Purpose
To establish minimum practice standards for general assessment, and management of skin impairment throughout South Metropolitan Health Service (SMHS) and WA Country Health Service (WACHS). This Clinical Practice Standard (CPS) may be used in conjunction with specific site departmental requirements.

Exclusions: Dermatological conditions.

WACHS Clinical Practice Standards to be read in conjunction with the CPS:
- WACHS Patient Hygiene Clinical Practice Standard
- DoH OD 0477/13 Pressure Injury Prevention and Management Policy
- WACHS Split Thickness Skin Grafts Clinical Practice Standard
- WACHS Stoma Management – Faecal and Urinary Clinical Practice Standard
- WACHS Wound Drainage Systems Clinical Practice Standard

Relevant Resources
The following resources may be read in conjunction with the information found in this CPS:
- WoundsWest website:
  - WoundsWest Education
  - WoundsWest Advisory Service.
- Australian Wound Management Association website:
  - AWMA Standards for Wound Management
  - AWMA Bacterial Impact on Wound Healing: From Contamination to Infection
  - AWMA Australian and New Zealand Clinical Practice Guideline for Prevention and Management of Venous Leg Ulcers.
- NHMRC National Evidence-Based Guideline: Prevention, Identification and Management of Foot Complications in Diabetes
- WA Health Networks Model of Care for the High Risk Foot
- International Wound Journal:

Further information relating to specialty areas including Child and Adolescent Health Service (CAHS), Women and Newborn Health Services (WNHS) and Mental Health Services can be found via healthpoint.hdwa.health.wa.gov.au.

Scope
All medical, nursing, midwifery and allied health staff employed within SMHS and WACHS. All health care professionals are to work within their scope of practice appropriate to their level of training and responsibility.

Further information can be found via healthpoint.hdwa.health.wa.gov.au.
Procedural Information

Where care requires specific procedures that may vary in practice across SMHS and WACHS sites, staff should seek senior clinician advice for clarification of site specific guidelines.

1. General Information
   - Definitions
   - Factors Affecting Wound Healing
   - Wounds Post Procedure
2. Patient Monitoring
3. Assessment and Documentation
   - Skin Assessment
   - Wound Assessment
   - Wound Management Plan
   - Wound Photographs
4. Procedural Guideline for Impaired Skin Integrity
   - Patient Support Considerations
   - Wound Infection Prevention Considerations
   - Wound Infection Considerations
   - Wound Cleansing
5. Diagnostic Investigations
6. Discharge Planning
7. Equipment Required
8. Staffing Requirements

Appendix 1: WA Health Comprehensive Skin Assessment Tool
Appendix 2: Wound Assessment and Management
   - Assessment and Management of Wounds Algorithm
Appendix 3: Lower Leg and Foot Ulcer Management
   - Lower Leg Ulcer Management Algorithm
   - Venous Leg Ulcer Management Algorithm – Part 1
   - Venous Leg Ulcer Management Algorithm – Part 2
   - Arterial Leg Ulcer Management Algorithm
   - Mixed Aetiology Leg Ulcer Management Algorithm
   - Foot Ulcer Management Algorithm (neuropathic and neuro-ischaemic)
Appendix 4: Skin Tear Management, and Prevention Strategies
   - Skin Tear Management Algorithm
   - STAR Tool
   - Skin Tear Prevention Strategies
Appendix 5: Burn Management
   - Burn Management Algorithm
   - Burn Management Algorithm – Part 2
Appendix 6: Suture and Staple Removal
Considerations

All patients require a formal pressure injury risk screening, and assessment of skin and nutrition within a minimum of eight hours of presentation.

- Refer to DoH Pressure Injury Prevention and Management Policy (OD0477/13).

Report via Clinical Incident Management System and inform Senior Nursing Staff for non-surgical wounds acquired in hospital, including: skin tears, pressure injuries or self-harm.

- Refer to DoH Clinical Incident Management Policy (OD0421/13).

Where Senior Clinician assistance is required in relation to impaired skin integrity assessment and management, consider the following options where appropriate in relation to the patient’s clinical requirements, site specific guidelines and/or available specialised staffing resources:

- Medical Officer, including Specialist Medical Review, General Practitioner
- Senior Nursing Staff, including Wound Management Nurses, Stomal Therapy Nurses
- Allied Health, including Occupational Therapist, Podiatrist, Physiotherapist
- WoundsWest Advisory Service, contact for Referral Pathway.

For further information refer to:
Operational Directive (OD)/ Information Circular (IC) Search: www.health.wa.gov.au

1. Staff are required to consider and comply with the following relevant Operational Directives:
   - DoH Clinical Incident Management Policy (OD0421/13)
   - DoH OD 0657/16 WA Health Consent to Treatment Policy
   - DoH Pressure Injury Prevention and Management Policy (OD 0477/13)
   - DoH OD 0531/14 Re-use of Single Use Devices

2. Staff are required to consider and comply with the following relevant WACHS policies:
   - WACHS Infection Prevention and Control Policy
   - WACHS Nutrition Clinical Practice Standard
   - WACHS Patient Hygiene Clinical Practice Standard
   - WACHS Split Thickness Skin Grafts Clinical Practice Standard
   - WACHS Stoma Management – Faecal and Urinary Clinical Practice Standard
   - WACHS Wound Drainage Systems Clinical Practice Standard

3. Where relevant to specific patient group, staff are required to consider and comply with the following Australian Aged Care Quality Agency: Accreditation Standards:
   - Standard 2.11 Skin Care: Residents’ skin is consistent with their general health.

General Information

Definitions

- **Skin integrity**: may relate to the normal function of skin as complete healthy tissue, without injury or breaks in continuity\(^1,2\).
- **Wound**: an occurrence where skin integrity has become injured or broken in continuity\(^1\).
- **Acute wound**: a wound of less than six weeks duration that progresses through the phases of healing without delay.
- **Chronic wound**: a wound that deviates from expected sequence of repair in terms of time, appearance and response to appropriate treatment; and does not demonstrate significant signs of healing in six weeks.
- **Delayed healing**: “Healing progresses at a slower rate than expected. As a guide\(^3\):
• in open surgical wounds healing mainly by epithelialisation, the epithelial margin advances at about 5mm per week
• clean pressure ulcers with adequate blood supply and innervation should show signs of healing within two to four weeks
• a reduction in venous leg ulcer surface area of >30% during the first two weeks of treatment is predictive of healing.”

**Full thickness wound:** a wound where tissue damage extends beyond the skin and extends at least into the subcutaneous layer. Tissue damage may also extend to muscle, tendon and/or bone.

**Skin tear:** “is a traumatic wound occurring principally on the extremities of older adults, as a result of friction alone or shearing and friction forces which separate the epidermis from the dermis (partial thickness wound) or which separate both the epidermis and the dermis from underlying structures (full thickness wound).”

Factors Affecting Wound Healing

Wound Management Principles

• Correct diagnosis and treatment appropriate to wound aetiology
• Identification and correction of intrinsic and extrinsic factors affecting wound healing
• Ongoing assessment and appropriate management to facilitate wound healing

Intrinsic Factors

• Decreased blood supply/ tissue perfusion to support wound healing
• Advanced age
• Underlying morbidity, e.g. diabetes mellitus, arterial disease, rheumatoid arthritis
• Malnutrition/ obesity
• Psycho-social well-being

Extrinsic Factors

• Certain medications, e.g. anti-inflammatory agents, corticosteroids, anti-coagulants, immunosuppressive agents, anti-neoplastics, anti-coagulants, and colchicine
• Smoking
• Patients undergoing radiotherapy

Local Factors

• Dressing selection
• Wound bed hydration
• Infection
• Pressure, shear and friction
• Foreign body

Wounds Post-procedure

Where a wound exists following a procedure, monitor and undertake management as per specific:
• site and/or clinical specialty requirements
• post-operative management orders by Medical Officer/ Senior Clinician.

