SCOPE: National

Clinical Protocol for Venous Leg Ulcer Management

The following protocol outlines the sequence of events in the assessment and management of a client with a venous leg ulcer. This protocol should be read in conjunction with nursing procedures, *Wound - Ankle Brachial Pressure Index CC-NPM-3.08a* and *Wound - Application of Lower Leg Compression Bandaging CC-NPM-3.12a.*

Process	Action	Guidance	Clinical Considerations/Alerts
Assessment	A complete history is taken. Assess for features that may indicate client has venous insufficiency. **Medical History** Ageing, history of DVT, valvular incompetence, trauma to legs, family history, obesity, vein surgery, multiple pregnancies, prolonged standing. **Ulceration** Single or multiple shallow, irregular shaped wounds in gaiter region (trauma/infection may localise ulcers laterally or proximal locations) with granulation and fibrinous tissue and moderate to high serous exudate. **Surrounding tissue** Oedema, varicose ulcers, pigmentation to gaiter region, maceration, eczematous changes, atrophe blanche lesions, lipodermatosclerosis. Assess for correctable factors that may delay or inhibit wound healing.	**Client history** • Medical, surgical, allergy history • Wound history (how it occurred, when did it occur, previous leg ulcers and treatments). • Current medications (prescribed and over the counter). • Previous diagnostic investigations • Health Care professional involvement • Social and occupancy history • Assess physical and joint mobility • Activities of daily living/carer support	
Examination of vascular status	Complete vascular assessment of the lower limbs to confirm the presence of venous symptoms and exclude possible arterial disease.	• Palpate pedal/leg pulses and record (if unable to palpate record if pulses audible on Doppler) • Assess capillary return • Assess peripheral perfusion • Assess limb sensation (using monofilament – if sensory neuropathy present, complete neuro-ischaemic foot assessment). • Perform Doppler assessment to obtain ABPI reading.	If clinical picture does not compliment client history or unable to accurately complete vascular assessment (including ABPI) or unable to determine wound diagnosis refer client to CNCM/NP for further assessment. All clients with a lower leg wound require a vascular assessment including ABPI to be completed within two weeks of admission.

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Examination of wound and skin	Complete wound assessment on ComCare™ Wound Module.	• Assess clinical features of the wound and surrounding skin. • Identify presence of other wounds/lesions • Pain assessment • Assess for signs and symptoms of localised and systemic infection	Check both lower limbs for wounds routinely Generally localised symptoms of infection can be managed with increased frequency of dressing changes +/- topical antimicrobial dressings therefore excluding need for AB therapy. For symptoms of systemic infection refer to GP/NP for investigations/appropriate AB therapy. If client has two (2) or more wound infections in six months requiring ABs, refer to NP for further investigations/management.
Management	**Urgent Referrals:** • Life/limb threatening infection • Acute ischaemic changes • Treatment required outside RN/EN scope of practice • Suspected acute DVT • New client with an ABPI <0.7 or ankle systolic <80mmHg • Ulcerations on high risk clients or on the foot. • Significant deterioration in wound since last dressing/review.	• Extending cellulitis, with increased limb oedema, exudate and malodour. • Fever, rigors, nausea, vomiting • Tachycardia, hypertension, increased BGL (known diabetic). • Decreased pedal pulses, changes in sensation and increased pain. • Lymphadenopathy/lymph angitis • Significant deterioration with presence of underlying structures (bone, tendon, muscle). • Refer client to AWAS after consultation with CON/CNCM if wound fails to show signs of healing within four weeks or signs of deterioration.	Limb/life threatening infections require ED presentation. Clients with acute ischaemic changes or suspected DVT require urgent medical review. Refer to AWAS/NP Refer to AWAS/NP If the wound fails to heal despite optimal management then consultation with CNCM/NP/GP as further investigations may be required.
Skin Hygiene (Peri-wound)	Complete a risk assessment of the client, wound and environment to determine if a surgical or standard aseptic technique is required to cleanse the wound and the solution used to do so. Assess the condition of client's feet and nails (with particular attention paid to in between toes) and provide education on foot care as this can often be the source of skin/wound infection if not well maintained. Skin hygiene is attended at each dressing/bandage change	**Option 1:** **Use plastic bowl/bucket lined with disposable, single use plastic liner.** • Cleanse the peri-wound and leg using warm potable tap water and a pH appropriate cleanser. • It is recommended that the foot be placed in/over an empty lined bucket/bowel and a separate receptacle is used to pour water over the leg. • Care should be taken to avoid reintroducing the	Cleansing of the leg/surrounding tissue is separate from the action of cleansing and dressing the wound, as greater precautions and different solutions may be required for this purpose. The container used for wound cleansing is cleaned using detergent before and after use and allowed to dry. The container used for wound cleansing must be clean, in good condition, kept for this purpose only and stored in a covered area.

