tr>
<tr>
<td></td>
<td>c) heavy exudate</td>
<td>c)</td>
</tr>
<tr>
<td>P3</td>
<td>What does the acronym TIME stand for?</td>
<td></td>
</tr>
<tr>
<td>S10 &amp; P4</td>
<td>Give an example of the following dressings:-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Semipermeable</td>
<td>a)</td>
</tr>
<tr>
<td></td>
<td>b) Alginate</td>
<td>b)</td>
</tr>
<tr>
<td></td>
<td>c) Hydrocolloid</td>
<td>c)</td>
</tr>
<tr>
<td></td>
<td>d) Hydrogel</td>
<td>d)</td>
</tr>
<tr>
<td></td>
<td>e) Foam</td>
<td>e)</td>
</tr>
<tr>
<td>S3 &amp; P4</td>
<td>Where would you commence a wound care plan?</td>
<td></td>
</tr>
<tr>
<td>S3 &amp; P4</td>
<td>When would you photograph or trace/illustrate a wound?</td>
<td></td>
</tr>
<tr>
<td>S8A</td>
<td>What is the basic procedure that minimises the risk of cross infection?</td>
<td></td>
</tr>
<tr>
<td>S8 B&amp;C</td>
<td>Name two means by which bacteria is transferred:</td>
<td>a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b)</td>
</tr>
<tr>
<td>S8</td>
<td>If you are concerned about cross infection, where would you obtain advice?</td>
<td>a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b)</td>
</tr>
</tbody>
</table>
## WOUND MANAGEMENT STANDARD STAFF ANSWERS

<table>
<thead>
<tr>
<th>CODE</th>
<th>QUESTION</th>
<th>ANSWERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Name five factors which impair wound healing in patients?</td>
<td>Hypoxia, Sleep deprivation, Low blood flow, Drugs eg Steroids, Pain, Reduced immunity, Stress, Jaundice, Infection, Uraemia, Reduced immunity, Length and type of operation, Pain, Jaundice, Uraemia, Poor nutrition, Abnormal blood sugar levels</td>
</tr>
<tr>
<td>P2</td>
<td>What factors can promote wound healing? (Include two local and two systemic factors)</td>
<td><strong>Systemic</strong>&lt;br&gt;Nutrition, Analgesia, Sleep, Adequate blood supply to wound, Antibiotics, Adequate oxygenation&lt;br&gt;&lt;br&gt;<strong>Local</strong>&lt;br&gt;Maintenance of high humidity between wound and dressing, Removal of excess exudate and toxic components, Thermal insulation, Dressing impermeable to bacteria, Freedom from particles and toxic wound contaminants, A traumatic removal of dressings, Maintenance of a physiological pH and promotion of O2 delivery to wound surface</td>
</tr>
<tr>
<td>S5 &amp; S10</td>
<td>What would be the cleaning solution for a granulating wound (non-infected)?</td>
<td>Sodium Chloride 0.9%</td>
</tr>
<tr>
<td>CODE</td>
<td>QUESTION</td>
<td>ANSWERS</td>
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</tr>
<tr>
<td>S5 &amp;</td>
<td>What would be the dressing for a granulating wound with:-</td>
<td>a) Non-adherent or semi occlusive/semipermeable</td>
</tr>
<tr>
<td>S10</td>
<td>a) minimum exudate</td>
<td>b) Hydrocolloid</td>
</tr>
<tr>
<td></td>
<td>b) low exudate</td>
<td>c) Foam</td>
</tr>
<tr>
<td></td>
<td>c) moderate exudate</td>
<td>d) Alginate or Hydrocolloid fibre</td>
</tr>
<tr>
<td></td>
<td>d) heavy exudates</td>
<td></td>
</tr>
<tr>
<td>S5 &amp;</td>
<td>What would be the cleaning solution for a sloughy wound (non-infected)?</td>
<td>Sodium Chloride 0.9%</td>
</tr>
<tr>
<td>S10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S5 &amp;</td>
<td>What would be the dressing for a sloughy wound with:-</td>
<td>a) Hydrocolloid sheet or Hydrogel</td>
</tr>
<tr>
<td>S10</td>
<td>a) low exudate</td>
<td>b) Hydrocolloid fibre</td>
</tr>
<tr>
<td></td>
<td>b) moderate exudate</td>
<td>c) Alginate and Foam</td>
</tr>
<tr>
<td></td>
<td>c) heavy exudate</td>
<td></td>
</tr>
<tr>
<td>P3</td>
<td>What does the acronym TIME stand for?</td>
<td>Tissue, Infection, Moisture, Edges</td>
</tr>
<tr>
<td>S10 &amp;</td>
<td>Give an example of the following dressings:-</td>
<td>a) C View, Episil Film.</td>
</tr>
<tr>
<td>P4</td>
<td>a) Semipermeable</td>
<td>b) Kaltostat, Sorbsan.</td>
</tr>
<tr>
<td></td>
<td>b) Alginate</td>
<td>c) Granuflex, Comfeel.</td>
</tr>
<tr>
<td></td>
<td>c) Hydrocolloid</td>
<td>d) Activheal Gel, Nugel</td>
</tr>
<tr>
<td></td>
<td>d) Hydrogel</td>
<td>e) Allevyn, Lyofoam, Biatain</td>
</tr>
<tr>
<td></td>
<td>e) Foam</td>
<td></td>
</tr>
<tr>
<td>S3 &amp;</td>
<td>Where would you commence a wound care plan?</td>
<td>Where a wound exists</td>
</tr>
<tr>
<td>P4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CODE</td>
<td>QUESTION</td>
<td>ANSWERS</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>S3 &amp; P4</td>
<td>When would you photograph or trace/illustrate a wound?</td>
<td>All wounds should be measured as part of the wound assessment process, see WAF. Photographs can also be taken, however they must be calibrated with a ruler and consent must be obtained</td>
</tr>
<tr>
<td>S8A</td>
<td>What is the basic procedure that minimises the risk of cross infection?</td>
<td>Hand washing before patient contact and between each patient contact</td>
</tr>
<tr>
<td>S8 B&amp;C</td>
<td>Name two means by which bacteria is transferred:</td>
<td>a) dust particles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) droplet nuclei</td>
</tr>
<tr>
<td>S8</td>
<td>If you are concerned about cross infection, where would you obtain advice?</td>
<td>a) The Infection Control folder</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) The CNS, Infection Control</td>
</tr>
</tbody>
</table>
# WOUND MANAGEMENT STANDARD
## QUESTIONS TO ASK THE PATIENT