Refer to [Procedural Guideline](#) section for generic wound management advice.

Refer to Appendix 5: [Suture and Staple Removal](#).
Refer to WACHS Procedural Management - Immediate Pre and Post Care Clinical Practice Standard

Patient Monitoring

Individualised management plan to be documented in the patients’ health records as soon as is practicable. At a minimum the plan must consider:

- patient history and diagnosis for clinical conditions, medications, psychosocial and cultural factors that could influence observations
- presence of comorbidities and treatment
- frequency and specific observations
- site requirements, patient education and consent
- any restriction to intervention associated with advance health directives (AHD) or similar

Assessment and Documentation

All patients require skin assessment within a minimum of eight hours to each clinical area to identify any existing wounds or pressure injuries. Refer to Considerations section.

Ensure to undertake: “a comprehensive assessment of the individual, their wound, and/or risk of wounding and their healing environment”\(^5\) p.6.

Failure to accurately and legibly record, and understand what is recorded in patient health records contribute to a decrease in the quality and safety of patient care.

Document the outcome of all assessments, and interventions in the patient health record, including site specific wound management plan. Refer to WACHS Documentation Clinical Practice Standard.

Skin Assessment

In relation to skin assessment ensure to consider and comply with:

- DoH Pressure Injury Prevention and Management Clinical Guideline (OD 0477/13).

Refer to Appendix 1: WA Health Comprehensive Skin Assessment Tool.

Following skin assessment, refer patient to Physiotherapist where indicated for mobility and positioning assessment, where available staffing resources permit.

Following initial skin assessment, ensure to re-assess daily or more frequently for higher risk patients.

Where a patient presents with any of the following wound management issues, leave intact and assess skin at next dressing change:

- compression bandaging
- topical negative pressure therapy
- complex wound drainage system
- wound managed with a dressing changed less frequently than daily.
Ensure to consider the following information to assess and document the patient’s skin condition:

- temperature
- moisture
- integrity
- colour
- altered sensation
- medical devices insitu.

Include patient specific factors, such as:

- past medical and/or surgical history
- co-morbid conditions
- medications, and/or current treatments
- function and psychosocial well-being
- nutritional status.

**Wound Assessment**

Ensure to include the following information to assess and describe the presenting wound:

- type, aetiology and duration of wound
- anatomical location, and dimensions (Length x Width x Depth)
- clinical appearance, odour, amount and type of exudate
- condition of skin surrounding wound
- outcome of pain assessment
- signs of infection, foreign bodies, debris and dressing remnants if present
- skin tear category, or pressure injury stage.

Include patient specific factors, such as:

- past medical and/or surgical history
- co-morbid conditions
- medications, and/or current treatments
- function and psychosocial well-being
- nutritional status, including considering referral to Dietitian for complete nutritional assessment

Include patient environmental factors, such as:

- hospital or community setting
- risks of further skin impairment or infection
- temperature.
Wound Management Plan
In addition to information contained in the Wound Assessment section above, clearly document the following on the wound management plan:
- date of evaluation
- selected dressing
- dressing change frequency
- analgesia requirements
- details of wound.

Wound Photographic Images
Ensure the appropriate written consent is obtained prior to taking wound photographic images as per its intended use.

For SMHS Staff
- Refer to the requirements of the SMHS Consent Policy (SMAHS COC: 08).
- Refer to relevant SMHS site specific policies for taking patient photographic images.

For WACHS Staff
- Refer to the requirements of the WoundsWest Wound Advisory Service, as appropriate.

Where the intended use of the wound photographic image indicates patient consent is required, ensure to utilise the appropriate DoH Communications Photography resources as appropriate:
- Photography Consent Form A – Standard
- Photography Consent Form B – Parent With Children
- Photography Consent Information Sheet

Refer to site specific guidelines regarding the storage and management of wound photographic images in relation to the patient health record.

Clinical Handover
Information exchange should adhere to the WA Health Clinical Handover Policy (iSoBAR).

Compliance Monitoring
Evaluation, audit and feedback processes should be in place to monitor compliance.
Procedural Guideline for Impaired Skin Integrity

Key points prior to commencing any procedure

Patient Support Considerations

Ensure the following considerations are met relating to any wound care interventions:

- The patient has received information prior to the intended intervention and has given appropriate consent.
- Patient identification and procedure matching processes are undertaken.
- Assessment appropriate to patient latex, dressing, surgical adhesive tape or other sensitivities.
- Provide appropriate assessment, and implement strategies to minimise the impact of pain.
- Maintain patient privacy and dignity when exposing the wound area.
- Offer the presence of a chaperone or interpreter where appropriate to patient and clinician requirements.

Wound Infection Prevention Considerations

In conjunction with the information relating to wound infection prevention, refer to:


Personal Protective Equipment (PPE)

Select and include the use of PPE where appropriate to the procedure being undertaken. Ensure to change the PPE between different care activities for the same patient to prevent cross contamination.

Hand Hygiene

Hand hygiene must be carried out:

- Before and after: touching the patient or undertaking a procedure.
- After: touching a patient’s surroundings, a body substance exposure risk or removing gloves.

Clinician judgement is required to select the hand hygiene method appropriate to the situation, including: visibly soiled hands, and/or where removal of certain infective organisms is required.

Soap and Water Hand Hygiene

- Wet hands under tepid running water, apply liquid soap.
- Rub hands together for minimum of 15 seconds, ensure:
  - solution comes into contact with all hand surfaces
  - pay attention to tips of fingers, thumbs and areas between fingers.
- Rinse hands thoroughly under running water, pat dry with single-use towels.

Alcohol-based Hand Rub

- Apply appropriate amount of hand rub onto dry hands.
- Rub hands together for a minimum of 15 seconds, ensure:
  - solution comes into contact with all hand surfaces
  - pay attention to tips of fingers, thumbs and areas between fingers.
- Continue rubbing until the solution has evaporated and hands are dry.
Aseptic Non-touch Technique (ANTT)\textsuperscript{5,6}

As wound care will vary in complexity, clinical judgement will be required regarding selection for either: Standard ANTT, Surgical ANTT or clean wound management technique.

- Appropriate ANTT will be required for undertaking wound care when the patient, their wound and factors affecting healing are compromised.

Clean wound management technique\textsuperscript{5}: washing or showering wounds, when the patient, their wound and factors affecting healing are not compromised. Ensure to:

- Utilise potable water (drinking water intended for human consumption) only\textsuperscript{7}.
- Refer to site specific guidelines where required.

Standard ANTT: requires the use of a non-touch technique, maintained general aseptic field, with critical micro aseptic fields, and non-sterile gloves. Suitable for wounds that are:

- technically simple clinical procedure
- short duration (less than 20 minutes) procedures
- few and small key sites, and key parts.

Surgical ANTT\textsuperscript{6}: requires the use of a main critical aseptic field, with critical micro fields and sterile gloves; often with full barrier precautions, and using non-touch technique where practical.

Suitable for wounds that are:

- technically complex clinical procedures
- extended duration procedures
- large open key sites.

Wound Management Factors\textsuperscript{5,8}

Other factors associated with minimising the risk of wound infection, may include:

- Optimising patient health condition: management of comorbid conditions, smoking cessation, rest, etc.
- Optimising patient nutrition: Liaise with Dietitian regarding Medical Nutrition Therapy and special diet.
- Considering requirements for antibiotic prophylaxis for patients identified at significant risk of wound infection.
- Providing wound care interventions at optimal frequency, and select most appropriate wound care products.
  - Refer to site specific guidelines and resources in relation to wound care.
  - Refer to Appendix 2: \textit{Wound Assessment and Management Algorithm}.
- Performing adequate wound cleansing to remove foreign bodies, debris and dressing remnants.
- Appropriately removal of non-viable wound tissue.
- Undertaking the assessment of clinical signs and symptoms of wound or systemic infection.
### Wound Infection Considerations

In conjunction with the information relating to wound infection considerations, refer to:


**Wound infection** may be described when there is an invasion of micro-organisms significant to overcome patient resistance, disrupt healing and cause damage to tissues. Ensure to treat and manage clinically identified wound infection. Consider that infection may present differently in acute and chronic wounds. Refer to the [Triggers for Suspecting Wound Infection](#) section for further information relating to the clinical signs and symptoms for identifying infection in Acute and Chronic Wounds. Ensure to undertake patient monitoring in relation to wound and systemic infection.