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		collected water over the leg or wound. • Disposable or clean linen is required for washing and drying **Option 2:** **Client to wash leg/wound under the shower then cover the wound with temporary dressing** • Client to attend normal showering/hygiene activities with the wound left covered and waterproofed using plastic bag • On completing hygiene activities, the client can remove the bandaging and dressing and wash leg/wound under the running shower using pH friendly cleanser if required • A separate clean towel should be used to dry the leg/wound and a temporary dressing is applied until wound care can be attended. **Option 3:** **Use single use disposable skin cleaning wipes.**	Do not soak the leg/wound in bucket of water Option 2 is not appropriate for clients who have urine or faecal incontinence, are cognitively impaired, are at risk of falls, have had repeated infections or if an environment that doesn't support this process, eg the cleanliness of the shower cubicle.
Skin Hydration and Maintenance	Skin maintenance care is attended at each dressing/bandage change	• Gently remove any loose dry skin debris • Corticosteroid ointments/creams may be required short term to treat any underlying dermatitis or venous eczema • Apply moisturiser to surrounding tissue/lower limb (avoid in between toes)	Topical corticosteroids should be applied as directed and requires a medication authority. Alternative option to corticosteroid creams may be to trial the application of zinc paste bandages however if this doesn't resolve the dermatitis/venous eczema referral to GP/NP for further assessment. Check client allergies prior to recommending/applying moisturiser creams.

Wound Dressing Procedure

- Apply dressing as determined by wound assessment.
- Topical antimicrobial dressings should only be applied if symptoms of critical colonisation or localised infection are present and requires to be reviewed on fortnightly basis.
- If recurrent or on-going use of antimicrobial dressings is required to manage wound symptoms then review by CNCM/NP is needed.

- Frequency of dressing/bandage changes is determined by risk assessment of client/wound and the volume of exudate.

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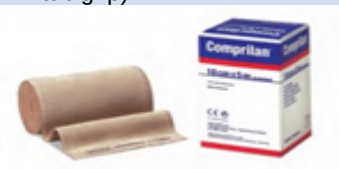
Compression Bandaging **(First Line Management Option)**	Apply compression bandaging as per procedure to maintain ankle pressure of between 30-40mmHg	• Four component bandage system (Soffban®, crepe, Lastodur®, Coban® cohesive) • Padding bandage, eg Soffban®(0mmHg)  • White crepe (0mmHg)  • Light elastic bandage Lastodur® (figure 8 application 16-18mmHg)  • Cohesive bandage Coban® (22-25mmHg) 	Clinical and vascular assessment has excluded the presence of arterial disease and have an ABPI of between 0.8-1.2
Compression Bandaging **(Second Line Management Option)**	Apply compression bandaging as per procedure to maintain ankle pressure of between 30-40mmHg	• PütterPro 2® (2 layer system) 	Clinical and vascular assessment has excluded the presence of arterial disease and have an ABPI of between 0.8-1.2 Bandage application is only required 1-2 times per week. Unable to tolerate constant pressure of first line management option (particularly over shin). Requires approval by CNCM/NP