<table>
<thead>
<tr>
<th>CODE</th>
<th>QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>P12</td>
<td>Do you know how the wound will be dressed (Dressing name)?</td>
</tr>
<tr>
<td>P12 &amp; O5</td>
<td>Do you know how often you wound will be redressed?</td>
</tr>
<tr>
<td>O6A</td>
<td>Do you find the dressing painful?</td>
</tr>
<tr>
<td>O6B</td>
<td>If yes, were you given painkillers before the dressing?</td>
</tr>
</tbody>
</table>
# Audit Protocol for Tissue Viability Wound Care Standard

**Audit Objective:** To check that patient receive care in line with ratified guidelines on wound management

**Sample:** Two patients and their notes

**Time Frame:** Annually

**Auditor(s):** Tissue Viability Nurse or Nursing Staff responsible for patient

<table>
<thead>
<tr>
<th>Audit Criteria</th>
<th>Structure</th>
<th>Process</th>
<th>Outcome</th>
<th>Method of Data Collection</th>
<th>Points allocated (yes=1) (no = 0)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Has the patient and the wound been assessed by a registered Nurse within 24 hours of admission or the time agreed on the patients wound care plan?</td>
<td>✓</td>
<td></td>
<td>Check</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Is there access to a copy of the SEPT WEL Guidelines on Wound Management (2011)</td>
<td>✓</td>
<td></td>
<td>Check</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 3. Is a) the Wound Assessment Form (WAF) available on the ward for each patient with an open wound?  
   b) Have all wounds present on admission been traced or photographed with written consent  
   c) Is TVS/LUS/Podiatry involved if wound is MRSA positive? | ✓         |         | Check               |                                   |
| 4. Is the pre printed Wound Care Plan template available electronically or in paper. | ✓         |         | Check               |                                   |
| 5. Is (a) Sterile Normal Saline for wound cleansing available and (b) Dressing products available to dress the wound? | ✓         |         | Check               |                                   |
| 6. Are dressing packs available? | ✓         |         | Check               |                                   |
| 7. Is a ruler/instrument to measure the wound available? | ✓         |         | Check               |                                   |
| 8. Can nurses describe the principles of preventing cross infection in relation to:  
   (a) handwashing  
   (b) instruments  
   (c) dust particles and droplet nuclei | ✓         | Nurse Questionnaire |                                   |                                   |
| 9. Are the following multidisciplinary staff available by phone or in person to give advice on wound management:  
   (a) Tissue Viability Nurse Specialist  
   (b) Pharmacist  
   (c) Medical Staff | ✓         |         | Check               |                                   |
<p>| 10. Can nursing staff involved in application of solutions and dressings demonstrate knowledge of the therapeutic and adverse effects of dressings and solutions used? | ✓         |         | Check               |                                   |</p>
<table>
<thead>
<tr>
<th>Audit criteria</th>
<th>Structure</th>
<th>Process</th>
<th>Outcome</th>
<th>Method of Data collection</th>
<th>Points allocated (yes=1) (no = 0)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PROCESS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Is the patient assessed and factors which delay wound healing identified within 24 hours of admission or the agreed time frame on the care plan?</td>
<td>✓</td>
<td></td>
<td></td>
<td>Documentation &amp; Nurse Question</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Are actions instituted to minimise delaying factors?</td>
<td>✓</td>
<td></td>
<td></td>
<td>Documentation &amp; Nurse Question</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Is the patient’s wound assessed according to the TIME Acronym using the WAF?</td>