- Refer to [Refer to. Standard 9: Criterion: Recognising clinical deterioration and escalating care. National Safety and Quality Health Service Standards](#)

**Surgical Site Infection**

In relation to surgical site infection surveillance, staff are required to liaise with site specific infection control departments for reporting requirements to comply with:

- DoH *Healthcare Associated Infection Surveillance in Western Australian Healthcare Facilities* (OD 0527/14)
- HISWA *Healthcare Infection Surveillance Western Australia: Surveillance Manual*

Surgical site infection (SSI) relate to those infections occurring in a surgically created, and closed skin or mucous membrane incisional site undertaken within an operating room. Surgical site infections are identified by three criteria based on clinical signs and symptoms.

**Superficial Incisional:** Infections occur only within the skin and subcutaneous tissue of the incision.

**Deep Incisional:** Infections involve the deeper soft tissues (fascial and muscle layers) of the incision.

**Deep Incisional:** Infections involve the organ or spaces opened and manipulated during the operative procedure.

There may also be the presence of organisms cultured from aseptically collected incisional fluid/ tissue. However, positive wound cultures without the presence of clinical signs and symptoms are usually insufficient to indicate SSI.
### Triggers for Suspecting Wound Infection

#### Acute Wounds: e.g. surgical or traumatic wounds, or burns

<table>
<thead>
<tr>
<th>Localised Infection</th>
<th>Spreading Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Classical signs and symptoms:</td>
<td>• As for localised infection, plus:</td>
</tr>
<tr>
<td>• new or increasing pain</td>
<td>• further extension of erythema</td>
</tr>
<tr>
<td>• erythema</td>
<td>• lymphangitis</td>
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<tr>
<td>• local warmth</td>
<td>• crepitus in soft tissues</td>
</tr>
<tr>
<td>• swelling</td>
<td>• wound breakdown/ dehiscence.</td>
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<tr>
<td>• purulent discharge.</td>
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<tr>
<td>• Pyrexia: in surgical wounds typically five to seven days post-surgery</td>
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</tr>
<tr>
<td>• Delayed (or stalled) healing</td>
<td></td>
</tr>
<tr>
<td>• Abscess</td>
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<tr>
<td>• Malodour</td>
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</tbody>
</table>

Notes:  
• Burns: also skin graft rejection; pain is not always a feature of infection in full thickness burns  
• Deep wounds: induration, extension of the wound, unexplained increased white cell count or signs of sepsis may be signs of deep wound (i.e. subfascial) infection  
• Immunocompromised patients: signs and symptoms may be modified and less obvious

#### Systemic Infection

| Sepsis: documented infection with pyrexia or hypothermia, tachycardia, tachypnoea, raised or depressed white blood cell count |
| Severe sepsis: sepsis and multiple organ dysfunction |
| Septic shock: sepsis and hypotension despite adequate volume resuscitation |
| Death |

Notes: Exclude other sites of infections before assuming that systemic infection is related to wound infection.

#### Chronic Wounds: e.g. diabetic foot ulcers, venous leg ulcers, arterial leg/foot ulcers or pressure ulcers

<table>
<thead>
<tr>
<th>Localised infection</th>
<th>Spreading infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>• New, increased or altered pain*</td>
<td>• As for localised infection plus:</td>
</tr>
<tr>
<td>• Delayed (or stalled) healing*</td>
<td>• wound breakdown*</td>
</tr>
<tr>
<td>• Periwound oedema</td>
<td>• erythema extending from wound edge</td>
</tr>
<tr>
<td>• Bleeding or friable (easily damaged) granulation tissue</td>
<td>• crepitus, warmth, induration or discoulouration spreading into periwound area</td>
</tr>
<tr>
<td>• Distinctive malodour or change in odour</td>
<td>• lymphangitis</td>
</tr>
<tr>
<td>• Wound bed discoulouration</td>
<td>• malaise or other non-specific deterioration in patient’s general condition.</td>
</tr>
<tr>
<td>• Increased or altered/ purulent exudate</td>
<td></td>
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<tr>
<td>• Induration</td>
<td></td>
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<tr>
<td>• Pocketing</td>
<td></td>
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<tr>
<td>• Bridging</td>
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</tbody>
</table>

Notes:  
• In patients who are immunocompromised and/or who have motor or sensory neuropathies, symptoms may be modified and less obvious. For example, a diabetic patient with an infected foot ulcer and peripheral neuropathy, pain may not be a prominent feature.  
• Arterial ulcers: previously dry ulcers may become wet when infected.  
• Clinicians should also be aware that in the diabetic foot, inflammation is not necessarily indicative of infection. For example, inflammation may be associated with Charcot’s arthropathy. |

*Individually highly indicative of infection, Infection is also likely in the presence of two or more of the other signs listed.

**Wound Cleansing**

Consider the following information in relation to clinical judgement when selecting either: Standard ANTT, Surgical ANTT or clean wound management technique.

- Refer also to [Aseptic Non-touch Technique (ANTT)](#) section.

In conjunction with the information relating to wound cleansing considerations, refer to:

- [WoundsWest Education: Core Module](#).
- [WoundsWest Advisory Service](#).

**Wound Care Management Technique**

Clinician judgement is required to select the wound care management technique appropriate to the patient’s presenting wound, in conjunction with their specific clinical risk factors.

For patients with venous access devices refer to WACHS [Vascular Access Devices Management Clinical Practice Standard](#) for management advice.

Consider cleansing the following wounds in the shower (where potable water supply utilised):

- surgical wounds healed by primary intention
- lacerations and abrasions
- chronic wounds with no undermining or underlying structures on view.

Wounds not suitable for cleansing in the shower include:

- wherever vessel, bone, tendon or other underlying structures are in view
- when the patient is immunocompromised;
- consult with Senior Clinician for patients with diabetes and/or peripheral arterial disease
- actively bleeding wounds
- undermined wounds
- infected wounds.

**Wound Care Environment**

Ensure to restrict activities around the patients bed or treatment area to reduce environmental cross contamination, this may include: bed making or room cleaning activities.

When selecting a surface to prepare and set wound care equipment, utilise clinical judgement in relation to the:

- complexity of the wound
- patient condition
- environment
- requirements for maintaining principles of ANTT
- suitable options (resources) available of the treatment surroundings.

Consider the personal and clinical requirements of the patient in relation to wound care. Refer to [Patient Support Considerations](#) section.
Cleansing Solutions
When selecting a solution for cleansing the wound, utilise clinical judgement in relation to the: complexity of the wound, and patient condition. Consider the following information:
- Sodium chloride 0.9% is isotonic and does not interfere with the normal healing process, damaged tissue, cause sensitization, allergies or alter normal skin flora.
- Cleansing acute and chronic wounds with potable tap water (drinking water intended for human consumption) does not increase infection rates.

For infected wounds consider cleansing with a suitable antiseptic agent, e.g. Polyhexamethylene Biguanide (PHMB): Prontosan® Wound Irrigation Solution. Refer to patient specific treatment orders, and site specific guidelines.

Diagnostic Investigations
Consider undertaking diagnostic investigations where clinically indicated to assist with ascertaining and monitoring the wound:
- aetiology
- associated diagnosis
- healing potential
- management interventions
- assessment outcomes.

Discharge Planning
Ensure to anticipate and plan continuity of wound management for those patients being discharged either across the continuum of clinician provided care, or to self-care.