Process	Action	Guidance	Clinical Considerations/Alerts
Compression Bandaging **(Third Line Management Option)**	Apply compression bandaging as per procedure to maintain ankle pressure of between 30-40mmHg	• Inelastic bandages (2 Comprilan® bandages over Soffban® with tubigrip) 	Clinical and vascular assessment has excluded the presence of arterial disease and have an ABPI of between 0.8-1.2 Unable to tolerate constant pressure of first line management option (particularly over shin) and/or requires bandage application daily to manage exudate/oedema.
Modified Compression Bandaging – Moderate to Light **(First Line Management Option)**	Apply compression as per procedure to maintain ankle pressure of 25mmHg	• 3 component bandage system • Padding bandage, eg Soffban® (0mmHg)  • White crepe (0mmHg)  • Cohesive bandage Coban® (22-25mmHg) 	Clinical and vascular assessment suggestive of mixed vessel disease or possible calcified vessels with an ABPI of 0.7-0.8 or >1.2 Client's skin is fragile/delicate and unable to tolerate higher levels of compression (eg those on steroid treatment or warfarin). Client unable to tolerate higher levels of compression – verified by client pain symptoms.
Modified Compression Bandaging – Moderate to Light **(Second Line Management Option)**	Apply compression as per procedure to maintain ankle pressure of 25mmHg	• Inelastic bandage system Coban Lite® (2 layer system) 	As above Bandage application is only required 1-2 times per week. Requires approval by CNCM/NP.
Modified Compression Bandaging – Moderate to Light **(Third Line Management Option)**	Apply compression as per procedure to maintain ankle pressure of 25mmHg.	Inelastic bandage (1 Comprilan® bandage over Soffban® with tubigrip. 	As above Unable to tolerate constant pressure of first line management option (particularly over shin) and/or requires bandage application daily to manage exudate/oedema.

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Modified Compression Bandaging – Moderate to light **(Fourth Line Management Option)**	To maintain ankle pressure of 25mmHg	• Graduated tubigrip • Include customised options	Clients who don't have any underlying venous/arterial disease but have minimal ankle/surrounding tissue oedema secondary to surgery/trauma. Clients who meet criteria for modified compression and have been assessed as appropriate for shared care management. Cannot tolerate/maintain compression bandage systems.
Modified Compression Bandaging – Light Compression	To maintain ankle pressure between 16-18mmHg	• Padding bandage e.g. Soffban® (0mmHg)  • Lastodur® Light (figure 8 application 16-18mmHg)  • Tubular retention bandage (eg Tubifast®)	Clients with history of suspected mixed arterial venous disease with ABPI 0.5-0.69 Clients with fragile/delicate skin who cannot tolerate any other form of compression
Review / Evaluate	Minimal requirements of client review is monthly	More frequent reviews and escalation to CON will be required if: • Client develops further ulcerations • Unable to tolerate treatment • Clients requiring antimicrobial dressings/antibiotic therapy more than two weeks • Discharge from hospital/respite. • Client has required more than two adjustments to care plan in 2 weeks. • Client has multiple comorbidities	If the wound fails to progress despite optimal management within 4 weeks or wound fails to heal within 12 weeks then refer to CNC/NP/GP for further consultation.

Process	Action	Guidance	Clinical Considerations/Alerts
Leg Ulcer Prevention	Maintenance compression bandage is required for at least two weeks following healed ulcer	• Educate client on skin care • Measure and refer client to appropriate resources for compression hosiery/applicators • Educate client/carer on the application/removal of compression hosiery • Educate client on re-referral process to Silver Chain if further leg ulcerations develop	If client is re-referred to Silver Chain services with two or more leg ulcer recurrence, refer to CNC/NP for further assessment/consultation.