<td>✓</td>
<td></td>
<td></td>
<td>Documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Is a care plan developed which identifies appropriate: (a) solutions (b) dressing products for wound type</td>
<td>✓</td>
<td></td>
<td></td>
<td>Documentation &amp; Nurse Question</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Is the wound cleansed using solutions identified on the care plan?</td>
<td>✓</td>
<td></td>
<td></td>
<td>Documentation &amp; observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Is the wound dressed using products identified on the care plan?</td>
<td>✓</td>
<td></td>
<td></td>
<td>Documentation &amp; observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Is the wound dressing product applied correctly?</td>
<td>✓</td>
<td></td>
<td></td>
<td>Observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Do the prescription chart and care plan name the same dressing if appropriate?</td>
<td>✓</td>
<td></td>
<td></td>
<td>Documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Are the principles of preventing cross infection adhered to?</td>
<td>✓</td>
<td></td>
<td></td>
<td>Observation &amp; Nurse Questionnaire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Is the wound evaluated at each dressing change or and recordings made on the WAF</td>
<td>✓</td>
<td></td>
<td></td>
<td>Documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Is the care plan revised as the wound classification changes?</td>
<td>✓</td>
<td></td>
<td></td>
<td>Documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Is the patient informed of the nature of: (a) wound dressing? (b) how often it will be changed?</td>
<td>✓</td>
<td></td>
<td></td>
<td>Ask Patient &amp; Check documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Is the patient assessed for pain and discomfort, and are analgesics offered?</td>
<td>✓</td>
<td></td>
<td></td>
<td>Ask Patient &amp; Check documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audit Criteria</td>
<td>Structure</td>
<td>Process</td>
<td>Outcome</td>
<td>Method of Data collection</td>
<td>Points allocated (yes=1) (no = 0)</td>
<td>Comments</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>OUTCOME</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1. Has the patient and the wound been assessed by a registered Nurse within within 24 hours of admission or within the time frame agreed on the care?</td>
<td></td>
<td></td>
<td>✓</td>
<td>Documentatio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Is the cleansing solution appropriate for the classification of the wound?</td>
<td></td>
<td></td>
<td>✓</td>
<td>Documentatio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Is the dressing product used appropriate for the classification of wound?</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Is TVS/LUS/Podiatry involved in all cases of MRSA infection</td>
<td></td>
<td></td>
<td>✓</td>
<td>Documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Is there evidence that the wound is healing (eg reduction in size, depth or improved classification)?</td>
<td></td>
<td></td>
<td>✓</td>
<td>Documentatio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Does the patient know</td>
<td></td>
<td></td>
<td>✓</td>
<td>Ask Patient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) the frequency of dressing changes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) The name of the dressing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(c) that they feel involved in their care</td>
<td></td>
<td></td>
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<tr>
<td>7. Does the patient find</td>
<td></td>
<td></td>
<td>✓</td>
<td>Ask Patient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) the wound dressing painful and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>(b) were they offered analgesics</td>
<td></td>
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</tbody>
</table>
### THE AUDIT RESULTS FOR WOUND CARE STANDARDS