Where patients require wound care on discharge to clinical service provided care, e.g. Silver Chain consider the following requirements:
- Ensure referral and current wound management plan are supplied to service provider.
- Provide dressing products on discharge.
  - Metropolitan areas – 3 days supply.
  - Rural areas – 7 days supply.

Provide information to the patient regarding:
- Any follow-up appointments, and/or service referrals.

Provide education to the patient regarding reporting to General Practitioner/ service provider in relation to adverse signs and symptoms:
- infection
- wound deterioration
- other clinical concerns, e.g. pain or bleeding.

Refer also to WACHS Patient Discharge, Escort, Transfer and Transportation Clinical Practice Standard
Equipment Required

For specific advice regarding wound care products refer to site specific wound management services where available, or contact:

- **WoundsWest Advisory Service**

Wound care products are generally limited to those items available on the current procurement tender. Specific wound dressing products not available on tender may be ordered as required.

All sterile wound care products are intended for single-use only.

Staffing Requirements

Staff involved in the assessment and management of impaired skin integrity are required to maintain the level of competency that is required for undertaking their specific role.

Conservative sharp wound debridement is only to be undertaken by clinicians with the required scope of practice.

Staff required to perform wound care will be dependent upon wound presentation, location, patient clinical condition and comorbidities.

**Medical Staff**
Provide orders for specific post-procedural care orders, and removal of sutures, staples and drains.
Provide prescription on medication chart where appropriate for certain topical skin or wound care products. Refer to **WACHS Medication Administration Policy**

**Nurse Practitioner**
Undertake advanced wound care management techniques, and provide prescription for topical and systemic medications as per defined scope of practice.

**Wound Management Senior Nursing Staff**
Provide advice and information for the appropriate management of presenting wounds.
Refer to **WoundsWest Advisory Service** where required.
Refer to appropriate Allied Health Staff where appropriate and available: e.g. Dietitian, Podiatrist.

**Nursing Staff**
Undertake and document comprehensive skin and wound assessment and management. Liaise with Senior Clinician or Wound Management Staff, where available, where wound management advice or information is required.
**Dietitian**
Review nutritional status and requirements, where patients present with a chronic or large wound.
Recommend appropriate Medical Nutrition Therapy, including Nutrition Supplements where required.

**Occupational Therapist**
Measure, prescribe, fit, and follow-up wearing regime for specialised equipment for pressure injury prevention, and compression garments in relation to burns, scar and/or lymphoedema management.

**Podiatrist**
Review wounds presenting on foot or ankle.

**Physiotherapist**
Undertake patient mobility and positioning assessment in relation to preventing skin integrity impairment.
Provide therapeutic interventions to manage lymphoedema.
Undertake wound management in consultation with Senior Clinical Staff as appropriate to specialist clinical area, and/or in conjunction with specialty clinical model of care, e.g. Hand therapy centre, amputee rehabilitation.
Liaise with Senior Clinician or Wound Management Staff where appropriate.
Acknowledgement of previous site endorsed work used to compile this standard

We would like to thank the following people for their contribution to the project:

AHS, Surgical Sutures, Removal Of, Clinical Policy Manual, 2010
  MacLean, T – Designation Undocumented

AHS, Surgical Staples, Removal Of, Clinical Policy Manual, 2010
  MacLean, T – Designation Undocumented

BHS, Wound Management – Maintenance of Skin Integrity, Nursing Practice Manual, 2012
  Director of Nursing

AHS, Skin Tear Prevention and Management, Nursing Practice Manual Policy, 2012
  Brown, L – CNS Wound Care/ Stomal Therapy

FHHS, Skin Tear, Prevention and Management Guidelines, NPM470, 2010
  Page-Burt, G – NM Research and Evaluation

AHS, Wound Management, Nursing Practice Manual Policy, 2010
  Williamson, C – Designation Undocumented
  Ashton, M - Designation Undocumented
  Carr, N – SQuIRe Project Officer, Pressure Ulcer Prevention

FHHS, Wound Management Guidelines, NPM661, 2010
  Gilmour, R – CNC Stomal Therapy/ Wound Care
  King, A – CN Stomal Therapy

RPH, Wound Management Nursing Practice Standard, 2013
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Legislation
Acts Amendment (Consent to Medical Treatment) Act 2008
Aged Care Act 1997
Australian Aged Care Quality Agency Act 2013
Carers Recognition Act 2004
Civil Liability Act 2002
Disability Services Act 1993
Guardianship and Administration Act 1990
Health Practitioner Regulation National Law (WA) Act 2010
Mental Health Act 1996
Occupational Safety and Health Act 1984
Occupational Safety and Health Regulations 1996
OSH Regulations, 1996
Poisons Act 1964
Poisons Regulations 1965
Poisons Amendment Regulations 2010
Public Sector Management Act, 1994
State Records Act 2000 - The children and community Services Amendment (Reporting Sexual Abuse of Children) Act 2008
The Children and Community Services Amendment Bill 2010

Standards
Australian Aged Care Quality Agency www.aacqa.gov.au (Aged Care Accreditation Standard 2)
EQuIPNational www.achs.org.au/
National Standards for Mental Health Services (NSHMS)
WA Department of Health Policies (Operational Directives)

healthpoint.hdwa.health.wa.gov.au
www.health.wa.gov.au

Clinical and Related Waste Management – Clinical Wastes (OD 0259/09)
Clinical Handover Policy (OD 0484/14)
Clinical Incident Management Policy, 2012 (OD 0421/13)
Consent to Treatment Policy for the Western Australian health system, 2011 (OD 0324/11)
Correct Patient, Correct Site and Correct Procedure Policy and Guideline for WA Health Services 2nd Edition (OD 0004/06)
Healthcare Associated Infection Surveillance in Western Australia (OD 0197/09)
Implementation of the Australian Health Service Safety and Quality Accreditation Scheme and the National Safety and Quality Health Service Standards in Western Australia (OD 0410/12)
National Hand Hygiene Initiative in Western Australian Healthcare Facilities (OD 0429/13)
Post-Fall Management Guidelines in Western Australian Healthcare Settings (OD 0442/13)
Pressure Injury Prevention and Management Policy (OD 0477/13)
The Policy for Credentialling and Scope of Clinical Practice for Medical Practitioners 2nd Edition 2009 (OD 0177/09)
WA Health Clinical Deterioration Policy (OD 0501/14)
Western Australian Patient Identification Policy 2010 (OD 0312/10)

SMHS Policies

healthpoint.hdwa.health.wa.gov.au
Aboriginal and Multicultural Groups (SMAHS CF: 02)
Bariatric Management: (SMAHS COC: 06)
Consumer and Carer Participation: (SMAHS CF: 03)
Consumer and Carer Participation in Mental Health: (SMHS CF: 07)
Health Record Documentation Policy and Standards (SMAHS COC: 03)
Infection Prevention and Management Policy (SMHS PS:06)
Mandatory Training Governance Policy (SMHS HR: 04)
OSH: Manual Handling (SMAHS SPE: 04)
Single Use/Single Patient Use Medical Devices: (SMAHS SPE: 40)
**Standardised Logos**

EQuIP National [www.achs.org.au](http://www.achs.org.au/)

<table>
<thead>
<tr>
<th>Governance for Safety and Quality in Health Service Organisations</th>
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<tr>
<td>Partnering with Consumers</td>
</tr>
<tr>
<td>Preventing and Controlling Healthcare Associated Infections</td>
</tr>
<tr>
<td>Medication Safety</td>
</tr>
<tr>
<td>Patient Identification and Procedure Matching</td>
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<tr>
<td>Clinical Handover</td>
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</table>

**WA Department of Health iSoBAR - Guide to Handover Content and Structure**

<table>
<thead>
<tr>
<th>i</th>
<th>IDENTIFY</th>
<th>Introduce yourself and your patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>SITUATION</td>
<td>Describe the reason for handing over</td>
</tr>
<tr>
<td>o</td>
<td>OBSERVATIONS</td>
<td>Include vital signs and assessments</td>
</tr>
<tr>
<td>b</td>
<td>BACKGROUND</td>
<td>Pertinent patient information</td>
</tr>
<tr>
<td>a</td>
<td>AGREE A PLAN</td>
<td>Given the situation, what needs to happen</td>
</tr>
<tr>
<td>r</td>
<td>READ BACK</td>
<td>Clarify shared understanding</td>
</tr>
</tbody>
</table>

**Blood and Blood Products**

**Preventing and Managing Pressure Injuries**

**Recognising and Responding to Clinical Deterioration in Health Care**

**Preventing Falls and Harm from Falls**

**Service Delivery**

**Provision of Care**

**Workforce Planning and Management**

**Information Management**

**Corporate Systems and Safety**
Appendix 1: WA Health Comprehensive Skin Assessment Tool

Ensure to consider and comply with the following.

- DoH Pressure Injury Prevention and Management Policy (OD 0477/13)

<table>
<thead>
<tr>
<th>Skin Characteristics</th>
<th>Description</th>
<th>Impaired skin characteristics</th>
<th>Identify the location using the code provided:</th>
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<tbody>
<tr>
<td>Temperature</td>
<td>Cooler than normal</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Warmer than normal/hot</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hot/ very inflamed</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Moisture</td>
<td>Dry</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>More to touch</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Turgor* - gently lift skin on the back of patient's hand between your thumb and index finger</td>
<td>Normal (&lt;3 seconds)</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Impaired (1 &gt;3 seconds)</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oedema</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Induration</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Integrity</td>
<td>Fragile</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure injury</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flake / scale</td>
<td>☐</td>
<td></td>
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<tr>
<td></td>
<td>Rash</td>
<td>☐</td>
<td></td>
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<tr>
<td></td>
<td>Wound</td>
<td>☐</td>
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<td></td>
<td>Scarring</td>
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<td></td>
<td>Callus</td>
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<tr>
<td></td>
<td>Cellulitis</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Known skin disorder - Specify type</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>Taking into account the person's natural skin colour e.g. caucasian or darker skin tone</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Altered sensation</td>
<td>Nummosity / change</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Burning</td>
<td>☐</td>
<td></td>
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<tr>
<td></td>
<td>Itching</td>
<td>☐</td>
<td></td>
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<tr>
<td></td>
<td>Pain</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Medical devices inset (circle or describe)</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For infants and neonates please consider gestational age
### WA Comprehensive Skin Assessment Tool – Page 2

#### Actions:
- Implement skin protection strategies
- Initiate pressure redistribution support surface
- Undertake wound assessment if required
- Initiate patient and family/carer education
- Discuss the patient's skin integrity and skin protection strategies with the patient/carer

#### Initiate referral to (as required):
- Wound Care Nurse/CNS/CNM/NP(Wound Mx)
- Stomal Therapy Nurse
- Medical Officer
- Allied health
- Other ____________________________

### Initial skin assessment completed:
- **Skin intact** (or able patient states skin intact)

<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>Comments</th>
<th>Signature and designation</th>
</tr>
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<tbody>
<tr>
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</table>

### Re-Assessment:

<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>Skin intact Y/N</th>
<th>New issue, deterioration or action (describe)</th>
<th>Signature and designation</th>
</tr>
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</tbody>
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Appendix 2: Wound Assessment and Management

Wound Assessment and Management Algorithm

Assessment and Management of Wounds Algorithm

Comprehensive Assessment of Person with Wound
- Identifying underlying disease or factors that may inhibit wound healing

Evidence of Critical Colonisation
- Hypergranulation
- Fragile granulation tissue
- Delayed tissue healing
- Drilled wound edges
- Increased exudate
- Unstable tissue/edges

Evidence of infection
- Heat
- Pain
- Erythema
- Infected exudate
- Malaise
- Pyrexia

Goal of Care: Debridement
- Autolytic - Hydrogel - Hydrocolloids - Mepilex
- Saline Chemical - Desiccating (Silver, Iodoform, Hyperamine)
- Mechanical - Low Frequency Ultrasonic
- Laser therapy
- Conservative sharp wound debridement
- Chemical debridement

*Debridement is contraindicated when there is inadequate blood flow to support healing and/or infection control

Wound dressing: Light
- Hydrogels
- Hydrocolloids
- Saline-dripping dressings
- Tubulars
- Iodised dressings
- Low adherence
- Silicone coated

Secondary dressing if required for absorption or protection

Referral options
- WoundsWest Wound Service - 1300 844 (800) 6070
- 0800 (Specialist medical review)
- Specialist Wound Nurse

Adapted by WoundsWest 2013 with permission of Silver Chan

WoundsWest 2013 “Assessment and Management of Wounds Algorithm”. WoundsWest, Public Health and Ambulatory Care, North Metropolitan Health Service, Reproduced with permission.
Appendix 3: Lower Leg and Foot Ulcer Management\textsuperscript{13-17}

Lower Leg Ulcer Management Algorithm

\begin{itemize}
  \item Assessment (include)
    \begin{itemize}
      \item Diabetes
      \item Cardiovascular disorders
      \item Respiratory disorders
      \item Pain – characteristics, triggers, alleviators
      \item Wound
      \item Functional ability (include joint and muscle disorders affecting lower limbs)
      \item Psychosocial
      \item Obesity
      \item Auto immune conditions
    \end{itemize}
  \item Past history
    \begin{itemize}
      \item Surgery/trauma/fractures to lower limbs
      \item OYTFPE
      \item Pregnancies
      \item Varicose veins
      \item Malignancy
    \end{itemize}
  \item Family history
    \begin{itemize}
      \item Leg ulceration
      \item Cardiovascular disorders
    \end{itemize}
  \item Lifestyle
    \begin{itemize}
      \item Occupation
      \item Activity level
      \item Smoking
      \item Alcohol use
    \end{itemize}
  \item Comprehensive Assessment
    \begin{itemize}
      \item Patient
      \item Wound
      \item Environment
    \end{itemize}
  \item Contra-lateral examination of lower limbs
    \begin{itemize}
      \item Observation
      \item Colour of legs/feet
      \item Haemoglobin staining
      \item Sensation/previous ulceration
      \item Location of ulcer
      \item Hair growth
      \item Oedema
      \item Signs of local or systemic infection
      \item Capillary refill time
      \item Palpate
      \item Femoral, popliteal, dorsalis pedis & posterior tibial pulses
      \item Temperature of legs & feet
    \end{itemize}
  \item Wound assessment (digital image, planimetry)
    \begin{itemize}
      \item Location
      \item Dimensions
      \item Clinical appearance & tissue
      \item Exudate type, colour and amount
      \item Wound edges
      \item Pen wound skin
    \end{itemize}

\textbf{Is the underlying aetiology identified?}

\begin{itemize}
  \item Yes
    \begin{itemize}
      \item Proceed to venous ulcer algorithm
    \end{itemize}
  \item No
    \begin{itemize}
      \item Referral options
        \begin{itemize}
          \item WoundsWest Advisory Service - 1300 Wounds (1300 060 037)
          \item Vascular Specialist
          \item Specialist Wound Nurse
        \end{itemize}
    \end{itemize}
\end{itemize}

WoundsWest 2013 “Assessment and Management of Wounds Algorithm”. WoundsWest, Public Health and Ambulatory Care, North Metropolitan Health Service, Reproduced with permission.

\begin{table}
\begin{tabular}{|l|l|l|l|}
\hline
Contact: & Program Officer Clinical Practice Standards (M.Weston) & \\
Directorate: & Medical Services & \\
WACHS Version: & 1.00 & Date next review: & 18/12/2016 & \\
TRIM Record # & ED-CO-15-92979 & Date Published: & 2016 & \\
\hline
\end{tabular}
\end{table}
Venous Leg Ulcer Management Algorithm – Part 1