<table>
<thead>
<tr>
<th>KEY FINDINGS</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL POINTS</td>
<td></td>
</tr>
<tr>
<td>POINTS OBTAINED</td>
<td></td>
</tr>
<tr>
<td>PERCENTAGE ACHIEVED</td>
<td>%</td>
</tr>
</tbody>
</table>
## ACTION PLAN

<table>
<thead>
<tr>
<th>PROBLEM IDENTIFIED</th>
<th>SUGGESTED ACTION</th>
<th>STAFF RESPONSIBLE</th>
<th>Proposed Completion Date</th>
<th>Actual Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Appendix 5

Competency Assessment

- Self Assessment Competency Statement
- Clinical Competency framework for Wound Assessment and Management
**Self-Assessment Competency Statement**

**Wound Assessment and Dressing Selection**

<table>
<thead>
<tr>
<th>Surname:</th>
<th>Forename(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept &amp; Ward / Unit:</td>
<td>Job title / designation:</td>
</tr>
</tbody>
</table>

Self-verification of competence is undertaken by assessment against the statements below.

These statements are designed to indicate competence to undertake this skill. If you are in any doubt regarding your competence, you should seek education or advice (consider self-directed learning, clinical experts coaching and formal training) to bring about improvement.

Your statement of competence will provide evidence towards the following dimensions in the knowledge and skills framework:

- Core dimension 1: Communication: Level 3 a,b,c,e,f
- Core dimension 3: Health, Safety and Security: Level 3 a, b, c, d, e
- Core dimension 5: Quality: Level 2 a, b, e, f
- Health and Well Being: 
  - HWB1 Level 1:
  - HWB2 Level 3:
  - HWB5 Level 3:
  - HWB6 Level 2

Carry out an initial assessment. You must be able to answer ‘Yes’ to all the questions before considering yourself to be competent. If you are not competent, instigate learning and then repeat self-verification.

<table>
<thead>
<tr>
<th>Ask yourself the following questions.</th>
<th>Initial assessment date:</th>
<th>Final assessment date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have I read the Trusts guidelines for Wound Management; Pressure Ulcer and Leg Ulcer Management?</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Can I explain the need for a holistic patient assessment in conjunction with a wound assessment?</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Can I explain the different wound types and the stages of healing?</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Can I identify slough, necrotic, granulating and epithelial tissue?</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Can I identify when taking a wound swab is appropriate?</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Do I know which dressings are in the Trust Formulary?</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Can I undertake a wound assessment and complete the relevant assessment form?</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Can I identify the types of dressings which are suitable for different wound types and / or symptoms?</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Can I explain to the patient my rationale for the chosen treatment regime?</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Do I understand the need to gain consent and maintain privacy and dignity throughout the wound assessment and procedure?</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Do I know:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- When an aseptic or clean technique should be undertaken?</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Question</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>What solution should be used to clean acute and chronic wounds?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What the indications and contraindications are for hydrocolloids,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hydrogels, films, and antimicrobial dressings?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How to apply and remove each dressing according to the manufacturer’s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>recommendations to avoid trauma and discomfort?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How to use Topical Negative Pressure, including application, removal,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>trouble shooting and cancellation of pump</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Which dressings may alleviate pain and/or odour?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How long a treatment regime should be adhered to before the treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>is stopped or changed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How to identify a clinical infection?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The difference between contamination, colonisation and infected wounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do I know when to initiate and stop antimicrobial dressings?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do I know how to treat and protect skin surrounding a wound?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do I know when and how to refer to the Tissue Viability Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who to involve in all cases of MRSA Wound infection?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**STATEMENT OF COMPETENCE**

I certify that I am aware of my professional responsibility for continuing professional development and that I am accountable for my actions. With this in mind I make the following statement:

**I am competent to undertake wound assessment and management without further training**

Signature:                                                                                                              Date:

My Team Leader is aware of my competency and evidence of my competency is included within my annual Appraisal.

Team Leader Signature & Name .................................................................

I require further training or supervision before I can undertake wound assessment and management in a competent manner

Signature & Name ........................................................................

Date:.................................