**Assessment**

- Assess wound
  - **Wound Characteristics**
    - Location generally gaiter area
    - Dimensions - large, shallow, irregular shape
    - Ulcerate - moderate to large
    - Pain - dull, heavy
    - Tissue type - generally nodular, not able unless infected
    - Periwound skin - geomembranous
    - Odor - only if infected
  - Associated Livedo changes
    - Dacryoadenitis (tear gland injury)
    - Lipodermatosclerosis
    - Haemorrhagic sinning
    - Varicose veins
    - Dermatitis/cutema
    - Apple flare
    - Atrophic blanche

- Assess the individual and their environment
  - **Predisposing factors**
    - Previous history DVT/PE
    - History of trauma/surgery to lower leg
    - History/trigger of venous insufficiency
    - Obesity
    - Impaired calf muscle pump/activity
    - Reduced ankle joint mobility
    - Prosthetic, standing or sitting
    - Advanced age
    - Multiple pregnancies

**Vascular assessment**

- Pulse points - palpate present
- Ankle Brachial Pressure Index
- 0.8-1.2 is sufficient arterial flow to support the use of lower leg compression therapy

**Management**

- **Principles of care:**
  - Mask wound healing
  - Wound care
  - Infection prevention
  - Tissue management
  - Goal: Debilitate non-viable tissue
    - Avulsion
    - Mechanical
    - Chemical
    - CWMD
    - Surgical

- **Interprofessional support and referral**
  - Physiotherapy
  - Optimize mobility
  - Dietetics
  - Nutrition support
  - Medical review
  - Topical treatments
    - E.g., venous ointment
  - Control conditions
  - Medication

- **Referral if indicated**
  - WoundsWest Advisory Service
  - 1300 Wounds (1300 968 637)
  - Vascular Specialist
  - Nurse Specialist NP

**Interference/Dehydration Control**

- Goal: Restore intracellular balance
- Goal: Maintain moisture balance
- Goal: Promote epithelial advancement
- See over for dressing choices

**Hygiene**

- Wash leg, debride scale, measure skin
- Use aseptic technique for wound cleansing if increased risk of infection

**Prevent recurrence**

- **Patient and carer education:**
  - Skin care (wash and moisturize daily)
  - Exercise and promote circulation
  - Weight control
  - Graduated compression hosiery and replacement
  - Seek early health care for wounds to lower limbs
  - Ongoing review (ABR): minimum yearly or if significant change

---


Venous Leg Ulcer Management Algorithm – Part 2

Lower leg compression therapy

**Elastic bandages** (stiff, short stretch)
1. Padding
2. Short stretch x 2

**Examples**
- Comprilan™
- Venasil™
- Rosidal™
- Lembu-static™
- X-Lembut™

3. + Elastic tubular support bandage

**Elastic bandages** (long stretch)
1. Padding
2. Long stretch bandage

**Examples**
- Tensorwrap™
- Elastoplast™
- Duraelastic™
- Stelastape™
- Tensor™
- Sanpress™
- X-Lembut™

3. + Elastic tubular support bandage

**Multi-component systems**
2 layer system
1. Padding
2. Conformable/latex adhesive bandage

**Examples**
- Coban 2 layerlite™
- Profole™
- Pro-l™

3 layer system
1. Padding
2. Crepe
3. Conformable bandage

**Examples**
- Prefer® Lite™

4 layer system
1. Padding
2. Crepe
3. Long stretch bandage
4. Adhesive bandage

**Examples**
- Prefer®
- Veno 4™

**Pneumatic compression pump**
May be used in isolation or in conjunction with compression bandaging. Frequency and duration as prescribed by medical officer.

**Examples**
- Fiberton plus™
- (intermittent sequential)
- Fiberton DVT™
- Sequential sequential™
- AV Impulse Foot pump™
- Sequential Circulator™
- Active care (portable) DVT System™

**Graduated compression hosiery**
Moderate (20 – 40mmHg)

**Examples**
- Venoseam™
- Jobst™
- Sigvaris™
- Silversonic™
- Venous shap™
- Mediven™

---


Arterial Leg Ulcer Management Algorithm

**Assessment**

Assess wound and lower limb
- Wound characteristics
  - Location often over bony prominences
  - Dimensions - can be deep
  - Exudate - often dry
  - Wound edges - well demarcated (punched out appearance)
  - Tissue type - pale base, can be necrotic
  - Pain - moderate to severe

Associated risk factors:
- Thin, shiny dry skin (risk of attachment)
- Absence of hair growth
- Limb may be cool
- Thinner skin layers
- May have associated neurotrophic

Assess the individual and their environment
- Pre-existing flesh wounds
  - Anesthesia
  - Advanced age
  - Diabetes
  - Hypertension
  - History of smoking
  - Ischemic heart disease
  - Hyperlipidaemia/hypertension/atherosclerosis
  - Pain and paresthesia on leg elevation
  - Real pain or draisation

**Management**

Principles of care
- Minimise risk of infection
- Symptom management

Tissue management
- Determine contraindication when insufficient blood flow to support wound healing and infection control
- Do not divide dry, stable exudate – keep dry

Infection/Inflammation Control
- In the presence of diabetes and reduced blood flow, normal signs of clinical infection may be suppressed
- Adopt wound cleansing technique
  - Topical anti-microbial dressing
  - Systemic antibiotics if host infection

Moisture balance
- Consider absorbent dressing if wound models
- Avoid dressings that add moisture

Advancing wound edges
- Prevent damage to peripheral skin
- Avoid subcutaneous and tissue
- Foam dressings after covering and protection

**Interprofessional support and referral**
- Medical management
  - Optimal control of comorbid conditions e.g. diabetes, hypertension, hypothyroidism
  - Review of medications
  - Pain management – WhO pain ladder

Referred if indicated
- WoundsWest Advisory Service 1300 Wound 1300 966927
- Vascular Specialist
- Nurse Specialist
- Podiatry

**Hygiene**
- Wash hands at each dressing change and moisturise limb lightly

**Prevent recurrence**

**Goals of care**
- Patient and carer education
- Prevent mechanical trauma to legs and feet
- Daily inspection of legs and feet
- Cease smoking
- Daily skin hygiene and regular moisturising
- Maintain foot in dependent position
- Regular ambulation supervised as tolerated
- Wear fitting shoes
- Elevate head of bed
- Avoid restrictive clothing
- Prevent thermal trauma

Patient and carer education
- Skin care (wash and moisturise daily)
- Exercise and promote circulation
- Weight control
- Seek early health care for wounds over 30mm
- Ongoing review (ABP minimum yearly or if significant change)

Mixed Aetiology Leg Ulcer Management Algorithm

Assessment

- Assess wound and lower limb
  - Yellow Characteristics
  - Can demonstrate a combination of both venous and arterial characteristics of ulcer and lower limb

Vascular assessment
- Palpate pulses
  - Ankle Brachial Pressure Index: 0.51 – 0.79 and > 1.2:
    - ABPI 1.3 may be indicative of occluded vessels
    - The higher the reading the greater the likelihood of arterial involvement
    - The lower the ABPI, the more severe the arterial impairment
    - In the presence of venous insufficiency these ulcers are managed as mixed aetiology

Management

Principles of care:
- Prevent infection
- Promote venous return without facilitating arterial compromise

Tissue Management
- Goal: Debride non-viable tissue (optimal if sufficient blood flow to support healing and infection control)
- Autolytic: hydrogel, hydrofibres
- Mechanical – wet to dry dressings
- Chemical – iodine-based, hyperemic saline
- CGM

Infection/Inflammation Control
- Goal: Restore bacterial balance
- Topical antibiotic/antiseptic dressings

Moisture balance
- Goal: promote moisture balance

Advancing wound edges
- Goal: promote epithelial advancement

Hygiene
- Wash limb at each dressing change and moisture lightly

Interprofessional support and referral
- Medical management
  - Optimal control of comorbid conditions e.g. diabetes, hypertension, hyperlipidaemia
  - Review of medications
  - Pain management – WHO pain ladder

Lower leg compression (< 30 mmHg)
- (indicated by ABPI and patient tolerance)
- IF ABPI 0.51 – 0.65: 141 – 15
- IF ABPI 0.66 – 0.8: 21 – 15
- Apply support or light compression bandages:
  - Support hose e.g. Elasticrop+ Heavy
  - Light compression e.g. LastoSof+ Soft
  - Light Bandage systems e.g. ProLene Lite+, ConnerLite™

Refer for vascular consultation
Management of underlying disease
- Referral to vascular specialist
- WoundsWest Advisory Service 1300 Wounds (1300 968832)
- Nurse Specialist – Wounds
- Podiatry

Prevent recurrence

Patient and carer education:
- Skin care (wash and moisturise daily)
- Exercise and promote circulation
- Weight control
- Reduced level of compression hosiery and replacement
- Seek early health care for wounds to lower limbs
- Ongoing review (ABPI minimum yearly or if significant change)

Contact: Program Officer Clinical Practice Standards (M. Weston)
Directorate: Medical Services
TRIM Record #: ED-CO-15-92979
WACHS Version: 1.00 Date next review: 18/12/2016 Date Published: 2016

Foot Ulcer Management Algorithm (neuropathic and neuro-ischaemic)

This flow chart can be used to guide you through the assessment and management process for foot ulcers.

**Neuropathic**
- Assess wound and lower limb
  - Wound Characteristics
    - Plantar surface of foot
    - Calcaneal ulcer
    - Often undermined
    - Often painful
  - Associated foot changes
    - Loss of protective sensation
    - Dry/cracked skin
    - Temperature changes
    - Reduction/absence of hair growth
    - Foot/leg deformity
    - Hammer/nail toes
    - Thickened toenails

**Assess the individual and their environment**
- Requiring factors
  - Diabetes
  - Neurological conditions
  - Trauma
  - Cardiovascular disorders
  - Smoking
  - Previous ulceration/abnormal
  - Contributing factors
    - Ill-fitting footwear

**Ischaemic**
- Assess wound and lower limb
  - Wound Characteristics
    - Over bony prominence
    - Fused but appearance
    - Fails to heal
    - Moderate-severe pain
  - Associated foot changes
    - Reducing temperature
    - Reduced/absent pulses
    - Infection/elevation
    - Thickened toenails
    - Altered skin colour

**Neuro-Ischaemic**
- Ulcer and feet can have combination of both ischaemic and neuropathic characteristics

**Management**

**Principles of care**
- Minimization of risk of infection
- Offload pressure

**Tissue Management**
- Debridement contraindicated when insufficient blood flow to support wound healing and infection control
- Do not evade dry, stable exudates – keep dry

**Infection/Inflammation Control**
- In the presence of diabetes and reduced blood flow, normal signs of clinical infection may be suppressed
- Systemic antibiotics/antibacterial dressings
- Topical antimicrobial dressings

**Interprofessional support and referral**
- Medical management
  - Optimal control of comorbid conditions e.g. diabetes, hypertension, hypothyroidism
  - Review of medications
  - Pain management – WHO pain ladder

**Referral if indicated**
- WoundsWest Advisory Service 1300 858 857
- Vascular Specialist
- Nurse Specialist
- Podiatrist
- MDFRC

**Goals of care**
- Referral to a multidisciplinary foot ulcer clinic
- Management of underlying comorbid conditions

**Patient and care education**
- Skin care
- Daily inspection of legs, feet, shoes
- Avoid walking barefoot
- Specialist advice on footwear
- Prevention of mechanical/thermal trauma
- Regular medical/podiatry review
- Regular amputation/monitoring
- Clipping
- Maintain foot in dependent position if ischaemic

**Pressure offloading**
- Accommodative padding
- Temporary footwear
- Moulded sandals
- Casting/plaster

**Private record**

**WoundsWest Foot Ulcer Management Algorithm © Developed 2010, Revised 2013.**

Appendix 4: Skin Tear Management\textsuperscript{18,19} and Prevention

Skin Tear Management Algorithm

**First Aid**

- If bleeding, apply local pressure and/or elevation to achieve haemostasis.
- Immediate wound care.
- Clean wound with normal saline or antiseptic solution.
- Remove any debris or hematoma visible.
- Rigid skin flap to normal anatomical position with undue stretching.
- Pat skin dry.
- Consider medical review if:
  - Extensive tissue loss, need for surgical intervention, excess/uncontrolled bleeding,
  - Tetanus prophylaxis, concurrent injuries or other medical issues.

**Assessment**

- Assess skin and tissue damage.
- Classify skin tear using STAR tool.
  - Location:
  - Dimensions:
  - Exudate:
  - Pruritus:
  - Pain:

- If skin flap is pain, discoloured or darkened: STAR 1a or 1b, measure at next dressing change.

**Management**

- Goal of care: Wound closure by primary or secondary intention.

- Management:
  - Apply dressings\textsuperscript{28} see below.
  - Indicate direction of dressing removal.
  - Minimise risk of infection.
  - Consider secondary protection.
  - Pain relief as required.

- Document:
  - Skin tear assessment.
  - Risk factors.
  - Initial management.
  - Plan of care and review dates.
  - Prevention strategies.

- Reassess:
  - Individual skin tear, including progress, outcome and changes to plan of care.

**Dressing selection**

- Atraumatic or low tack dressings (e.g., silicone or gel coated).

- Dressing selection will depend on wound characteristics and dressing availability.

**Additional wound product considerations**

- Calcium Alginate
- Keratocel\textsuperscript{28}
- Curasso\textsuperscript{28}
- Alginate M\textsuperscript{28}
- Hydrogel
- Integra\textsuperscript{28}
- Pulmon\textsuperscript{28}
- Intrinsic Contourable\textsuperscript{28}
- Aquacel\textsuperscript{28}
- Abdominal dressing
- Zerolin\textsuperscript{28}
- DryMax\textsuperscript{28}
- Exceto\textsuperscript{28}

- Dressing
- Foam
- Allevyn\textsuperscript{28}
- Biatain\textsuperscript{28}
- Cavidan\textsuperscript{28}

- Underplastering
- Softta\textsuperscript{28}
- Weber\textsuperscript{28}
- Tubular bandage
- Light cohesive bandage

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WoundsWest. Skin Tear Algorithm\textsuperscript{2}. Developed 2010. Revised 2013.

STAR Tool

Skin Tear Prevention Strategies

Refer to the following WACHS Clinical Practice Standards in conjunction with the information found in this section:
- Patient Hygiene
- Delirium Management
- Falls Prevention and Management
- Pressure Injury Prevention and Management

Where patients present with, and/or are assessed at risk of skin tears consider implementing and providing education for the following prevention strategies:

<table>
<thead>
<tr>
<th>Safe Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Dress patient in appropriate clothing: long sleeves, and trousers; avoid restrictive clothes.</td>
</tr>
<tr>
<td>- Inspect patient’s room, bed and equipment for sharp edges.</td>
</tr>
<tr>
<td>- Provide safe area for wandering, where appropriate.</td>
</tr>
<tr>
<td>- Encourage patient to wear: comfortable non-slip shoes; visual and hearing aids.</td>
</tr>
<tr>
<td>- Ensure clinical staff and patients maintain short nails, and avoid wearing jewelry.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Injury Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Prevent friction and shear injuries when turning, lifting and transferring:</td>
</tr>
<tr>
<td>- Use slide sheets to reposition in bed.</td>
</tr>
<tr>
<td>- Use appropriate lifting device suitable for patient and intended transfer from bed to chair.</td>
</tr>
<tr>
<td>- Exercise caution in the use of equipment, e.g. commodes, wheelchairs, stretchers and side-rails.</td>
</tr>
<tr>
<td>- Prevent falls injuries:</td>
</tr>
<tr>
<td>- Undertake Mobility and Falls Risk assessments as soon as possible after admission.</td>
</tr>
<tr>
<td>- Implement falls risk strategies; use appropriate mobility aids; provide adequate lighting.</td>
</tr>
<tr>
<td>- Protect patients skin and limbs from injury:</td>
</tr>
<tr>
<td>- Prevent limbs dangling from bed, chair or stretcher.</td>
</tr>
<tr>
<td>- Use pillows and blankets to support patient position and/or protect from equipment.</td>
</tr>
<tr>
<td>- Protect limbs with long sleeves or tubular dressing retainer.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appropriate Skin Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Use skin cleansing agents, and emollients that do not alter skin pH.</td>
</tr>
<tr>
<td>- Maintain patient’s skin hydration.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clinical Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Optimise nutrition and hydration. Refer to Dietitian where indicated.</td>
</tr>
<tr>
<td>- Review medications known to alter skin integrity.</td>
</tr>
<tr>
<td>- Provide education regarding promoting skin integrity health, e.g. smoking cessation</td>
</tr>
<tr>
<td>- When providing wound care consider the following in relation to patient’s skin condition:</td>
</tr>
<tr>
<td>- Non-adherent dressings, and secure in place with tubular or crepe bandage.</td>
</tr>
<tr>
<td>- Avoid fixation tapes e.g. Fixomul®, use paper or cloth tape as alternatives.</td>
</tr>
<tr>
<td>- Use skin preparation solution before applying tape, and adhesive solvent to remove tapes.</td>
</tr>
</tbody>
</table>
Appendix 5: Burn Management

Burn Management Algorithm

First aid
- Cool the burn, wash the patient
- Isolate first aid area
- Stop burning process: remove heat source
- Remove clothing and jewellery
- Cool the burn with cool running water for 30 minutes
- Warm the patient: bilateral as required
- Observe for hypothermia

Assessment
- Assess depth and extent of burn
  - Adult:
    - Wallace rule of nines for %TBSA burn
  - Child:
    - Modified Lund and Browder chart for %TBSA burn
- Management during transport
  - < 3 hours:
    - Apply saline soaked dressings to cool the burn
  - > 2 hours:
    - Silver (silver age) + sterile water compress + net and gauze
  - *Keep patient warm

Adult Referral in WA
- Royal Perth Hospital (RPH)
  - Ph (08) 9224 2224

Children's Referral VIA
- Princess Margaret Hospital (PMH)
  - Ph (08) 9224 2222

Refer to:
- Burns > 10% TBSA
- Charring/thermal or full thickness
- Inhalational burns
- Chemical burns
- Electrical burns
- Burns to face, neck, extremities, joints
- Burns with concomitant injuries

Additional for children
- Burns > 5% TBSA
- Suspension of non-accidental injury
- Pain control
- Inhaled burns

Management
- Goal of care: Prevent infection and promote healing
- Dressing selection will depend on burn characteristics, dressing protocols and product or dressing availability (see dressing chart)

Superficial thickness
- Involves epidermis
- Presentation: Pink, red, painful
- Management:
  - Apply hydrogel to soothe
  - Gauze drenched to moisten burn area
  - See above chart

Superficial partial thickness
- Involves epidermis and superficial dermis
- Presentation: Blistered, mottled pink, painful, cool, hair intact
- Management:
  - Cool blisters
  - Apply dressings

Deep partial thickness
- Involves dermis and deep dermis
- Presentation: Blisters, mottled red or white, discomfort, reduced or absence of hair

Management
- Dered blisters
- Debrid electro-coagulation
- Apply dressings

Full thickness
- Involves epidermis, dermis and may include fat
- Presentation: Blackened, mottled, pale

Management:
- Apply dressings
- Refer to closest specialist burns unit

Consider
- Pain management
- Prevention of contraction
- Pressure garments
- Physiotherapy
- Nutrition
- Psychological support

Wound healed
- Burn prevention
- Scar management

Yes
- Restrain patient
- Medical consultation
- Specialist referral
- Refer Chronic wound algorithm

No

WoundsWest Burn Management Algorithm © Developed 2013. Revised 2013.

Burn Management Algorithm – Part 2

Dressing Guidelines for Burns

- Dressing selection will depend on burn characteristics, dressing protocols and product of dressing availability.

Superficial thickness: Partial thickness: Full thickness:

If erythema only:
- Apply emollient cream mixed with
  tannin or isobutanol cream.
- Derma bisters
- Dressing selection:
  - Alginate and retention tape
  - Hydrogel sheet with retention tape
  - Amorphous hydrocolloid with foam

If blistered and pink/white wound bed:
- Derma bisters
- Dressing selection:
  - Alginate and retention tape
  - Enzyme algogel (Flaminio™) & foam
  - Amorphous hydrocolloid with foam

If wound bed sloughy:
- Derma bisters
- Dressing selection:
  - Alginate and retention tape
  - Enzyme algogel (Flaminio™) & foam

If signs of infection:
- Apply strips of nanocrystalline silver (Acticoat™) under hydrocolloid dressing

Hard eschar or whitish wound bed:
- Dressing selection:
  - Enzyme algogel (Flaminio™) and foam

If signs of infection:
- Apply nanocrystalline silver (Acticoat™) compresses, or
- Apply strips of nanocrystalline silver (Acticoat™) under hydrocolloid dressing

Dressing guidance per Royal Perth Hospital Burns Service


Appendix 6: Suture and Staple Removal

Ensure to remove sutures or staples from healed wounds as directed by Medical Officer, Nurse Practitioner or senior clinician. Refer to post-operative instructions in patient health record.

Procedure: Removal of Interrupted Sutures and Staples

**Equipment Required**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sterile dressing pack</td>
<td>Sterile metal, fine, non-toothed, serrated dressing forceps (McIndoe)</td>
</tr>
<tr>
<td>Sodium Chloride 0.9%</td>
<td>Sterile stitch cutter or staple remover</td>
</tr>
<tr>
<td>PPE: gloves, safety glasses</td>
<td>Wound closure strips or sterile adhesive dressing</td>
</tr>
<tr>
<td>Disposal receptacle</td>
<td>Sharps container</td>
</tr>
</tbody>
</table>

**Prepare Equipment and Patient**

- Perform **Hand Hygiene** and don/change PPE at all appropriate moments throughout procedure.
- Ensure to use an **Aseptic Non-Touch Technique** throughout procedure.
  1. Explain procedure to patient and obtain appropriate consent.
  2. Offer and administer analgesia as required. Refer to [WACHS Medication Administration Policy](#).
  3. Adjust bed height suitable to those undertaking procedure. Perform hand hygiene.
  4. Ensuring privacy and chaperone considerations, position patient comfortably.
  5. Prepare equipment. Remove dressing, if present.
  6. Cleanse and dry wound using an aseptic technique.
- Remove alternate sutures or staples, and assess wound for dehiscence during procedure.

**Suture (Interrupted) Removal**

- Gently grasp the knot of the suture with forceps and raise it slightly.
- Place the curved tip of the suture cutter underneath the knot, as close to the skin as possible.
- Gently cut the suture and pull out with forceps.
- Ensure exposed suture material is not pulled through the wound.
- Place removed suture onto gauze.
- Inspect removed suture to ensure all material is removed.

**Staple Removal**

- Place the lower jaw of the remover under the staple.
- Squeeze the handle to completely close the device, bend the staple, and pull the edges out of the skin.
- Gently move the staple away from the incision site, when both ends of the staple are visible.
- Relax pressure on handles to release staple either: onto gauze or into sharps container.

If wound begins to dehisce after removal of alternate sutures or staples then cease procedure:

- Apply wound closure strips, and redress as appropriate.
- Contact Medical Officer/ Senior Clinician for advice.

If wound edges remain approximated:

- Cleanse and dry incision line.
- Apply wound closure strips if indicated.
- Dispose of waste into appropriate containers. Remove PPE, and perform hand hygiene.
- Document suture/ staple removal in patient health record.
References