My Team Leader is aware of my competency deficits and my annual appraisal identifies learning needs to be addressed within the next 6 months through training and clinical supervision opportunity within my Team or with the Tissue Viability Service. The Clinical Competency Framework for Wound Assessment and Management will be the method used to direct and record that training and supervision has taken place.

Team Leader Signature & Name...........................................Date:.................................

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Keep this form in your personal portfolio or training record. Ensure your manager has seen the form when completed.

A new self-assessment competency statement must be completed each year for Personal Development Review.

**Indicate how you plan to meet your learning needs:**

By when:
Clinical Competency Framework for Wound Assessment and Management

The aim of this clinical competency framework is to demonstrate that supervised correct wound assessment, application of dressings and completion of an individualised holistic patient wound care plan has been achieved in a productive clinical learning environment.

Name of Student: ..........................................................  Clinical Base assessment undertaken: .........................

Completion of the clinical competencies should be within 2 months from attending SEPT West Essex ½ day training and action any areas identified in the Self Assessment Competency Statement.

Successful completion of competencies has been assessed by:

Name & Signature of clinical assessor: .......................................................... Date: ..../...  
(Primary assessor of wound assessments, application of dressing and completion of care plan)

Name & Signature of clinical assessor: .......................................................... Date: ..../...  
(Secondary assessor, a student may have one or two assessors)

Name & Signature of Team leader: .......................................................... Date: ..../... 

Name & Signature of Assessee: .......................................................... Date: ..../... 

Name & Signature of TVS Lecturer on Wound Management ½ day: .......................................................... Date: ..../... 
( Please attach certificate of Attendance to Competency form)

The Assessee is expected to undertake 2 wound assessments, and complete 2 wound care plans specific to the wound and the patient’s holistic needs assessment. This may be repeated if the student requires further support. 

The assessor must ensure that each individual assessment is signed off at the top of each page.

The assessor must also initial each box relating to the performance criteria of each individual assessment undertaken.

There is a space at the end of each assessment for the student to add comments relating to their performance whilst undertaking each wound assessment and dressing and how they overcame any difficulties they encompassed during the procedure.

Adapted from competency frameworks of Lynfa Edwards and used with permission of @Lynfa Edwards
Developed further be Cathy Malone CNS TVS For WECHS WCP MAR 2010 & Sept 2011
<table>
<thead>
<tr>
<th>Competence</th>
<th>Performance</th>
<th>Evaluation method</th>
<th>Assessment 1</th>
<th>Assessment 2</th>
<th>Assessees Comment relating to performance. How they overcame any difficulties?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has knowledge of underlying medical conditions &amp; holistic assessment of patient and ability to link all these factors with wound healing</td>
<td>1.1 Demonstrates an ability to communicate and explain to patient the rationale for assessment and wound care management.</td>
<td>Questioning &amp; Direct observation</td>
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<td></td>
<td>1.2 Demonstrates understanding of the importance of a Consistent Assessor in wound management and how this translates in practice by frequent reassessments by the Care Plan Initiator for each patient, ensuring continuity of care and adding value and benefit to the level of assessment and care provided.</td>
<td>Questioning &amp; Direct observation</td>
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<td></td>
<td>1.3 Explores patients lay and health beliefs in order to determine ability to adhere and comply with chosen wound management care plan including obtaining patient consent. Identifies other co-morbidities within assessment documentation. Is aware of pain levels and takes action to address pain within care plan.</td>
<td>Questioning &amp; Direct observation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Assesses patients wound taking action to ensure safe practice, Traces wound, WAF completion and care plan production</td>
<td>2.1 Identifies type of wound including classification of tissue, explaining the desired outcome and effect of treatment within the wound management care plan. Correctly completes the wound assessment form (WAF).</td>
<td>Questioning &amp; Direct observation</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>2.2 Correctly chooses a dressing product including demonstration of understanding as to why and when a wound needs redressing.</td>
<td>Questioning &amp; Direct observation</td>
<td></td>
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<tr>
<td></td>
<td>2.3 Correctly applies dressings adhering to infection control practices and completes notes.</td>
<td>Questioning &amp; Direct observation</td>
<td></td>
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<tr>
<td></td>
<td>2.4 Demonstrates understanding of the use of Advanced Wound Care Products such as Topical Negative Pressure &amp; antimicrobials. Demonstrates the skill of how to apply such treatment including trouble shooting a, resolution of therapy problems and cancellation of pump.</td>
<td>Questioning &amp; Direct observation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competence</td>
<td>Performance</td>
<td>Questioning &amp; Direct observation</td>
<td>Assessment 1</td>
<td>Date... ...... Assessors Name &amp; Signature.................</td>
<td>Assessment 2</td>
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<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
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<tr>
<td>3. Identifies and establishes action to protect areas of further risk including pressure injury risk, infection risk, nutrition risk, moving &amp; handling etc</td>
<td>3.1 Care plan and notes reflect adherence and action to address additional risk factors</td>
<td>Questioning &amp; Direct observation</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4. Demonstrates an understanding of the theory of wound types, classification and grading. Knowledge on how identify wound infection</td>
<td>4.1 Aware of Trust wound care, pressure area and leg ulcer guidelines and knows how to access. Aware of NICE guidelines and how to access</td>
<td>Questioning &amp; Direct observation</td>
<td></td>
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<td></td>
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<td></td>
<td>4.2 Knowledge of WECHS Dressing Formulary and how to access. Ability to identify generic dressing types</td>
<td>Questioning &amp; Direct observation</td>
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<td>4.3 Ability to diagnose wound infection, acting appropriately including taking of swab and amending care plans to address the infection</td>
<td>Questioning &amp; Direct observation</td>
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<td></td>
<td>4.4 Aware of involving TVS/LUS/Podiatry for all cases of MRSA infection</td>
<td>Questioning &amp; Direct observation</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Appendix 6

- Wound Care Bundle
# WOUND CARE BUNDLE

## WOUND CARE ACTIONS

1. **Hygiene**  
   Hands are decontaminated immediately before and after each patient contact, using correct hand hygiene technique.  

2. **Personal Protective Equipment**  
   Disposable apron and gloves are worn and disposed of following use and between each patient.

3. **Risk Assessment**  
   Holistic assessment of patient including wound and pain assessment, in line with SEPT West Essex Locality Wound Care Guidelines occurs with all patients with wounds.

4. **Dressings**  
   All wounds are dressed in line with SEPT West Essex Locality Wound Care Guidelines and Dressing Formulary Guidelines.

5. **Documentation**  
   All wound assessments are documented, dated and signed in patient notes within 6 hours of care provision.  
   All wound care is supported with a detailed care plan which is reviewed weekly and updated as the wound progresses.

6. **Patient Information**  
   All patients provided with information on their wound care including frequency of changes and types of dressings in use.

7. **Referral to other Health Care Specialists**  
   Referrals are made to relevant clinicians such as Tissue Viability or Leg Ulcer Services as appropriate where there is failure to progress or when clinically indicated and especially to surgical teams when relevant or podiatrists in the case of diabetic foot ulceration.

8. **Diabetes**  
   Optimal glucose control is maintained in patients with diabetes. Referral to the patients GP or Physician should be made to assess control and treat as required.  
   Referral to the Specialist Community Diabetes Service may be made for Type 1 and

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262 WECHS 2009) Wound Care Guidelines. [www.wepct.uk](http://www.wepct.uk)  
9. Off loading
Any wound on the foot or pressure point should be off loaded including providing appropriate footwear and insoles, this is particularly the case if the patient is diabetic.

10. Pressure Ulcers
All Patients placed on minimum of high specification foam mattress within 2 hours of admission, upgraded to dynamic system if high risk or signs of any pressure ulcers or wounds on pressure points within 6 hours of admission.

11. Communication of Infection status
Clear communication of patients known to be infected or colonised with pathogenic organisms including MRSA, is given to all relevant healthcare providers involved in patient's care.

<table>
<thead>
<tr>
<th>Observation</th>
<th>Care Action 1</th>
<th>Care Action 2</th>
<th>Care Action 3</th>
<th>Care Action 4</th>
<th>Care Action 5</th>
<th>Care Action 6</th>
<th>Care Action 7</th>
<th>Care Action 8</th>
<th>Care Action 9</th>
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<td>5</td>
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<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td></td>
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<tr>
<td>% when action of care was compliant</td>
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<td>80%</td>
<td>80%</td>
<td>100%</td>
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<td>100%</td>
<td>80%</td>
<td>60%</td>
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</table>

267 Tadman J (2011) Input on guidelines email communication. 23/8/11